Cal Poly Quantitative Reasoning Learning Community 2015-16

February 17, 2016

10:10 am to 11:00 am (1-301)

Membership

Jack Phelan/Acad Prog; Todd Grundmeir (Math); Bruno Giberti/Architecture; CAED; Fred DiPiero/CENG; Russ White/Library

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1. Review meeting notes from [Feb 3, 2016 (PDF)](#)
   a. Meeting notes approved
2. Discussion of rubric criteria
   a. *Jack: Efforts on symposium on QR*.
   b. Bruno: Broadening the dimension (criteria) of representation
      i. Definition of representation is changing; Definition of communication or expression of data is not clear. Rather not focus on analysis, students should be able to choose and apply appropriate tools.
      ii. We do not need to assess writing or oral communication. There are separate rubrics and assessments for that.
   c. We still do not have satisfactory definition for problem solving.
      i. Problem solving definition: problem solving is an integrative learning method, which require choosing appropriate tools and integrate and apply them to create a persuasive solution.
   d. Data analysis and representation can be co-related.
   e. Mary: Everyone should come up with specific short concept and generate keywords for each dimension. Jack and Mary will go through these to shape the next draft of traits .
   f. Bruno: We can consider creating separate threads. Some of the threads can be: calculation, use of the correct tool, analysis, expression, data organization, effective visualization, all are separate threads under different sections.
   g. Analysis is a component of calculation, how to describe calculation, use of adjectives and verbs, assumption, but is also a thread under argumentation.
   h. Russ: Knowing to choose what form of tool is the difficult part in analysis.
   i. Mary: An effective way might be to come up with a sequence, like, 1. selecting the correct tool, 2. Calculation, and 3. drawing inferences….
   j. Linear diagram might not work. The threads might be correlated to other sections or categories.
   k. Goal: Conceptual question (Bruno): In our mind, a body of design or research, that produces evidence and how a person reacts to that body of information?
   l. Framework (Mary): Example from CLA+ sample QR exam question is a reasonable perfect example, very helpful.
   m. Lots of data can be provided, with graphs, research reports, charts and other visual representations, what are the right tools that a student should select? How the students are using those vast amount of data that should be the subject of assessment. Not how

they are generating the data. Gary's assignment in Psychology is an example where students are not generating the data but are responding to the article.

n. (Bruno) Problem solving: Not excluding interpretation from analysis. Investigating numerical evidence, selecting the appropriate tool to investigate numerical evidence can be a better way of wording.

o. Analysis and argumentation could/should be together.
    i. Argumentation is more close to critical thinking. E.g. how to use the tools?
    ii. (Mary) Students may use all the right tools, analysis can be good, but lead to wrong calculation.

p. An appropriate sequence can be:
    i. **Understanding the problem,**
    ii. **Making assumptions,**
    iii. **Choosing the correct tools,**
    iv. **Application of appropriate tools,**
    v. **Calculate, interpret, organize data,**
    vi. **Consider other possibilities,**
    vii. **Persuasive and effective communication (oral or written)**
    viii. **Acknowledging limitations,**
    ix. **Sequence of conclusions.**

q. (Mary) We won't be critiquing the students on what conclusion they have come up with. The question is, what we are looking at, based on presentation, it is the process how they have come to the conclusion that should be the subject of assessment.

r. We missed March 9, next week is the last meeting, and one more meeting will be helpful so we will look at scheduling an end of quarter meeting.