

**LOYOLA UNIVERSITY CHICAGO
SCHOOL OF EDUCATION**

**SELECTED TOPICS: SINGLE-CASE RESEARCH DESIGN
RMTD 422
SUMMER SESSION A 2011**

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Time: Tuesday & Thursday, 5:00 – 8:00 PM
Classroom: CLC – Room 602
Office Hours: By Appointment on Tuesdays

COURSE DESCRIPTION

This course provides an in-depth study of single-case research design including assessment, experimental design, data evaluation, and writing research proposals using single-case methodology. Many of the best practices and interventions in the social, behavioral, and educational sciences have been the direct result of single-case research. Single-case designs provide educators, practitioners, and researchers with a structure for systematically collecting data within a framework that will enable them to demonstrate a functional relationship between their practices and changes in behavior. The end result is empirical support of the intervention or instructional method. As such, it is important for graduate students in disciplines such as education, psychology, and social work to have the knowledge to design, implement, and evaluate research using single-case research designs. This course will provide students with an opportunity for detailed study of single-case research designs, the logic behind these designs, and the application of these designs to intervention research. As national attention has recently been placed on the importance of single case research design and on enhancing the scientific rigor of implementation, analysis, and interpretation, this course promises to be invaluable for students interested in conducting applied research!

COURSE OBJECTIVES

- To describe the history of single-case research design.
- To examine the ethics of single-case research design.
- To describe the fundamental assumptions, goals, and practices of single-case research design.
- To master use of strategies for collecting data for single-case research design.
- To master production and interpretation of graphic data displays.
- To master use of various single-case research designs including reversal designs, multiple baseline designs, and comparative designs.
- To produce a well-written single-case research design proposal.
- To critique published single-case research design reports.
- To examine the use of single-case research designs for evaluating the effectiveness of interventions.

SCHOOL OF EDUCATION CONCEPTUAL FRAMEWORK

“Professionalism in Service of Social Justice” is the conceptual framework infused into all programs within the School of Education. The underlying beliefs or principles that form the foundation of this framework include sensitivity and concern for others as essential societal values, and also the belief that caring for others will enhance the moral core of our communities and via a ripple effect, our society and the world as well. A desire to help others is an admirable first step, but collaborating cross-culturally to make a lasting impact beyond the level of the individual involves a more specialized set of

competencies, some of which will be emphasized in this course. Education-related professionals who desire to demonstrate effectiveness in diverse settings (where social justice is of such primary importance) must strive to understand themselves while simultaneously trying to assess the needs, resources, and priorities of the communities they serve. Commitment to the challenging interpersonal work of collaborative research is the tool to be developed here. However, serving students, clients, families, and communities requires a commitment to a larger and more abstract notion of social justice, because a true 'end' or measurable goal of social justice may not be immediately apparent. Professionals must aim for fairness or equality for all while planning for various local purposes. Otherwise, they inadvertently reinforce a status quo that contains an inherent socially unjust power imbalance. For current or future school professionals, this might mean moving from an attitude of awareness of diversity to actually trying to bring others together. Some of this may come from increasing others' awareness of diversity. One may lead by example through demonstrating reflection about one's heritage, social class, and family dynamics, and one's place in various systems. These skills can also be put to use in collaborations across the fields of education and psychology (including the critical examination and conducting of research). To join a team that is already successful and striving to enhance their current work is a privilege. To join a team that has failed in the past and views itself as being at the mercy of systemic and societal forces is, needless to say, a challenge. Often these organizations are in need of a fresh viewpoint and a renewed commitment to social justice, and it is in addressing this need that students in Loyola's School of Education are uniquely qualified to assist. The following Conceptual Framework standards are emphasized in this course:

