CAL POLY

Quantitative Reasoning Learning Community

Friday November, 16, 2018

12:10-1:00 p.m.

Attendees: Jack Phelan, Bruno Giberti, Jianbiao Pan, Yi-Wen Chiu, Gita Kolluru, Paul Choboter

Excused: Michael Latner

ANNOUNCEMENTS

1. Jack's Retirement
2. QRLC Plans and Recruitment Efforts

JACK: Before we dive into the projects, let me know if there are any modifications to the notes from the last meeting.

I also want to make an announcement that I am retiring at the end of this month. We want to talk about transitioning and where we go from here. Bruno Giberti, Associate Vice Provost for Academic Programs and Planning, will help keep momentum going for this group; he was part of the original QR group and has worked to one degree or another with all of the core competencies.

Compared to where the original QR was, we are in such good shape. We already have our working definition and rubric, which initially took 18 months to complete. That extra time gives us the opportunity to focus on assignment design.

Bruno: It's also the Part B of our QR assessment. The first round that Jack refers to only assessed lower division. This assessment of upper division will give us some indicator, even if it is rough, as to how students are progressing.

One of the things we've learned through this experience is how this exercise has encouraged faculty to look at assignments and improve them. That step is, at times, even more important than the final result. With the initial work with the learning communities, we've developed rubrics and ended up assessing assignments that were designed with the rubric in mind. Talking about assignment design at this opportunity is a good and important thing we're doing.

Jack: It seems people are amenable to change the assignment to modify as needed. We should talk about goals for next quarter and start to look at when these courses are available. We should still look to get representatives from CAED and OCOB.

Bruno: In terms of the leadership for this group, I will step in to facilitate these conversations. We'll be recruiting for a new Assessment Director. It isn't necessary that I take that role to chair this group, but

we can entertain that possibility, too. In the meantime, there's a lot of progress from last round and a lot of momentum that I will help to keep going.

Jack: We should discuss whom we might reach out to in the other colleges so that we can have examples from each college. We should also discuss plans on how we will start sharing the rubric so faculty have enough time to work on assignment design.

Discussion of QR Assessment

1. Nature of the Assessment (understanding numerical evidence vs. producing original numerical evidence)

Bruno: Quantitative Reasoning has at least two applications: the ability to understand arguments based on numerical evidence from other people (such as, can a student critically read the chart) and the ability to make those arguments themselves. The lower division assessment focused on the former (the ability to understand and critique). At the upper division level, we'd expect them to be making that argument through their own work. Is that accurate in terms of how we are planning the next assessment?

Jack: I think that is fair that they are presenting their arguments numerically.

QR Assignment Design

1. Exploration of proposed assignments for QR assessment

Gita: Our students start doing that dual-level of argumentation at the sophomore level, so we should be able to collect examples easily from the senior level. However, our seniors don't have a capstone class. Instead their final project is making a proposal; they do not produce original data. The class that I proposed, they have to do both.

Paul: The example I supplied is an upper division capstone course. They had a term project on mathematical modeling to describe a situation. I asked them to come up with a research question. The assignment was designed without a step to evaluate others' arguments. The students put so much effort to describe a model but actually addressing the research question with the model was missing.

Jianbiao: When students present their project, I ask the class to evaluate each team's project. They evaluate the project based on a rubric.

Paul: How do you assess their evaluations? Assessment and evaluation isn't a natural discipline for them to practice within this class. I could do a rubric to help them practice their skill. The main focus wasn't evaluating but coming up with their own quantitative argument. This skill seems to be the hardest for them to do.

Jack: It seems that all four of the primary traits seem to be there in the rubric except for the synthesis. I'm wondering if we're missing a synthesis trait and should we add it?

Jianbiao: I'd collect all of the feedback from the students' peer evaluations, filter it, and share it with the team on the class's behalf. The feedback could be about their presentation skills or the content of their argument. I can't give comprehensive feedback to each team, but I combined the work and shared with the team. I hope that feedback would help them to improve their presentation or reasoning skills.

Paul: In my class, that's the missing piece. I could give them an itemized rubric going forward to show them that they are being graded on this skill.

