



UNIVERSITY OF  
**NORTHERN  
COLORADO**

**COLLEGE OF EDUCATION & BEHAVIORAL SCIENCES  
SCHOOL OF SPECIAL EDUCATION**

**EDSE 732: Research in Exceptionalities  
(3 Semester Hours)**

**INSTRUCTOR:**

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**PREREQUISITES:**

None

**COURSE DESCRIPTION:**

This course introduces doctoral level personnel to the basic research designs and methods used in exceptionalities education. Students learn to analyze the research literature and design a small-scale research proposal. Special emphasis is placed on skills (understanding, assumption, reading and abstracting articles, interpreting data, and evaluating results) necessary to understand the relationship between research strategies and problems in special education and gifted education.

**RELATIONSHIP OF THIS COURSE TO THE PROGRAM KNOWLEDGE BASE:**

The faculty of the School of Special Education shall facilitate the development of educators who are able to implement professional standards, advocate for children and youth with exceptionalities and their families, and adhere to the following beliefs and values:

- Children and youth with exceptionalities are part of a larger community of diverse learners;
- Children and youth with exceptionalities can learn when provided with effective and/or differentiated instruction, the adaptation of the learning environment, and culturally responsive pedagogy and curriculum;
- Children and youth with exceptionalities excel when they are held to high standards and expectations;
- The larger mission of education is best served when special educators collaborate with families, general educators, and related services professionals;
- Children and youth with exceptionalities develop lifelong attitudes and behaviors when responsibility, self-determination, and ownership of their education are expected.

Students learn about research methods in exceptionalities education and evaluate current and historical research for its contribution to the research base.

**DOCTORAL COMPETENCIES ADDRESSED:**

1. Design and investigate cogent research questions through both qualitative and quantitative research designs.
2. Contribute to the professional literature and the exceptionalities research base.
3. Demonstrate depth of knowledge in a specialized area of exceptionality.
4. Apply research-based practices in exceptionalities.
5. Identify promising practices that are amenable to further research.
6. Understand and implement the multiple applications of technology.

**COURSE OBJECTIVES:**

Students will:

- Discuss substantive issues and methodological considerations for conducting research in special education.
- Identify basic research designs and approaches to educational inquiry.
- Describe the research process, including problem definition, review of the extant research literature, study design, data collection and analysis, and presentation of findings.
- Critically evaluate educational research studies to ascertain their credibility and usefulness.
- Develop an appreciation for the research process.

**OUTLINE OF COURSE CONTENT:**

1. Educational research and issues
  - a. Research process
  - b. Controversies and unanswered questions in special education and gifted education
  - c. Legislative leadership
2. Research foundation
  - a. Reviewing the literature
  - b. Searching the literature
  - c. What Works Clearinghouse
3. Experimental and quasi-experimental designs in special, gifted, and talented education
4. Correlational and causal-comparative designs in special, gifted, and talented education
5. Qualitative designs in special, gifted, and talented education
6. Program evaluation
7. Evaluating research
  - a. Checking citations
  - b. Data presentation
  - c. Meta-analysis
8. Interpretation and use of research

**REQUIRED TEXTS:**

American Psychological Association (2009). *Publication manual of the American Psychological Association* (6th Ed.). Washington, DC: American Psychological Association.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4<sup>th</sup> Edition). Thousand Oaks, CA: Sage Publications.

#### **ADDITIONAL READINGS [Provided in Canvas]**

Brantlinger, E., Jimenez, R., Klingner, J., Pugach, M., Richardson, V. (2005). Qualitative studies in special education. *Exceptional Children, 71*, 195-207.

Gersten, R., Fuchs, L. S., Compton, D., Coyne, M., Greenwood, C., & Innocenti, M. S. (2005). Quality indicators for group experimental and quasi-experimental research in special education. *Exceptional Children, 71*, 149-164.

Graham, S. (2010). With a little help from my friends (and Mark Twain too): Musings and farewell. *Exceptional Children, 76*, 389-393.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105-117). London: Sage.

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 practice in special education. *Exceptional Children, 71*, 165-179.

Johnson, R. B. (2001). Toward a new classification of nonexperimental quantitative research. *Educational Researcher, 30*(2), 3-13

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher, 33*(7), 14-26.

