EDIT 803 Section 001: Introduction to Design-Based Research
3 Credits Spring 2014
Monday 4:30 – 7:10 pm
Fairfax Campus – Thompson Hall L003*

PROFESSOR:

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COURSE DESCRIPTION

1. **Prerequisites –** EDIT 801 or permission of instructor
2. **Course description from the University Catalog:** Provides an introduction to systematic cycles of design-based research in education. Applicable to all content domains to explore cycles of research within design, development and implementation of educational and training interventions.

NATURE OF COURSE DELIVERY

This course will provide students with an introduction to design-based research. Design-based research is a research approach that systematically investigates teaching, learning and/or training phenomena through multiple cycles of design, development, evaluation and implementation of educational interventions (which may consist of curriculum/training interventions, systemic school programs, informal or formal teaching-learning strategies and materials, technology-based products and systems, etc.). This course will examine the history of this research approach along with related current literature, commentary and research.

STUDENT OUTCOMES

This course is designed to enable students to:
1. understand design-based research as a viable research approach;
2. investigate historical and current literature describing and evidencing design research;
3. identify specific teaching/learning/training phenomena to explore through design research cycles;
4. plan multiple cycles of design research to investigate teaching/learning/training phenomenon; and
5. write a literature review with corresponding research plan for a design research study.

PROFESSIONAL STANDARDS

This course adheres to the following Instructional Technology Program Goals and Standards/Competencies for Programs in Educational Communications and Instructional Technologies established by the Association of Educational Communication and Technologies (AECT) under the National Council for the Accreditation of Teacher Education (NCATE).

Standard – Apply current research and theory to the practice of instructional design
        a. Promote, apply and disseminate the results of instructional design theory and research.
        b. Read instructional design research, theory and practice literature.
        c. Apply concepts, techniques and theory of other disciplines to problems of learning, instruction and instructional design.

REQUIRED TEXTS

1) McKenney, S. and Reeves, T. (2012). Conducting Educational Design Research. London: Routledge.

RECOMMENDED TEXTS
2) Kelly, A.E., Lesh, R.A. and Baek, J.Y. (2008). Handbook of Design Research Methods in Education: Innovations in Science, Technology, Engineering and Mathematics Learning and Teaching, New York: Routledge.
3) Yun Dai, D. (2012) Design Research on Learning and Thinking in Educational Settings: Enhancing Intellectual Growth and Functioning. New York: Routledge

REQUIRED READINGS

1) A reading list of related historical and current writings on design research will be disseminated.
2) Plomp, T. and Nieveen, N. (2007) An Introduction to Educational Design Research and Introduction to the Collection of Illustrative Cases of Educational Design Reserach, the Netherlands: SLO-Netherlands Institute for curriculum development (Available PDF disseminated)

COURSE REQUIREMENTS, PERFORMANCE-BASED ASSESSMENT, AND EVALUATION CRITERIA

A. Requirements

1. <u>Literature review or synthesis</u> (30%) - Each student will identify a teaching, learning or training phenomenon to thoroughly investigate by examining related literature and provide theoretical grounding for their own potential design research study involving initial or iterative development, evaluation or implementation of an intervention (i.e. curriculum, program, course, system or strategy). Each literature review will adhere to the following parameters. :
- Examination of at least 10 current, related research and conceptual journal articles
- 5-10 page synthesis of the journal articles to represent current state of research in this

area and identified gap for a design research study
- Adherence to APA citation standards

2. <u>Review and presentation of design research case examples</u> (20%) - Each student will write reviews using designated form and present their individual analysis of two design research examples. The EDR case example will include a description of the context and methodological approach (curriculum/training interventions, systemic school programs, informal or formal teaching-learning strategies and materials, technology-based products and systems, etc.) for review.

Each review and presentation will be expected to provide:
- Two written 2- page reviews of two EDR cases according to presented format
- A posted presentation of the two cases – outlining related literature, research questions, research cycles, methods, analysis, results and conclusions
- A statement of how what was learned in the review of the two cases relates to the individual's area of interest in design research

3. <u>Research Plan</u> (40%) - Each student will write a research plan articulating specific potential phases of an iterative design research program of study related to an identified phenomenon and intervention. This research plan will be written in a manner similar to a grant or dissertation proposal containing the following elements:
- Statement of the problem
- Revision/Addition to existing literature review
- Generated theoretical conjectures and related potential research questions
- Articulated possible program of study including iterative cycles of integrated design and research aligned with specific design research phase(s)
- Alignment of initial learning targets, task analysis, intervention features and research questions
- Justification and rationale related to overall selection of methods, potential research questions for cycle and potential design implications to uncover

4. <u>Jigsaw Feedback on Literature Review and Research Plan</u> (10%) - Each student will read at least two other students' literature reviews and research plans to make suggestions and comments on substance, writing, research plan and implications, etc. This jigsaw feedback circle will require each student to be prepared to select, discuss and make constructive commentary on another's work. In this manner, all will benefit from multiple perspectives on the potential implementation of a design research study which will provide a reviewed plan for future doctoral courses. The jigsaw review will consist of:
- Each small group of three will read at least two other drafts of literature review
- Each student will switch drafts and come together to discuss at each of the three rounds
- Commentary, editing and suggestions will be conducted in one week
- Polished final drafts will be turned in on the due date for Literature Review and at the end of the course for the research plan.

