

EDIT 891 Design Research Independent Study

Student Information

First Name: CHERYL
Last Name: BURRIS
G Number: 01498220
Email: cburris2@gmu.edu
Campus: Fairfax
Year: 2
PhD Advisor/Chair: Dr. Dawn Hathaway

Course Information

Semester: Fall 2025
Course type: EDIT 891
Credits: 3
Course Title: AI Approaches to Learning Gaps

Design Research Cycle Information and Rationale

This independent study is the first in a series of design research cycles examining how instructional designers at George Mason University meet the needs of neurodivergent students, including those with ADHD and autism, in their instructional designs. This stems from an urgent need for more evidence-based and inclusive instructional practices that support cognitive diversity, alongside the emerging opportunities and challenges presented by artificial intelligence (AI) in this field.

This initial cycle will conduct an exploratory needs analysis using qualitative research methods to document four key areas regarding how instructional designers consider and support neurodivergent learners:

1. The knowledge, best practices, and regulatory guidelines they follow.
2. Their process for design decisions.
3. The limitations or constraints they encounter.
4. The vision for the future inclusion of AI to address design gaps.

The results from this cycle are expected to guide the development and testing of future AI-driven scaffolds and frameworks for neurodiverse-inclusive design in later cycles.

Proposal Details

a. Goal of the research:

To examine current practices, knowledge, challenges, and attitudes of instructional designers at GMU when designing for neurodiverse learners, and to explore their views on AI's role in closing learning gaps for this group.

b. Need/Significance of the project:

There is a notable gap between the growing awareness of neurodiversity in higher education and the real-world implementation of inclusive practices by instructional designers. Research connecting theory to practice in this area is limited, and professionals must adapt to changing standards, regulations (such as ADA/504), and emerging technologies. This study addresses that gap by conducting original qualitative research with practitioners to provide practical insights and inform future AI-supported

inclusive design efforts. Previous work in universal design for learning and neuro-embracing frameworks will provide a strong theoretical foundation.

c. Schedule for completion of research:

- Weeks 1-2: Review literature, formulate research questions, draft interview protocol, and draft IRB application
- Weeks 3-4: Submit IRB, revise interview protocol, and begin participant recruitment
- Weeks 5-7: Conduct/record semi-structured interviews with GMU instructional designers
- Weeks 8-10: Transcribe interviews and begin initial coding
- Weeks 11-12: Complete qualitative data analysis and thematic synthesis
- Weeks 13-15: Draft research paper, revise with advisor input, and prepare for submission
- Week 16: Submit final paper

d. Special sources to be consulted:

- George Mason University accessibility and instructional design policy documents
- ADA, Section 504, and federal/state accessibility regulations
- Key literature in universal design for learning (UDL), neurodiversity research, and AI in education
- Peer-reviewed educational technology journals

e. Tutorial schedule with instructor:

- Purpose: Review progress, troubleshoot issues, and plan next steps
- Frequency: Weekly meetings/check-ins, virtual or face-to-face
- Schedule: Date and time pending instructor feedback and availability
- Agenda:

Week	Discussion Topic
1	☐ Outline course objectives
2	☐ Conduct literature review ☐ Plan IRB
3	☐ Submit IRB ☐ Address ethics/protocol challenges ☐ Determine participant recruitment strategies
4	☐ Refine/finalize interview protocol and recruitment strategies (as necessary)
5	☐ Review early participant feedback ☐ Adjust interview protocol (as necessary)
6	☐ Assess initial interview impressions ☐ Determine emerging themes
7	☐ Debrief completed interviews ☐ Calibrate coding strategy
8	☐ Conduct midpoint review of progress, barriers, and next steps ☐ Improve codes ☐ Examine major themes
9	☐ Interpret findings ☐ Highlight AI-related themes/perspectives

10	☐ Discuss study results ☐ Draft paper outline
11	☐ Tie literature to findings ☐ Refine implications for design/AI use
12	☐ Submit draft(s) to supervisor for feedback: ○ Introduction ○ Statement of Purpose and Research Question ○ Positionality
13	☐ Submit draft(s) to supervisor for feedback: ○ Methods ○ Findings
14	☐ Submit draft(s) to supervisor for feedback: ○ Discussion ○ Limitations
15	☐ Submit draft(s) to supervisor for feedback: ○ Future Research ○ Conclusion ○ Abstract
16	☐ Submit final paper for grade

f. Evaluation procedures:

- Review and Feedback:
 - Completion and approval of IRB materials
 - Participation in weekly check-ins
 - Timeliness of all deliverables
- Graded for Completeness and Alignment with Research Aims:
 - Quality and rigor of the interview protocol and qualitative methods
 - Thematic depth and insightfulness of preliminary findings
 - Clarity, scholarly rigor, and originality of the final paper

g. Research design:

- **Research Problem/Questions:**
 - Problem: Are instructional designers at GMU adequately considering neurodiverse students in their instructional designs?
 - Questions:
 1. What theories, best practices, and regulations inform their work?
 2. How do they make decisions and tolerate/compensate for institutional or practical limitations?
 3. How do they envision AI supporting neurodivergent learners?
- **Hypotheses/Questions:**

While this study is exploratory, it is guided by the hypothesis that there are both gaps and strengths in current designer knowledge and that AI is viewed as a promising but underexplored support tool.

- **Procedures:**
 - Semi-structured interviews with 4-6 professional instructional designers
 - Purposeful sampling
 - Data to be transcribed and coded using thematic analysis
- **Anticipated results:**
 - Identification of common patterns in knowledge and gaps
 - Documentation of real-world design constraints and innovations
 - Recommendations and conceptual pathways for AI-enriched inclusive design
- **Types of interpretation sought:**
 - Rich, nuanced understanding
 - Actionable recommendations for practice and future research cycles
- **Limitations anticipated:**
 - Limited generalizability to all institutions
 - Potential sampling bias based on participant engagement or interest

Choose independent study type: Research Course

Chair Name: Dr. Dawn Hathaway
 Email: dhathawa@gmu.edu

First Name: Cheryl
 Last Name: Burris
 Email: cburris2@gmu.edu

Instructor: Dr. Dawn Hathaway

Program of Study Verification: