EDC&I 582: Design-based Research Methods in Education II
A Two-Quarter Sequence (3 credits per quarter)

Spring 2007 Tuesdays, 4:30 – 6:50 Miller 320

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PLEASE NOTE: This class is the second half of a two-quarter sequence. It is only open to students who participated in the first portion of the sequence in the fall (EDC&I 581).

COURSE OVERVIEW

Design-based research methods are an emerging form of educational inquiry. In short, design-based research involves the orchestration and study of complex educational interventions in naturalistic settings. In contrast to methods that are strictly observational, design-based research seek to shape and even engineer learning environments and experiences "in the wild." While the first quarter of this class focused on identifying a context for design research and engaging in design activities, this second quarter focuses on the use of the design in a real-world context (e.g., not a contrived context) and the study of what takes place. Correspondingly, this course sequence provides students with an intensive experience in carrying out and reporting their own design-based research studies. Since it is also important to be mindful of the methods that we use (and their stage of development), we will also spend some time thinking critically about the status of our design research studies and the epistemological issues more generally associated with design-based research methods as they are currently practiced in education.

By the end of the two-quarter class sequence you will be able to:

1. Understand various forms of design-based research that are being conducted in the field of education.
2. Design a design-based study within one of the emerging forms.
3. Engage in design activities and discussion.
4. Conduct all phases of a design-based study, including original design work, entry into a setting, data collection, data reduction, data analysis, refinement of designs, and the reporting of research results.
5. Assemble and present conclusions from research in a rigorous and cogent form, both orally and in writing.
6. Offer constructive feedback on colleagues' work and incorporate feedback into one's own work.

PRACTICUM

At the heart of this course is the two-quarter practicum experience: each student (or team) will design and carry out a small-scale design research project. Our goal is for students to experience the full cycle of research, from the identification and narrowing of a problem to the final rendering and reporting of results. Where design and research framing activities were the primary focus of the first quarter, the focus in the second quarter will be on the analysis of the enactment of the design in a particular setting that happened in the intervening quarter and the communication of those results.

STUDY GROUPS

It is important to receive external feedback on research and design efforts all along the way. The instructors will provide feedback throughout the course in this vein. In addition, we will once again form small study groups (of 3 or 4 persons) that will meet periodically to review the direction and progress of each of the design studies underway. Groups will usually meet outside of class to discuss the projects (see schedule below). Please consider these study groups as an additional resource for providing input about your project.

COURSE POLICIES

1. Course credits: 3 units each quarter.
2. Students need to have been enrolled in EDC&I 581 before taking this class. Students must enroll in *both quarters*; credit will not be given for one quarter only.
3. Regular attendance and active participation is required. If for any reason you must miss the class, it is your responsibility to notify the instructor beforehand (in writing or by email) and to arrange with a fellow student to make up work and/or to obtain class notes and assignments. Students who have 3 or more unexcused absences during the 10 week quarter will receive "no credit" for the course.
4. Policy on R & I: Students may *not* use their work in this class as the basis for their Spring R & I presentation. Before using the work from this course for the R & I requirement, students should confer with their advisors and be prepared to engage in additional analyses and/or data collection at their advisor's discretion.

ASSIGNMENTS

1. Class Participation

   Class Discussions. All class members are expected to actively participate in the discussions each week about the readings and assignments.
   Presenting to Class. Members of class will be asked to present aspects of their unfolding analysis to the group in order to receive constructive feedback.
   Study Groups. Members of class are expected to actively participate in the activities of their assigned study group (3 meetings / quarter at a minimum).

2. Data Show-and-Tell **DUE: in April, early May**

   This quarter we'll operate more like a research group than a typical graduate seminar. In this vein, you will be asked to present a subset of the relevant data to the class for shared analysis (at least once). You might share a video segment from the enactment, transcripts from an interview, or a coding strategy with data instances along with a draft analysis. You should focus on the central point of your paper and frame the issues you are grappling with.