B. **Performance-Based Assessments -** This course includes multiple performance-based

assessments: individual presentations, writing a literature review, revising and commenting on at least two other students' literature reviews, writing a research plan, revising and commenting on at least two other students' literature reviews.

C. Criteria for evaluation - Assessment of each performance assessment is guided by the rubric below.

	Exceeds Expectations (E = Exceeds Expectations) A level work	Meets Expectations (M = Meets Expectations) B level work	Below Expectations (B = Below Expectations) C level work
Review and presentation of design research cases (20%)	Well-written and presented research study review of cycle(s) of design research with description of the testing of the intervention. Concise overview of research questions literature, research questions, methods, results and conclusions presented. Evidence of consideration how this study could be considered or revised into a cycle of design research. A thorough consideration of how this study relates to the individual's area of interest in design research or what was learned about design research processes in this task.	Written and presented research study review of cycle(s) of design research with adequate description of the testing of the intervention. Overview of research questions literature, research questions, methods, results and conclusions presented. Some evidence of consideration how this study could be considered or revised into a cycle of design research. A statement of how this study relates to the individual's area of interest in design research or what was learned about design research processes in this task..	Poorly written and presented research study with little relevance to example of cycle(s) of design research with limited description of the testing of the intervention. Some overview of research questions literature, research questions, methods, results and conclusions presented. Little evidence of consideration how this study could be considered or revised into a cycle of design research. Limited statement of how this study relates to the individual's area of interest in design research or what was learned about design research processes in this task..
Literature review	Thorough literature review written on an	Adequate literature review written on an	Limited literature review written on an

or synthesis (30%)	identified teaching, learning or training phenomena of interest. Synthesis of theoretical grounding to inform future design research study planning. Evidence of review of at least 10 selective, current research and conceptual journal articles, 5-10 reviewed, professionally written pages and adherence to APA format.	identified teaching, learning or training phenomena of interest. Some synthesis of theoretical grounding to inform future design research study planning. Evidence of review of at least 10 current research and conceptual journal articles, 5-10 written pages and adherence to APA format.	identified teaching, learning or training phenomena of interest. Little synthesis of theoretical grounding to inform future design research study planning. Little evidence of review of less than 10 current research and conceptual journal articles, less than 5-10 written pages demonstrating little review/editing and not adequate adherence to APA format.
Research Plan (40%)	A thorough research plan that well-articulates specific phases of iterative design research. Well-conceptualized with logical connection to research questions. Plan includes logical statement of problem (falling from earlier literature review), theoretical conjectures and related research questions, demonstrated iterative cycles of design and research. The plan provides clear evidence of alignment of initial learning targets, task analysis, potential intervention features and research questions. Also demonstrated in the plan is a sound justification and rationale related to	A research plan that articulates phases of iterative design research. Conceptualized with logical connection to research questions. Plan includes statement of problem (falling from earlier literature review), theoretical conjectures and related research questions, iterative cycles of design and research. The plan provides evidence of some alignment of initial learning targets, task analysis, potential intervention features	A limited research plan that presents some phases of iterative design research. Conceptualized without logical connection to research questions. Plan does not include one or more of the following: statement of problem (falling from earlier literature review), theoretical conjectures and related research questions, iterative cycles of design and research. The plan provides little evidence of

	overall selection of methods, potential research questions for cycle and potential postulated design implications to uncover.	and research questions. Also demonstrated in the plan is some justification and rationale related to overall selection of methods, potential research questions for cycle and potential, postulated design implications based on cycles of research.	alignment of initial learning targets, task analysis, potential intervention features and research questions. Little justification and rationale related to overall selection of methods, potential research questions for cycle and potential, as well as postulated design implications based on cycles of research are presented.
Jigsaw Feedback (10%)	Evidence of outstanding commentary/editing on at least two other students' literature reviews and research plans with helpful, constructive suggestions and comments on substance, writing, research plan and implications, etc. Polished drafts are submitted to other students and instructor in a timely manner.	Evidence of commentary/editing on at least two other students' literature reviews and research plans with suggestions and comments on substance, writing, research plan and implications, etc. Polished drafts are submitted to other students and instructor by due dates.	Little or no evidence of commentary/editing on at least two other students' literature reviews and research plans with suggestions and comments on substance, writing, research plan and implications, etc. Drafts are not submitted to other students and instructor by due dates.