CF Standards	Activities
Candidates demonstrate...	
CF1: ...an understanding of a current body of literature and are able to critically evaluate new practices and research in their field	- Class lectures addressing the state of the field of educational research - Development of a topical literature review and practice with available search techniques and resources
CF2: ...knowledge and skills in a variety of school and professional settings.	-Application of research techniques to areas of personal interest
CF3: ...an understanding of issues of social justice and inequity.	- Class lectures which highlight features of Institutional review board policies
CF4: ...skills that will enable them to work effectively with diverse clients.	-Article critique and research proposal
CF5: ...technological knowledge and skills which enhance education.	-Development of a research proposal
CF6: ...professional decision-making skills and behaviors in advancing social justice and service.	-Discussion and activities related to designing appropriate research designs -Research proposal
CF7: ...how moral and ethical decisions shape actions directed toward service to others.	-Students will be encouraged to explore these issues as they develop research questions
CF8: ...an ability to apply principles in professional decision-making.	- Article critique and research proposal

ALIGNMENT WITH NCATE/ISBE/NASP STANDARDS**NCATE**

1.3, 2.2, 2.3, 2.4, 11.6

These standards are assessed by students' participation in class discussions, and through their written assignments involving critiques of published research studies that use a variety of philosophical perspectives and methods.

ISBE

Principal standards 1Q, 6O, 2HH

School Leader standards 1Q, 3T, 5F, 1D, 1N, 2Y, 3K, 1S, 2AA, 2CC, 1N, 3K, 4A, 6E, 6F, 6H

Superintendent standards 1I, 2D, 4T,

Standards relating to understanding and using quantitative and qualitative data are assessed through the written assignments where students must evaluate published research, and through the final project that consists of a research study proposal. Ethical issues and policy implications of research are also part of the written assignments and class discussions.

NASP

2: Research and Program Evaluation: School psychologists have knowledge of research, statistics, and evaluation methods. School psychologists evaluate research, translate research into practice, and understand research design and statistics in sufficient depth to plan and conduct investigations and program evaluations for improvement of services. This standard is assessed through the article critiques, the class facilitation, and the final project. Students must also evaluate the design and results of published research in their particular fields.

REQUIRED READINGS

- Kazdin, A.E. (2011). *Single-case research design: Methods for clinical and applied settings* (2nd ed.). New York, NY: Oxford University Press. ISBN: 978-0-19-534188-1.

Additional readings will be assigned by the instructor and students. Many of these will be empirical journal articles students will search for and download from online databases found at Loyola University's library site. Other required readings (e.g., book chapters) will be posted on Blackboard or handed out in class.

RECOMMENDED READINGS

- American Psychological Association. (2010). *Publication manual of the American Psychological Association* (6th ed.). Washington, DC: Author.
- Hayes, S.C., Barlow, D.H., & Nelson-Gray, R.O. (1999). *The scientist practitioner: Research and accountability in the age of managed care* (2nd ed.). Needham Heights, MA: Allyn & Bacon.
- Horner, R.H., Carr, E.G., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single-subject research to identify evidence-based practices in special education. *Exceptional Children*, *71*, 165-179.
- Jenson, W. R., Clark, E., Kircher, K. C., & Kirstjansson, S. D. (2007). Statistical reform: Evidence-based practice, meta-analyses, and single-subject designs. *Psychology in the Schools*, *44*, 483-493.
- Kratochwill, T.R., & Levin, J.R. (1992). *Single-case research design and analysis: New directions for psychology and education*. Routledge.

- McDougall, D., Hawkins, J., Brady, M., & Jenkins, A. (2006). Recent innovations in the changing criterion design: Implications for research and practice in special education. *The Journal of Special Education, 40*, 2-15.
- Odom, S. L., & Strain, P. S. (2002). Evidence-based practice in early intervention/early childhood special education: Single subject design. *Journal of Early Intervention, 25*, 151-160.
- Park, H., Marascuilo, L., & Gaylord-Ross, R. (1990). Visual inspection and statistical analysis in single-case designs. *Journal of Experimental Education, 58*, 311-320.
- Riley-Tillman, T.C., & Burns, M.K. (2009). *Evaluating educational interventions: Single-case design for measuring response to intervention*. New York, NY: The Guilford Press.
- Scruggs, T. E., Mastropieri, M. A., & Regan, K. S. (2006). Statistical analysis for single subject research designs. *Advances in Learning and Behavioral Disabilities, 19*, 35-56.
- Shadish, W.R., Cook, T.D., & Campbell, D.T. (2002). *Experimental and quasi-experimental designs for generalized causal inference* (2nd ed.). Boston, MA: Houghton Mifflin Company.