Mertens, D. M., & McLaughlin, J. A. (2004). *Research and evaluation methods in special education*. Thousand Oaks, CA: Corwin Press, Inc. [Specific chapters]

Odom, S. L., Brantlinger, E., Gersten, R., Horner, R. H., Thompson, B., & Harris, K. R. (2004). *Quality indicators for research in special education and guidelines for evidence-based practices: Executive Summary. Task Force on Quality Indicators for Special Education Research*. Arlington, VA: Council for Exceptional Children, Division for Research.

Odom, S. L., Brantlinger, E., Gersten, R., Horner, R. H., Thompson, B., & Harris, K. R. (2005). Research in special education: Scientific methods and evidence-based practices. *Exceptional Children, 71*, 137-148.

Shavelson, R., & Towne, L. (Eds.). (2002). *Scientific research in education*. Washington, DC: National Academy Press.

Thompson, B., Diamond, K.E., McWilliam, R., Snyder, P., & Snyder, S.W. (2005). Evaluating the quality of evidence from correlational research for evidence-based practice. *Exceptional Children, 71*, 181-194.

Wilder, R. S. (2006). Understanding and evaluating research: Developing skills in evaluating research articles. *Access, 20*(10), 51-53.

**COURSE REQUIREMENTS: [Refer to the Schedule for the Due Dates]**

Assignments	Points
<p><i>Participation &amp; Understanding of Readings:</i>                      (a) Review 5 Research Studies based on guidelines provided (35 points each= 175 points); <b>SEE APPENDIX A</b>                      (b) Participate in Discussion Board postings (25 points).                      Online discussion participation includes at least one original posting from you <b>(at least 2-3 well-developed paragraphs)</b> and two response postings.</p>	200
<p><i>Research Synthesis and Proposal:</i>                      The following assignments are intended to be integrated and culminate in a final research proposal on a topic of choice for the students. The purpose of this assignment is to enhance an appreciation for the research process through increasing your understanding of how to conduct your own research within special education. Students will not be asked to conduct original research, but through the development of a proposal, they will incorporate major topics covered in this class</p>	
<p>a. Submit your proposal topic and brief 1-2 page outline [STEP 1]</p>	20
<p>b. Research Synthesis &amp; Research Questions: This assignment will serve as the first part of the final research proposal. Students are to write a 12-15 page synthesis and analysis of the existing research on the topic of their choice. This exercise should naturally lead to the development of at least 2 research questions. [STEP 2]</p>	100
<p>c. Research Proposal: The 5-7 page completed research proposal will include a brief summary of the literature review (from STEP 2 above), a statement of 1-3 research questions, description of methods and procedures, and significance or contribution to your field. [STEP 3]</p>	80
<p>d. Literature review and Proposal Presentation: During the final 2 sessions, students will present their proposals– details on this project to follow.</p>	50
<b>TOTAL</b>	<b>500</b>

**GRADING CRITERIA**

Grade	Score	Percentage	Grade	Score	Percentage
A	475 or more	95-100	C	400- 419	80-83
A-	465- 474	93-94	C-	390- 399	78-79
B+	455- 464	91-92	D+	380- 389	76-77
B	440- 454	88-90	D	360- 379	72-75
B-	430- 439	86-87	D-	350- 359	70-71
C+	420- 429	84-85	F	349 or less	Less than 70

### **Accommodations Statement**

Students who believe that they may need accommodations in this class are encouraged to contact the Disability Support Services, voice/TTY (970) 351-2289, or fax (970) 351-4166, or visit [www.unco.edu/dss](http://www.unco.edu/dss) as soon as possible to ensure that accommodations are implemented in a timely fashion.

### **Academic Honesty**

Students are required to follow guidelines related to academic honesty as outlined in the student handbook, available at <http://www.unco.edu/dos/docs/StudentHandbook.pdf>. Also see guidance related to plagiarism at [http://www.unco.edu/dos/student\\_plagiarism.html](http://www.unco.edu/dos/student_plagiarism.html).

The Generalist faculty have also implemented the following policies with respect to originality of products: Policy on Originality of Products: You are encouraged to build upon your own previous work from other classes and programs, and to integrate material and ideas that you have learned in other classes into this class, with appropriate referencing. But projects from other classes are not to be duplicated and turned in to fulfill this course's requirements, nor can you take work that you completed in another class and simply re-configure it, or enhance it, for this class. You also cannot take a project done in this class by another student who took this class at an earlier date, or is in this class now, and submit it as your project with or without minor changes. In other words, you are expected to do original work for each project and assignment that you complete in this class. Failure to do so means that, at the very least, you will receive an automatic "F" on that assignment, and the instructor can take additional action if he/she feels that it is necessary.

