Performing a (mini) rational Cognitive Task Analysis on your own research question  
Assignment for Research Methods in the Learning Sciences

1. Rational CTA of your chosen task

Start with the your post about applying CTA to your own research and select a task to focus on – either a task you specified in the post or a different one.  Remember that CTA is “a set of methods and techniques that specify the cognitive structures and processes associated with task performance”. That is, “the focal point is the underlying cognitive processes, rather than observable behaviors”. The main question of your research may not be about cognitive processes, but find an aspect of your research where a question about cognitive processes as relevant and pick a related task.

Do a rational cognitive task analysis (CTA) of that task as follows:

1. STEPS: Specify the steps in a correct/desirable solution to that task.    
   These steps are the physical, written, or spoken actions that a person might produce while performing the task.  If actions are not naturally produced as part of doing your task, specify what a person might verbalize (corresponding to intermediate states of working memory) while performing a talk aloud (or think aloud -- but not explaining).
2. RULES: For each step, specify a hypothesized cognitive process (e.g., a decision rule) that a person's mind must perform to produce each step.    
   Pay special attention to what cues or conditions are needed to produce correct steps. If the solution to your task has many steps (e.g., > 5), you can specify rules for just a subset of steps – focus on the important ones.

2. Rational CTA of a task variation or alternate solution

Pick one of the following to do:

2a. Related task  
Develop or select a second task that is an interesting variation on the first task.   The second task may make the first task easier (or harder) by eliminating (or adding) a knowledge demand or by adding (or removing) an alternative strategy.  Do a rational CTA of this second task by repeating (a) and (b) for this task.  
  
2b. Alternate solution  
Come up with a different solution to this first task, it might be a incorrect solution that a novice might generate or a quite different strategy for solving the same task.   Repeat (a) and (b) for this solution.

3. Write a few sentences to describe the differences in cognitive processes involved in two analyses you performed in 1 and 2.