METHODS OF INSTRUCTION

This course will consist of lectures, guest lecturers, group discussions, group activities, and student presentations. Students are expected to have read the assigned materials before class to ensure questions and concerns may be addressed during the class period (although general discussion of relevant topics is always encouraged). I am not the sole source of information, nor am I all-knowing! Please think of me as a facilitator – not a unidirectional lecturer. In order to facilitate learning in this course, everyone will: READ (regular readings will be assigned to serve as a foundation for discussion); WRITE (each student will complete writing assignments); TEACH (everyone will have a chance to facilitate learning); and DISCUSS (actively!).

DIVERSITY

In concert with the mission statement for the SOE, faculty, academic activities, and learning environments will be sensitive and driven by individual, cultural, social and economic diversity awareness and respect.

ACCESSIBILITY

Students who have disabilities which they believe entitle them to accommodations under the Americans with Disabilities Act should register with the Services for Students with Disabilities (SSWD) office. To request accommodations, students must schedule an appointment with an SSWD coordinator. Students should contact SSWD at least four weeks before their first semester or term at Loyola. Returning students should schedule an appointment within the first two weeks of the semester or term. The University policy on accommodations and participation in courses is available at:

<http://www.luc.edu/sswd/>.

HARASSMENT (BIAS REPORTING)

It is unacceptable and a violation of university policy to harass, discriminate against or abuse any person because of his or her race, color, national origin, gender, sexual orientation, disability, religion, age or any other characteristic protected by applicable law. Such behavior threatens to destroy the environment of tolerance and mutual respect that must prevail for this university to fulfill its educational and health care mission. For this reason, every incident of harassment, discrimination or abuse undermines the aspirations and attacks the ideals of our community. The university qualifies these incidents as incidents of bias.

In order to uphold our mission of being Chicago's Jesuit Catholic University-- a diverse community seeking God in all things and working to expand knowledge in the service of humanity through learning, justice and faith, any incident(s) of bias must be reported and appropriately addressed. Therefore, the Bias Response (BR) Team was created to assist members of the Loyola University Chicago community in bringing incidents of bias to the attention of the university. If you believe you are subject to such bias, you should notify the Bias Response Team at this link: <http://webapps.luc.edu/biasreporting/>.

ACADEMIC HONESTY

Academic honesty is an expression of interpersonal justice, responsibility and care, applicable to Loyola University faculty, students, and staff, which demands that the pursuit of knowledge in the university community be carried out with sincerity and integrity. The School of Education's Policy on Academic Integrity can be found at: http://www.luc.edu/education/academics_policies_integrity.shtml. For additional academic policies and procedures refer to: http://www.luc.edu/education/academics_policies_main.shtml.

PLAGIARISM

It is important to reiterate the policy of Loyola University regarding plagiarism. The following is an excerpt from information shared by The English Department and should serve as a reminder to all students.

“Definition:

Plagiarism is the intentional or unintentional appropriation of ideas, language, or work of another without sufficient acknowledgement that the material is not one's own. Although, it is generally recognized that everything an individual has thought has probably been influenced to some degree by the previously expressed thoughts and actions of others and that therefore no thought can be purely original, such influences are general ones, affecting an entire way of seeing things and expressing thoughts. Plagiarism, however, involves the taking of specific words or ideas of others without proper acknowledgement.

Some students seem to believe that there are different degrees of plagiarism, some of which are not as bad as others...(I) wish to make clear that there are no distinctions between...

1. Copying from a published source without proper documentation.
2. Purchasing a pre-written paper.
3. Letting someone else write a paper for you or paying someone to do so,
4. Submitting as your own someone else's unpublished work, either with or without permission.”