3. Research Paper Outline (3 to 5 pages, double-spaced) **DUE: 4/24**
   Who is your audience for this study? Where might you publish it? What are the central assertions emerging from your analysis? Whose work are you contradicting? Who has found something similar in the past? Why did you need to intervene in order to conduct this study? You will create an outline that will serve as a working document that summarizes at a high-level the overall structure and substance of your final research paper.

4. Preliminary Analysis Draft (5 to 7 pages, double-spaced) **DUE: 5/15**
   This working document should be a first draft of the main thrust of your analysis. It should involve interweaving research data with interpretation and analysis of that data and some initial discussion of the implications or conclusions. If the study went somewhat as planned, the analysis should speak to the research question you developed from your research proposal process.

5. Research Paper (10 to 15 pages, single-spaced) **DUE: 6/1**
   A culminating product for this class will be a completed research paper detailing your design research study. The paper should be tightly written and needs to take the form of a scholarly research article. I recommend that you follow a template with a 10-page limitation as this is a typical length requirement for peer-reviewed professional conferences, although you should write in the format that will ultimately be the most useful for you professionally. You will only be able to fully detail one or two assertions in sufficient depth in this length of paper, so you will need to selectively focus on particular aspects of your study / questions. **Research papers are due in Phil's box in Miller 312 on Friday, 6/1 by noon.**

6. Interactive Poster Presentation (poster or talk) **DATE: 6/5**
   The last class meeting will be organized as a combination interactive poster and formal talk session—presentation formats common to many research conferences. Each student or team will need to construct either: (a) a poster and demonstration experience or (b) a formal 12-minute talk so visitors can learn about your design research project. We will selectively invite relevant outsiders to attend this session in order to learn about your work.

GRADING POLICY

We expect all assignments to be completed in a timely fashion. All written work will be held to high standards and should conform to rules of proper grammar, usage, punctuation, and spelling. Because of time pressures, *late papers will not be accepted unless prior written confirmation has been given by one of the instructors.* Assignments will be weighed according to this scheme:

Participation	10%
Data Show-and-Tell	15%
Research Paper Outline	5%
Preliminary Analysis Draft	15%
Research Paper	35%
Presentation	20%

Please double-space all written work and use a 12-pt. font. You should also follow APA guidelines. Unfortunately we cannot accept email attachments or faxes unless prior arrangements have been made with the instructors.

SCHEDULE OF ACTIVITIES, MILESTONES & READINGS

Week 1, 3/27 **Hitting the ground running on your analysis**

In this first session of the second quarter we will:

- Outline the major components and expectations for the second quarter of this course sequence.
- Talk about the status of your design research projects.
- Discuss how to proceed with your analysis.

Week 2, 4/3 **Qualitative analysis of social settings…**

REQUIRED READINGS

Hammersley, M., & Atkinson, P. (1995). The Process of Analysis (Chapter 8). In *Ethnography: Principles in Practice* (pp. 205-238). London: Routledge.

Lofland, J., & Lofland, L. H. (1995). Developing Analysis (Chapter 9). In *Analyzing Social Settings: A Guide to Qualitative Observation and Analysis* (pp. 181-203). New York: Wadsworth.

ASSIGNMENTS & MILESTONES

Study groups meet to update each other on each project.

Week 3, 4/10 **Analysis of discourse and interaction (NO CLASS—AERA)**

REQUIRED READINGS

Cazden, C. B. (1988). Variations in Lesson Structure (Chapter 4). In *Classroom Discourse: The Language of Teaching and Learning* (pp. 53-79). Portsmouth, NH: Heinemann.

Pomerantz, A., & Fehr, B. J. (1997). Conversation Analysis: An Approach to the Study of Social Action as Sense Making Practices. In T. A. van Dijk (Ed.), *Discourse as Social Interaction* (pp. 64-91). London: Sage Publications.

Week 4, 4/17 **Theory-ladenness of analysis & Academic Writing (NO CLASS—NARST)**

REQUIRED READINGS

Ochs, E. (1979). Transcription as Theory (Chapter 3); References. In E. Ochs & B. B. Schieffelin (Eds.), *Developmental Pragmatics* (pp. 43-72; 415-429). New York: Academic Press.