D. Grading Scale

Requirements	Percentage
Presentation of design research cycle example	20%
Literature review or synthesis	30%
Research Plan	40%
Jigsaw Feedback	10%

GMU POLICIES AND RESOURCES FOR STUDENTS
a. Students must adhere to the guidelines of the George Mason University Honor Code [See **http://oai.gmu.edu/the-mason-honor-code/**].

b. Students must follow the university policy for Responsible Use of Computing [See **http://universitypolicy.gmu.edu/policies/responsible-use-of-computing/**

c. Students are responsible for the content of university communications sent to their George Mason University email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program will be sent to students solely through their Mason email account.

d. The George Mason University Counseling and Psychological Services (CAPS) staff consists of professional counseling and clinical psychologists, social workers, and counselors who offer a wide range of services (e.g., individual and group counseling, workshops and outreach programs) to enhance students' personal experience and academic performance [See **http://caps.gmu.edu/**].

e. Students with disabilities who seek accommodations in a course must be registered with the George Mason University Office of Disability Services (ODS) and inform teir instructor, in writing, at the beginning of the semester [See **http://ods.gmu.edu/**].

f. Students must follow the university policy stating that all sound emitting devices shall be turned off during class unless otherwise authorized by the instructor.

g. The George Mason University Writing Center staff provides a variety of resources and services (e.g., tutoring, workshops, writing guides, handbooks) intended to support students as they work to construct and share knowledge through writing [See **http://writingcenter.gmu.edu/**].

PROFESSIONAL DISPOSITIONS
Students are expected to exhibit professional behaviors and dispositions at all times.

CORE VALUES COMMITMENT
The College of Education & Human Development is committed to collaboration, ethical leadership, innovation, research-based practice, and social justice. Students are expected to adhere to these principles. **http://cehd.gmu.edu/values**

For additional information on the College of Education and Human Development, Graduate School of Education, please visit our website [**See http://gse.gmu.edu/**]

**The instructor reserves the right to adjust the schedule and syllabus based on individual class needs.

PROPOSED CLASS SCHEDULE

WEEK	IN CLASS ACTIVITIES	PREPARATION FOR FOLLOWING CLASS ACTIVITIES
1 Jan 27 (F-toF)	Post Introductions/Revisiting Review Syllabus Review Intro to Design Research Begin Literature Review on <u>your individual area of focus</u> in Design Research	Read McKenney & Reeves, Chapter 1 Read Plomp & Nieveen, Chapters 1-2 Available Posted Online Readings
2 Feb 3 (Asynch-online)	Design Research: A Framework EDR Example Work on Literature Review	Read McKenney & Reeves, Chapter 2 Read Plomp & Nieveen, Chapters 3-4 Read Bannan-Ritland (2003) Available Posted Online Readings
3 Feb 10 **(Synch)**	Checking in Face to Face Contributions to Theory and Practice: Concepts and Examples Work on Literature Review	Read McKenney & Reeves, Chapter 3 Read Plomp & Nieveen, Chapters 5-6 Available Posted Online Readings
4 Feb 17 (Asynch-online)	Methods/Frameworks in Design Research Prepare Educational Design Research Example Presentation Work on Literature Review	Read McKenney & Reeves, Chapter 4 Available Posted Online Readings
5 Feb 24 (Asynch-online)	Analysis/Informed Exploration Work on Literature Review **DBR Case Chapter Review DUE** Review Design Research Examples	Read McKenney & Reeves, Chapter 5 Available Posted Online Readings
6 Mar 3 (Asynch-online)	Finalize literature review Review Design Research Examples	Read McKenney & Reeves, Chapter 5 Available Posted Online Readings
7 Mar 10 (no class)	*SPRING BREAK	

8 Mar 17 (Asynch - online)	Design and Construction Design Research cycle presentations Design Research Plan	Read McKenney & Reeves, Chapter 6 Available Posted Online Readings
9 Mar 24 (Synch)	**Literature Review DUE** Evaluation and Reflection Discuss Design Research Plans Read colleagues' Papers	Read McKenney & Reeves, Chapter 7 Available Posted Online Readings
10 Mar 31 (Asynch- online)	Implementation and Spread Work on Design Research Plan Design Research Presentations Read Collegial Papers	Read McKenney & Reeves, Chapter 8 Available Posted Online Readings
11 April 7 Asynch- online)	Writing Proposals for EDR Design Research: Exploration into Methodologies Work on Design Research Plan Feedback on Collegial Papers	Read McKenney & Reeves, Chapter 9 Available Posted Online Readings Refine Design Research Plan
12 April 14 (Asychn- online)	**DBR Case Chapter Review DUE** Reporting EDR Work on Design Research Plan Feedback on Collegial Papers	Read McKenney & Reeves Chapter10 Refine Design Research Plan
13 April 21 **(Synch)**	Looking back and ahead Finalize Design Research Plan Group Feedback on Design Plan	Refine Design Research Plan
14 April 28	Research Plan Finalize Design Research Plan	Refine Design Research Plan

(Aysnch-online)	Group Feedback on Design Plan	
15 May 5 **(Synch-online)**	Research Plan Finalize Design Research Plan Individual Meetings Week **Peer Jigsaw Feedback Due**	Refine Design Research Plan
16 May 12	**Final Design Research Plan - Due**	**Congratulations!**