If you have additional questions, I highly recommend the following interactive tutorial about what is and what is not plagiarism at <http://www.indiana.edu/~istd/>. In addition, I reserve the right to use the TurnItIn program (<http://turnitin.com/static/index.html>) for any written assignment without prior notice to the class.

CLASS COMMUNICATION

Blackboard will be the main method of communication with students enrolled in this course. Because Blackboard uses your Loyola computer account, students are responsible for making sure that their account is in good working order. Also, students are responsible for checking their account for emails related to this class. If you have a personal email you would rather use, you may forward emails from your student account to the personal account.

TECHNOLOGY

Technology is an essential tool for developing one's own professional skills and for completing any degree program. This course assumes a basic and practical knowledge of technology. I assume students will be proficient at word processing (including creating tables and diagrams), communicating via Loyola GroupWise e-mail and Blackboard, and downloading Microsoft Word and Acrobat Reader files. In terms of performing article searches, it is helpful to have had experience; however, resource librarians are usually more than happy to help you with this. In fact, we will visit with one in order to make sure all of you are on an even playing field in this regard. Otherwise, if you are not familiar with any of the preceding skills/equipment, it is your responsibility to become so.

COURSE REQUIREMENTS & EVALUATION PROCEDURES

Assignments must be completed on time and submitted in class on the dates noted. Ten percent of the total points possible will be deducted for each day past the due date.

All written assignments (unless otherwise specified) must be typewritten and conform to the writing style and formats specified in the Publication Manual of the American Psychological Association, 6th edition. Please submit a paper copy of each assignment in class.

Course Requirement/Assignment	Due Date	Points Possible
Class Participation	Ongoing	30
Article Critique/Discussion Lead	Ongoing	25
Research Proposal	Th 7/1	55
Research Proposal Presentation	Th 7/1	25
Total Points Possible		135

1. Class Participation. Your regular attendance and active participation are expected. The kinds of experiences you will receive in class are not ones that can be "made up" or compensated for by any amount of reading or writing of papers. Participation will be measured by participation in class discussions and completion of in-class activities/assignments. Participation is more than talking in class. Participation means allowing oneself to become engaged in the learning process. Good examples of participation include contributing comments and examples from your experiences, as well as building on the comments of others. Raising questions and listening and responding to others' comments and contributions also count. You should also be sensitive to your own level of participation and either increase it or decrease it when appropriate.

You may not earn participation points when you are engaged in activities such as side conversations with classmates, browsing the net, instant messaging, emailing, texting, and/or making/accepting phone calls during class. You also may not earn participation points when you do not attend class. Therefore, regular attendance is mandatory. *Students who have more than one absence or are regularly late to class are subject to failing this course at the instructor's discretion.* If circumstances dictate you must miss a class meeting, or you have a day when you have to arrive late to class, you must alert the instructor ahead of the class meeting. If circumstances do not permit this, you must contact the instructor as soon as possible to make her aware of the situation.

2. Article Critique/Discussion Lead. In teams, you will lead the class in a discussion/article critique once during the semester. First, you will choose an empirical study using the design you selected (e.g., ABAB) that has been published in a refereed journal. This study must have been published within the last 10 years. Then, you will post the article to the Discussion Board on Bb no later than 3 days before you lead the class discussion. For example, if you lead the discussion for the critique of a study using an ABAB design, you will post your article to Bb no later than Monday, 5/30/11. In preparation for the discussion, the instructor and all class members will read the article. Finally, you will lead the class in a discussion critiquing the selected study. You may structure the discussion in any way you choose (within reason). It will last no more than 45 minutes and may include a PowerPoint presentation, activities, whole group discussion, etc. The product of this assignment is not a written article critique. Rather, you will be evaluated on how well you facilitate a critique of the study – thus, demonstrating your ability to critique an empirical study implementing a single-case research design.

3. Research Proposal. The culminating project for the course is a research proposal. You will work individually to develop at least one research question, review the literature, and develop a plan for examining the question(s). Because this is a proposal, you will use future tense in your writing.