Becker, H. S. (1986). Editing by Ear (Chapter 4). In *Writing for Social Scientists: How to Start and Finish Your Thesis, Book, or Article* (pp. 68-89). Chicago: The University of Chicago Press.

ASSIGNMENTS & MILESTONES

Study groups meet to discuss research paper outlines.

Week 5, 4/24	**Quantitative Analysis of Learning Talk**

REQUIRED READINGS

Chi, M. (1997). Quantifying qualitative analyses of verbal data: A practical guide. *The Journal of the Learning Sciences*, *6*(3), 271-315.

TBD piece on written cognitive assessments (or in-class exercise).

ASSIGNMENTS & MILESTONES

Research paper outline due in class.

Week 6, 5/1	**Prototypical developmental psychology analysis & Philosophy of Design Experimentation**

REQUIRED READINGS

Penner, D. E., Lehrer, R., & Schauble, L. (1998). From physical models to biomechanics: A design-based modeling approach. *The Journal of the Learning Sciences, 7*(3 & 4), 429-449.

Phillips, D. C., & Dolle, J. R. (2006). From Plato to Brown and Beyond: Theory, Practice, and the Promise of Design Experiments. In L. Verschaffel, F. Dochy, M. Boekaerts & S. Vosniadou (Eds.), Instructional Psychology: Past, Present, and Future Trends: Sixteen Essays in Honour of Erik De Corte (pp. 277-292). Amsterdam: Elsevier.

Week 7, 5/8	**Prototypical cognitive science analysis**

REQUIRED READINGS

White, B. Y., & Frederiksen, J. R. Technological tools and instructional approaches for making scientific inquiry accessible to all.

ASSIGNMENTS & MILESTONES

Study groups meet to discuss preliminary analysis drafts.

Week 8, 5/15	**Prototypical multi-method sociocognitive analysis**

REQUIRED READINGS

Bell, P. (2004). Promoting students' argument construction and collaborative debate in the science classroom. In M. C. Linn, E. A. Davis & P. Bell (Eds.), *Internet environments for science education* (pp. 115-143). Mahwah, NJ: Erlbaum. Plus excerpts.

ASSIGNMENTS & MILESTONES

Preliminary analysis draft due in class

Week 9, 5/22	**Prototypical cognitive anthropology analysis**

REQUIRED READINGS

Stevens, R. (2000). Divisions of Labor in School and in the Workplace: Comparing Computer and Paper-Supported Activities across Settings. *The Journal of the Learning Sciences*, *9*(4), 373-401. Plus peer responses and author reaction.

Week 10, 5/29 **Prototypical cultural psychology analysis**

REQUIRED READINGS

Cole, M. (1996). A multilevel methodology for cultural psychology, *Cultural psychology: A once and future discipline* (pp. 286-325). Cambridge, MA: Belknap Press.

ASSIGNMENTS & MILESTONES

Research paper due by June 1st (see details above under "Assignments")

Week 11, 6/5 **Interactive Poster Session & Celebration (EXAM WEEK)**

ASSIGNMENTS & MILESTONES

Interactive poster / presentation session will take place during class. We will invite visitors from across campus so they can learn about your research.

Administrative Notes about Teaching at the University of Washington

If you have any concerns about the course or your instructor, please see the instructor about these concerns as soon as possible. If you are not comfortable talking with the instructor or not satisfied with the response that you receive, you may contact Prof. Mark Windschitl (Chair of C&I), 543-6636, mwind@u.washington.edu.

If you are still not satisfied with the response that you receive, you may contact Prof. Tom Stritikus, 221-4791, tstrit@u.washington.edu. For your reference these procedures are posted on the bulletin board just outside Student Services, 206 Miller.

If you would like to request academic accommodations due to a disability, please contact Disabled Student Services, 448 Schmitz, (206) 543-8924 (V/TTY). If you have a letter from Disabled Student Services indicating you have a disability that requires academic accommodations, please present the letter to the Area Secretary to discuss the accommodation you might need for class.