GOALS FOR WINTER 2019

1. Faculty Recruitment and Artifact Collection Plans
2. How to Close the Loop after the Assessment Is Complete

Bruno: I'd like some discussion about the goals for next quarter. I can talk with Jack but also know where the group thinks it is going. I know we need to try and get fuller participation by other colleges. That's my goal. In a longer term over the next two quarters, we have to discuss what the assessment might take and what our plan would be. Where do all think you are?

Gita: What specifically is this group charged to do?

Jack: We need to collect artifacts and make them available for objective evaluation.

Bruno: We're also trying to make partnerships with departments to gauge student performance. When departments participate in this exercise, it becomes their assessment project for the year. It would happen as a team with facilitation with the assessment director. The Learning Community becomes the pipeline between the university and department to build that partnership.

Jack: The group needs to consider assignment design and start planning any necessary modifications.

Bruno: Participating in these assessment projects is a way to promote faculty development. We spent a lot of time designing rubrics. This group has an express lane because the idea of the competency assessment project and rubric design has resonated already. There still may be disciplinary translation to have with students.

Gita: Do we have to encourage other members in our department to understand this rubric and work on assignment design?

Bruno: We've tried to publicize the results and bring external visitors to campus to try and close the loop. We should continue to have discussions as to what that would look for quantitative reasoning. We'd talked about making visits with departments. One way would be to bring results to the

department and have that conversation with the faculty. However much of the rubric and this assessment process that you want to bring in advance, especially if they are a faculty member teaching a different section of the class that we are assessing for this project, the better.

Jack: WASC said that they've set the bar at 50-60 student examples per competency assessment, with the idea that a university might not learn more beyond that sample size. We're looking at convenience. What's you're class size?

Gita: There are 48 students total, but for this project, they work in groups of 3.

Paul: Mine is very similar: It's a class of 25, but this project occurs in groups of 3. This course only has one section and is taught in the Fall Quarter.

Next Steps

Bruno: What has this group determined about logistics?

Jack: So far, we've been talking about the competency and rubric.

Bruno: Has the group considered what the assessment might look like or considered other quantitative reasoning results from NSSE or CLA?

Jack: Not yet, but we talked about the possibility of triangulating the results.

Bruno: We could start looking at the results next quarter. The Chancellor's Office originally required all CSU campuses to complete the CLA. It's an interesting model that we can talk about later. We test 100 students and looks at entering SAT/ACT scores and what their performance is like at the senior-level. It looks at other skills besides quantitative reasoning, too, like written communication and critical thinking. The last time we did a QR assessment, we were able to roughly triangulate our campus-based assessment with this exam and NSSE.

Gita: How were the students chosen?

Bruno: The people who run the CLA say that it isn't necessary to have a representative sample. Since every student is being statistically evaluated individually, you don't need to have x number of students from each college.

Gita: Why did they go?

Bruno: We did give the students some incentives. There was also one department that wanted all of its students to participate, but those results were separated from the rest of the group.

Jack: I don't know that we could do incentives now with the new rules. We might be able to give University Store gift cards or organize a lottery. There was a badge that students could add to their LinkedIn profile that helped market their ranking.

Gita: Since the students can choose to participate on their own, wouldn't it seem more likely that the students who would participate would come from a certain set of high achieving standards? Wouldn't that skew the results?

Bruno: Quite possibly, but it is hard for us to control that. Have we talked about assignments in depth?

Jack: Not yet.

Bruno: OK. That is a big task for next quarter. We could have two members present their project at a meeting and give everyone the opportunity to make observations and see how it might connect with the assessment rubric. There's something to be learned from that interdisciplinary perspective.

Jack: We also need to look at when the course is being offered, and if we can actually discuss the logistics of running an assessment.

Paul: When are we collecting data?

Bruno: I would think that we would plan to collect artifacts Spring 2020.

ACTION ITEMS	TIMELINE
1. Review Assignment Proposals	Winter Quarter 2019
2. Look at NSSE and CLA results	Winter/Spring Quarter 2019
3. Review literature related to quantitative reasoning assessment (generally and within the discipline)	Winter/Spring Quarter 2019
4. Continue recruiting from across colleges and potentially other classes.	ongoing