### **Inclusivity Statement**

The College of Education and Behavioral Sciences (CEBS) supports an inclusive learning environment where diversity and individual differences are understood, respected, appreciated, and recognized as a source of strength. We expect that students, faculty, administrators and staff within CEBS will respect differences and demonstrate diligence in understanding how other peoples' perspectives, behaviors, and worldviews may be different from their own.

### **Liability Statement pertaining to field experiences:**

UNC purchases insurance that provides liability coverage to teacher candidates (subject coverage limitations and deductibles of the applicable insurance policy) for claims made against the teacher candidate while s/he is acting in the course and scope of her/his responsibilities in field experience. Such coverage is subject to limitations and exclusions for, among other things, alleged intentional acts and other uncovered claims.

In addition, the teacher candidate, during her/his practice teaching in a school is deemed an employee of the school district for the purposes of workers' compensation and liability insurance as provided for other school employees.

### **UNC POLICY ON INCOMPLETE GRADES:**

An "I" is assigned due to unanticipated circumstances the **last week** of the term that make the student unable to complete course requirements within the allotted time (e.g. he/she missed the final examination due to sickness, an emergency in the family). The instructor must submit to the school director, a written notice of the specific coursework to be completed before the final grade is determined; a copy is kept in the school and one is provided to the student. To amend a grade of "I" with an earned grade on a student's transcript, the student must complete all incomplete

course work by the last day of the next semester, including summer term. If the course requirements are not completed within the time limitation and the grade received in the Registrar's Office, the grade will be recorded on the academic record as a failing or unsatisfactory grade.

**DISABILITY ACCESS:**

Any student requesting disability accommodation for this class must inform the instructor giving appropriate notice. Students are encouraged to contact Disability Support Services at (970) 351-2289 to certify documentation of disability and to ensure appropriate accommodations are implemented in a timely manner.

**ACADEMIC HONESTY:**

Students are required to follow guidelines related to academic honesty as outlined in the student handbook, available at <http://www.unco.edu/dos/handbook/links.htm>. Also see guidance related to plagiarism at [http://www.unco.edu/dos/student\\_plagiarism.html](http://www.unco.edu/dos/student_plagiarism.html).

## APPENDIX A

### Guidelines for Five Research Article Reviews

#### **\*First Review: Group Experimental OR Quasi-experimental Design (35 pts)**

Please provide details/ examples where relevant. Answer as many questions as you can, based on the study you read. Remember, all studies may not discuss all of these questions/topics below. **Please limit your review to no more than 3 pages.**

#### **\*\*\*Provide the Study Citation in APA style:**

**1. Describe the design:** (e.g., experimental/ non-experimental/ quasi experimental? randomized controlled? Matched comparison groups? Non-matched comparison? Pre-post with no control etc.)

#### **2. Quality Indicators for Conceptualization of the Research Study**

- A compelling case for the importance of the research is.
- Valid arguments supporting the proposed intervention as well as the nature of the comparison group are presented.
- The research questions are appropriate for the purpose of the study and are stated clearly.

#### **3. Quality Indicators for Describing Participants:**

- Sufficient information to determine/confirm whether the participants demonstrated the exceptionalities or difficulties addressed is presented.
- Appropriate procedures are used to increase the probability that participants were comparable across conditions.
- Differential attrition among intervention groups or severe overall attrition is documented.
- Sufficient information describing important characteristics of the intervention providers is supplied, and appropriate procedures to increase the probability that intervention providers were comparable across conditions are used.

#### **4. Quality Indicators for Implementation of the Intervention and Description of the Nature of Services in Comparison Conditions**

- The intervention is clearly described and specified.
- Fidelity of implementation is described and assessed in terms of surface (the expected intervention is implemented) and quality (how well the intervention is implemented) features.
- The nature of services provided in comparison conditions are described and documented.

#### **5. Quality Indicator for Outcome Measures:**

- Multiple measures are used to provide an appropriate balance between measures closely aligned with the intervention and measures of generalized performance.
- Evidence of reliability and validity for the outcome measures is provided.
- Outcomes for capturing the interventions effect are measured at the appropriate times.
- Data collectors and/or scorers are blind to study conditions and equally (un)familiar to examinees across study condition.
- Adequate interscorer agreement is documented.

