**RESEARCH METHODS FOR THE LEARNING SCIENCES, 2010 TERM C**

**INSTRUCTOR: RYAN S.J.d. BAKER**

**ASSIGNMENT ONE**

**QFO/TEXT REPLAYS**

**HANDED OUT:** Friday, January 22

**DUE:** Friday, January 29, 11:59am by email to instructor  
(if your submission is over 10.0MB, please email me a web link)  
(physical artifacts such as field notes can be scanned or can be handed in, in person, before class)

In this assignment, you will conduct either quantitative field observations or text replays. You can carry out this assignment either in pairs, or individually. If you carry out the assignment in a pair, you are welcome to hand in your assignment together, or to do separate write-ups.

**STEP ONE:** Choose your study method: quantitative field observations or text replays.

**STEP TWO:** Choose your data source:

1. **Text Replays, Cognitive Tutor Algebra data.** By noon Saturday and very likely earlier, I will have made text replay software available on my website (I’ll email the class), with a data set from Cognitive Tutor Algebra. Instructions for running the software and obtaining data will be made available in conjunction with the software.
2. **Text Replays, your own data.** A second option would be to run text replays on your own data. In this case, it will be your own responsibility to format your data in the right format to use with the text replay software. I will be glad to provide tech support, but cannot offer instantaneous response time ☺.
3. **Field Observations, ASSISTments class.** If you are a PIMSE Fellow, or have other access to classes using ASSISTments, you are welcome to conduct observations in this setting (so long as the teacher gives permission).
4. **Field Observations, WPI class.** If you TA a class at WPI, and/or have the instructor’s permission, you are welcome to conduct observations in this setting.
5. **Other.** Email me ASAP.

**STEP THREE:** Choose your coding scheme:

1. **Use Existing Coding Scheme.** The papers from last Wednesday’s class were chosen in part due to clearly defined and articulated coding schemes. (not including Stigler & Hiebert, who have such a scheme but do not detail it in this paper). These schemes are all recommended for use.
2. **Use Another Existing Scheme.** Email me ASAP.
3. **Make Up Your Own Scheme.** Exploratory logins will be provided in the text replay software, and you can always conduct extra observation if you do field observations, in order to create a coding scheme.

**STEP FOUR:** Choose observation protocol. Options will be given in the text replay software; there will be a wider range of possibilities if you do field observations.

**STEP FIVE:** Code some data! Code for at least 30 minutes in the field, or for at least 2 hours with text replays.

**STEP SIX:** Conduct one analysis of your data, according to the discussion in class. Statistical analysis is welcome, but not required for credit.

1. **Inter-rater reliability** (requires partner)
2. **Prevalence of Behavior Categories**
3. **Correlation to Other Constructs** (not recommended due to time constraints)
4. **Dynamics Model** (not recommended; needs a lot of data)
5. **Other** (email me ASAP)

**Writeup:** Please submit a writeup where you explain and justify what you did for each of the six steps of the assignment, and where you explain and give the results of your analysis for step six. Also briefly discuss the meaning and/or implications of the results of your analysis. Give sufficient detail that a colleague could reasonably hope to replicate your method, but write in an academic manner. Also submit raw data (output files from text replay software, scans of your field observation notes, etc.), and any computer files which include processed data (excel files, .txt files, .csv files, etc.).

**Grading Rubric:** Hand-ins will be graded on the basis of:

1. Valid method/protocol for data collection
2. Quality of justification of data collection method/protocol
3. Quality of justification of coding scheme
4. Sufficient data coded
5. Legible raw data
6. Quality of explanation of analysis, and meaning of result
7. Organization/quality of writing