Introduction:

Purpose Statement: Discuss what the research is about, including why the topic is important to research.

Background Literature: Provide a brief description of previous research and literature that logically leads to the need for your research.

Research Questions and Hypotheses: Write at least 1 research question and hypothesis (you will probably have more than 1).

Method:

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

Setting: Describe the setting in which your study takes place.

Measures: Clearly describe all of the measures used in your project. Attach copies of the precise materials used, if applicable.

Research Design: Clearly describe the research design used in your study, including criteria/decision rules for phase changes. Discuss major threats to internal validity.

Procedures: Clearly describe in a step-by-step manner what you did with the individual(s). Include description of the procedures during the baseline, treatment, maintenance, and/or generalization phases. Include sufficient detail that someone else could replicate your procedures. Describe how you will measure treatment integrity.

Social Validity: Describe the social validity of your study.

Analysis:

Describe all the analyses you are going to use (visual and statistical) in great detail. Also describe when/how you will determine interobserver agreement.

Results:

Prepare graphs and tables (if applicable) showing what you expect your data might look like (using dummy data).

Implications:

Describe anticipated implications of your proposed study, and provide suggestions for future research. Identify what you learned from developing the proposal. Include a brief reflection on single-case research methodology in general and your proposal in particular.

4. **Research Proposal Presentation.** Using PowerPoint (or another comparable program), you will present your research proposal to the class. The presentation will last approximately 15-20 minutes.

As needed, scoring rubrics and guidelines for assignments will be attached to the syllabus, posted on Blackboard, and/or distributed in class.

Final course grades will be assigned as follows:

Total Points Earned	%	Grade
125-135	93-100	A
121-124	90-92	A-
117-120	87-89	B+
112-116	83-86	B
108-111	80-82	B-
104-107	77-79	C+
98-103	73-76	C
94-97	70-72	C-
90-93	67-69	D+
81-89	60-66	D
<81	<60	F

FINAL NOTE . . .

Your role in this course is to come to class prepared to actively discuss the readings and participate in class. I am here to help you in any reasonable way I can. I encourage you to make an appointment with me sooner, rather than later, if you are having difficulty with the course material. I am more than happy to meet with you at a mutually agreeable time. The best way to reach me is through email.

TENTATIVE COURSE SCHEDULE

Course schedule is tentative and subject to change. Changes will be announced in class.

Date	Topics	Due Dates	Readings
Tues, 5/24	Course Overview		Immediately begin thinking about an area of interest for your research proposal.
Thurs, 5/26	Introduction Underpinnings of Scientific Research		Chapters 1 and 2
Tues, 5/31	Assessment		Chapters 3, 4, and 5
Thurs, 6/2	Introduction to Single-Case Research and ABAB Designs		Chapter 6 Journal Readings
Tues, 6/7	Multiple-Baseline Designs	ABAB Critique (post article by 6/4)	Student-Selected Article Chapter 7 Journal Readings
Thurs, 6/9	Changing-Criterion Designs	MBD Critique (post article by 6/6)	Student-Selected Article Chapter 8 Journal Readings
Tues, 6/14	Multiple-Treatment Designs	CCD Critique (post article by 6/11)	Student-Selected Article Chapter 9 Journal Readings
Thurs, 6/16	Additional Design Options	MTD Critique (post article by 6/13)	Student-Selected Article Chapter 10 Journal Readings
Tues, 6/21	Quasi-Single-Case Experimental Designs	Additional Design Options Critique (post article by 6/18)	Student-Selected Article Chapter 11 Journal Readings
Thurs, 6/23	Evaluation	Quasi-Single-Case Experimental Designs Critique (post article by 6/20)	Student-Selected Article Chapters 12 and 13

Tues, 6/28	Research Proposal Presentations Perspectives and Contributions Wrap-Up	Research Proposal Presentation	Student-Selected Article Chapters 14 and 15
Thurs, 6/30	Research Proposal Presentations Course Evaluations	Research Proposal Presentation Research Proposal Presentation	