#### **6. Quality Indicators for Data Analysis**

- The data analysis techniques chosen are appropriate and linked in an integral fashion to key research questions and hypotheses.

- The variability within each sample is accounted for either by sampling or statistical techniques such as analysis of covariance.
- The researcher should clearly link the unit of analysis chosen to the key statistical analyses.
- A power analysis is provided to describe the adequacy of the minimum cell size. A power analysis is conducted for each unit of analysis to be examined (e.g., school and class as well as student).

**7. The results are presented in clear, coherent, fashion.**

**8. Do you think the evidence in this study is “strong,” “possible,” “neither”?**

**\*Second Review: Correlational OR Causal-Comparative Design (35 pts)**

*Please provide details/ examples where relevant. Answer as many questions as you can, based on the study you read. Remember, all studies may not discuss all of these questions/topics below. Please limit your review to no more than 3 pages.*

**\*\*\*Provide the Study Citation in APA style:**

- 1. Briefly describe the study (include the research questions/ purpose/ participants).**
- 2. Briefly describe the design & procedure.**
- 3. What was the quality of outcomes reported:**
  - Well-established measures used?
  - Real-world measures?
  - Self-report outcomes corroborated with other measures?
- 4. Were outcomes reported for all participants: even those who left the program early?**
- 5. Were long-term outcomes reported?**
- 6. Were limitations of the study clearly reported?**
- 7. Practical and Clinical Significance?**
  - One or more effect size statistics is reported for each study primary outcome, and the effect statistic used is clearly identified?
  - Authors interpret study effect sizes for selected practices by directly and explicitly comparing study effects with those reported in related prior studies?
  - Authors explicitly consider study design and effect size statistic limitations as part of effect interpretation?
- 8. Sample size adequate?**
- 9. Results reported in meaningful terms? (discuss Confidence intervals for Reliability Coefficients, Statistics, and Effect Sizes)**
- 10. If subgroup analysis reported, are authors appropriately cautious in this discussion?**
- 11. Are outcomes reported on measures on which no results or negative results were obtained?**
- 12. Do you think the evidence in this study is “strong”, “possible”, “neither”?**
- 13. Any additional information you may want to share based on the suggested Quality Indicators for Correlational Research by Thompson et al.?**

### **\*Third Review: Single-Subject Research Design (35 pts)**

*Please provide details/ examples where relevant. Answer as many questions as you can, based on the study you read. Remember, all studies may not discuss all of these questions/topics below. Please limit your review to no more than 3 pages.*

**\*\*\*Provide the Study Citation in APA style.**

#### **1. What is the purpose of the study? Are the research questions specified?**

#### **2. Description of Participants and settings:**

- a. Participants are described with sufficient detail to allow others to select individuals with similar characteristics (e.g., age, gender, disability, diagnosis).
- b. The process for selecting participants is described with replicable precision.
- c. Critical features of the physical setting are described with sufficient precision to allow replication.

#### **3. Dependent Variable**

- a. Dependent variables are described with operational precision.
- b. Each dependent variable is measured with a procedure that generates a quantifiable index.
- c. Measurement of the dependent variable is valid and described with replicable precision.
- d. Dependent variables are measured repeatedly over time.
- e. Data are collected on the reliability or interobserver agreement (IOA) associated with each dependent variable, and IOA levels meet minimal standards (e.g., IOA = 80%; Kappa = 60%).

#### **4. Independent Variable**

- a. Independent variable is described with replicable precision.
- b. Independent variable is systematically manipulated and under the control of the experimenter.
- c. Overt measurement of the fidelity of implementation for the independent variable is highly desirable.

#### **5. Baseline**

- a. The majority of single-subject research studies will include a baseline phase that provides repeated measurement of a dependent variable and establishes a pattern of responding that can be used to predict the pattern of future performance, if introduction or manipulation of the independent variable did not occur.
- b. Baseline conditions are described with replicable precision.

#### **6. Experimental Control/Internal Validity**

- a. The design provides at least three demonstrations of experimental effect at three different points in time.
- b. The design controls for common threats to internal validity (e.g., permits elimination of rival hypotheses).
- c. The results document a pattern that demonstrates experimental control.

