MTE 682: Developing Research Skills, Pt. 2
Course Overview

Professor: Dr. Chandra H. Orrill
Meeting: Tuesdays 4:00 - 6:30pm, Fairhaven Rm 154
Contact: corrill@umassd.edu
Office Hours: Monday 2:00 - 3:30 (Fairhaven)
            Tuesday 2:00 - 3:30 (Fairhaven)
            By email or by appointment in Fairhaven or Fall River

General Abstract: This course synthesizes prior coursework to focus on methods and research questions in preparation for students' dissertation. Students will develop essential experience/skills in designing research, reading research critically, writing scholarly work, and developing proposals for research funding. Students will give oral presentations on their research topics and plan of study for peer review.

Spring 2011 Focus: Data Analysis. We will work through three modules each focused on analyzing data and writing about our findings. We will run the course like a research team in that we will meet to discuss our activity and assign new activity in ways that make sense for the module at that point. Because of the organic nature of this design, readings and assignment due dates will be negotiated as we progress through the semester. Each module will last approximately 4 weeks. We will start with video analysis using a pre-existing rubric; we will then do analysis of clinical interviews using emergent coding. The third module will be negotiated by the class members.

Learning Objectives:
• Become familiar, through hands-on experience, with data analysis techniques.
• Learn to use data to make and support assertions about topics in mathematics education.
• Learn how to write about research results.

Required Textbooks
Required readings assigned as appropriate. These will include pieces on data analysis as well as background information necessary to engage in analysis of the datasets.

Evaluation
In-Class Participation (including “homework”): 55%
Writing assignment for Module 1: 15%
Writing Assignment for Module 2: 15%
Writing Assignment for Module 3: 15%
General Information:
• All written work must conform to APA 6th edition format.
• Attendance is expected. Failure to attend will impact your participation score, but will also impair your ability to complete other course assignments in a satisfactory way. If you need to be absent for any reason, please notify me in advance.
• You are expected to abide by the Academic Integrity policy of UMass Dartmouth. It can be read in its entirety here: http://www.umassd.edu/studenthandbook/academicregs/ethicalstandards.cfm. It includes discussion of the university’s policy on academic dishonesty, including plagiarism.
• Please see Center for Access and Success regarding information about available academic support services, including services for learning and physically disabled students.
• Incompletes will only be issued only for extenuating circumstances. If you feel that you are unable to complete work on time, please discuss that with me in advance so we can negotiate an appropriate alternative.
• All assignments should be emailed to me unless otherwise specified in class. This will allow me to provide you with faster, easier to read, and more complete feedback than paper documents allow.

Course Calendar Overview
1/25/11 Introduction & Getting Started
2/8/11 Module 1
2/7/11 Module 1
2/15/11 Module 1
2/22/11 No Class – Monday Schedule
3/1/11 Module 1
3/8/11 Module 2

Module 1 Writing Assignment Due
3/15/11 No Class – Spring Break
3/22/11 Module 2
3/29/11 Module 2
4/5/11 Module 2
4/12/11 No Class – WORK DAY (AERA)
4/19/11 Module 3

Module 2 Writing Assignment Due
4/26/11 Module 3
5/2/11 Module 3
5/9/11 Module 3
5/14/11 Module 3 Writing Assignment Due
Module 1 Description

In module 1, we will engage with SimCal data around the sack race task. In the quantitative analysis of the impact of SimCalc some classes seem to really benefit from the use of the curricula while other classes do not. Because the quantitative data cannot provide much insight into what is different about these classes, we are going to consider the teacher moves as they relate to what the students might be learning. To this end, we will use the framework developed from SimCalc design principles as a lens to analyze classroom practices.

Topics we will discuss:
- Research ethics
- Creating & using a framework for analysis
- Inter-rater reliability
- Video analysis techniques and considerations
- Using software for data analysis

Readings:
- SimCalc Analysis Framework and Definitions
- AERA Ethical Standards
- APA Ethical Standards (http://www.apa.org/ethics/code/index.aspx)
- Other readings as appropriate

Writing Assignment (tentatively due 3/8/11)
- develop a findings section that addresses at least 5 assertions about the implications of teacher practice on student learning in the SimCalc classrooms. Each assertion should be appropriately supported by data.