JOURNAL READINGS**ABAB (Thurs, 6/2)**

[Using Choice to Increase Time On-Task, Task-Completion, and Accuracy for Students with Emotional/Behavior Disorders in a Residential Facility.](#) Full Text Available By: Ramsey, Michelle L.; Jolivette, Kristine; Patterson, DaShaunda Pucker; Kennedy, Christina. Education & Treatment of Children, Feb2010, Vol. 33 Issue 1, p1-21, 21p

[Using Prompts to Increase Attendance at Groups for Survivors of Domestic Violence.](#) Detail Only Available By: Martinez, Katherine K.; Wong, Stephen E.. Research on Social Work Practice, Jul2009, Vol. 19 Issue 4, p460-463, 4p

MBD (Tues, 6/7)

[Treatment of flying phobia using virtual reality: data from a 1-year follow-up using a multiple baseline design.](#) Full Text Available By: Botella, C.; Osma, J.; Garcia-Palacios, A.; Quero, S.; Baños, R. M.. Clinical Psychology & Psychotherapy, Sep/Oct2004, Vol. 11 Issue 5, p311-323, 13p

[Facilitating independence in personal activities of daily living after a severe traumatic brain injury.](#) Full Text Available By: Kelly, Fiona; Nikopoulos, Christos K.; Brooks, Neil; Harrington, Helen. International Journal of Therapy & Rehabilitation, Sep2010, Vol. 17 Issue 9, p474-482, 9p

CCD (Thurs, 6/9)

[Treating a Child's Selective Eating Through Parent Implemented Feeding Intervention in the Home Setting.](#) Full Text Available By: Gentry, Joseph; Luiselli, James. Journal of Developmental & Physical Disabilities, Feb2008, Vol. 20 Issue 1, p63-70, 8p

[Bicycle Riding: Pedaling Made Possible Through Positive Behavioral Interventions.](#) Full Text Available By: Cameron, Michael J.; Shapiro, Robert L.; Ainsleigh, Susan A.. Journal of Positive Behavior Interventions, Summer2005, Vol. 7 Issue 3, p153-158, 6p

MTD (Tues, 6/14)

[In-Store Experimental Approach to Pricing and Consumer Behavior.](#) Detail Only Available By: Sigurdsson, Valdimar; Foxall, Gordon; Saevarsson, Hugi. Journal of Organizational Behavior Management, Jul-Sep2010, Vol. 30 Issue 3, p234-246, 13p

[A LONG-TERM ANALYSIS OF THE RELATIONSHIP BETWEEN FLUENCY AND THE TRAINING AND MAINTENANCE OF COMPLEX MATH SKILLS.](#) Full Text Available By: Singer-Dudek, Jessica; Greer, R. Douglas. Psychological Record, Summer2005, Vol. 55 Issue 3, p361-376, 16p

Additional Design Options (Thurs, 6/16)

[IMPACT OF A COMPREHENSIVE SAFETY PROGRAM ON BICYCLE HELMET USE AMONG MIDDLE-SCHOOL CHILDREN.](#) Detail Only Available By: **Van Houten**, Ron; Joy **Van Houten**; Malenfant, J. E. Louis. Journal of Applied Behavior Analysis, Summer2007, Vol. 40 Issue 2, p239-247, 9p

[The Parental Daily Diary: A Sensitive Measure of the Process of Change in a Child Maltreatment Prevention Program.](#) Detail Only Available By: Peterson, Lizette; Tremblay, George; Ewigman, Bernard; Popkey, Connie. Behavior Modification, Oct2002, Vol. 26 Issue 5, p627, 21p

Quasi-Single-Case Experimental Designs (Tues, 6/21)

[Intervening to Decrease Alcohol Abuse at University Parties.](#) Detail Only Available By: **Fournier**, Angela K.; **Ehrhart**, Ian J.; Glindemann, Kent E.; Geller, E. Scott. Behavior Modification, Mar2004, Vol. 28 Issue 2, p167-181, 15p