#### **7. External Validity**

- a. Experimental effects are replicated across participants, settings, or materials to establish external validity.

**8. Social Validity**

- a. The dependent variable is socially important.
- b. The magnitude of change in the dependent variable resulting from the intervention is socially important.
- c. Implementation of the independent variable is practical and cost effective.
- d. Social validity is enhanced by implementation of the independent variable over extended time periods, by typical intervention agents, in typical physical and social contexts.

**9. Do you think the evidence in this study is “strong,” “possible,” or “neither”?**

### **\*Fourth Review: Qualitative Research Design (35 pts)**

Please provide details/ examples where relevant. Answer as many questions as you can, based on the study you read. Remember, all studies may not discuss all of these questions/topics below. **Please limit your review to no more than 3 pages.**

**\*\*\*Provide the Study Citation in APA style.**

**1. What is the purpose of the study? Are the research questions specified?**

**2. You may choose any one to report on based on your article (Interview studies or Observation Studies or Document Analysis). If your article uses more than one component, please report on all relevant components.**

*a. Interview Studies (or Interview Components of Comprehensive Studies)*

- Appropriate participants are selected (purposefully identified, effectively recruited, adequate number, representative of population of interest).
- Interview questions are reasonable (clearly worded, not leading, appropriate and sufficient for exploring domains of interest).
- Adequate mechanisms are used to record and transcribe interviews.
- Participants are represented sensitively and fairly in the report.
- Sound measures are used to ensure confidentiality.

*b. Observation Studies (or Observation Components of Comprehensive Studies)*

- Appropriate setting(s) and/or people are selected for observation.
- Sufficient time is spent in the field (number and duration of observations, study time span).
- Researcher fits into the site (accepted, respected, unobtrusive).
- Research has minimal impact on setting (except for action research, which is purposely designed to have an impact).
- Field notes systematically collected (videotaped, audiotaped, written during or soon after observations).
- Sound measures are used to ensure confidentiality of participants and settings.

*c. Document Analysis*

- Meaningful documents (texts, artifacts, objects, pictures) are found and their relevance is established.
- Documents are obtained and stored in a careful manner.
- Documents are sufficiently described and cited,
- Sound measures are used to ensure confidentiality of private documents.

**3. Data Analysis**

- Results are sorted and coded in a systematic and meaningful way.
- Sufficient rationale is provided for what was (or was not) included in the report.
- Documentation of methods used to establish trustworthiness and credibility are clear.
- Reflection about researchers' personal position/ perspectives are provided.
- Conclusions are substantiated by sufficient quotations from participants, field notes of observations, and evidence of documentation inspection.
- Connections are made with related research.

**4. Any additional information you may want to share based on the suggested Quality Indicators for Qualitative Research by Brantlinger et al.?**

**\*Fifth Review: Survey Research Design (35 pts)**

*Please provide details/ examples where relevant. Answer as many questions as you can, based on the study you read. Remember, all studies may not discuss all of these questions/topics below. **Please limit your review to no more than 3 pages.***

**\*\*\*Provide the study citation in APA style.**

- 1. What is the purpose of the study?**
- 2. What are the research questions?**
- 3. What kind of pre-planning activities (i.e., activities that are undertaken before the survey was sent to the participants) do the researchers describe in their article?**
- 4. Did the researchers conduct any pilot study? Based on the pilot study, what were the changes made to the study?**
- 5. Who are the population, sampling frame, and sample for the survey? How are the participants recruited? Do you think there may be any sampling bias/error?**
- 6. Briefly describe the survey used in the study.**
- 7. How was the survey conducted? For example, how was the survey distributed? Was it a paper and pencil survey or an online survey? What else?**
- 8. Do the researchers mention information on the return rate/response rate of the survey?**
- 9. What analysis did the researchers use?**
- 10. What were the results?**
- 11. What were the limitations proposed by the researcher, if any?**
- 12. What were the directions for future research proposed by the researcher, if any?**
- 13. What were the implications for practice proposed by the researcher, if any?**
- 14. Based on your understanding of survey research designs, what do you think are the strengths and weaknesses of the study?**
- 15. Based on your understanding of survey research designs, what do you think are the strengths and weaknesses of the article? For example, what would have helped you understand the research and the results better?**
- 16. Any additional comments?**