

Annual Reassessment 2018-2019

The purpose of SAC-level assessment at PCC is to identify the levels of student achievement of course- or program-level outcomes in the name of improving those levels of achievement. The second part of that process is the reassessment of an outcome that has been assessed in a previous year.

In an initial assessment of an outcome, a SAC should identify any areas of student achievement of an outcome that could be improved. The SAC should then target those areas with a teaching strategy appropriate to its discipline during the reassessment year. The reassessment of the outcome then determines if the strategy was effective by measuring any changes to student achievement.

This process, of assessing, analyzing, creating a teaching strategy, and reassessing, is called "closing the loop." It is how assessment can be useful for instructors and, by extension, for students.

On completing the form, please e-mail it to learningassessment@pcc.edu.

Note that questions marked with an asterisk* indicate that the accompanying help document includes information relevant to that question.

The planning section that follows is to be completed and submitted Fall Term. If your SAC is unable to complete it in fall, please fill out the planning section when completing the final report in spring.*

Planning Section: To be completed and submitted in Fall Term

SAC Assessment Contact:

<i>Name</i>	<i>e-mail</i>
Andy Hilt	andrew.hilt@pcc.edu

1. What SAC do you represent?

Geology & General Science

2. What outcome(s) do you plan to reassess?

Quantitative Literacy/Reasoning – We would like to modify our original assessment instrument to align it with the recently developed Sci/CS/M DSAC rubric for Gen Ed outcomes. We have requested that members of our SAC develop an assessment instrument that aligns with the DSAC rubric.

3a. What were the results of the outcome’s initial assessment (in a past year)?

The results of last year’s G/GS assessment were not favorable as shown in the table below. Our students on average scored below the expected “level 2” outcome on the Multi-state collaborative Quantitative Literacy rubric for every category. These results are based on our own “SAC’s” scoring process. We are not yet aware of the scoring results completed by the college sanctioned GenEd assessment team. We have been informed that these results are still headed our way.

Interpretati on	Representati on	Calculatio ns	Application/Analy sis	Assumptio ns	Communicati on
1.47	1.91	1.94	1.18	0.85	1.01

3b. What area(s) of outcome achievement did the initial assessment identify that might benefit from additional focus by the SAC?

All six dimensions could benefit from additional focus according to our results, but first and foremost, we as a SAC do feel that our assessment instrument is in need of serious modification and improvement.

We learned much from this process, and will make modifications to the assessment instrument to make the assessment clearer for the students and more efficient for our analysis of the results. Some important things that we learned include: the need to make it relevant for our students, establishing a set time limit, aligning it more closely to the rubric, clarifying specific questions, and shortening it as well. All of these issues will be addressed as we attempt to improve the assessment instrument for this winter’s “2018-2019” assessment. We have multiple instructors interested in developing a useful and efficient instrument, and therefore hope to have multiple options heading into this year’s assessment project.

4. What changes to teaching might the SAC explore this year to address the areas in need of additional focus?

If the results of our initial implementation of this assessment instrument are useful, then as a SAC we should certainly consider adding more quantitative literacy practice in our assignments. Students could be asked to perform more calculations, graphing, plotting, etc. to improve their quantitative reasoning skills, and boost their scores in the future.

5. What course(s) will your assessment focus on?

For now, we will continue to assess the same courses as last year, but based on SAC discussions, plan to modify the assessment instrument before we change the courses to be assessed. Several SAC members are planning on developing potential SAC level assessment instruments which will be compiled into a SAC-wide data base for all members to evaluate and potentially utilize for this year's assessment. Our eventual goal is to have each instructor within our SAC participate in the annual assessment project utilizing an instrument that they feel will benefit them and their students most effectively.

6. How will you sample student work?*

We are hoping to piggy back off of the Gen Ed assessment project and sample all student work that correlates. We plan to randomly collect artifacts from each instructor based on the Gen Ed assessment calculation model.

7. Will the student work be part of the regular graded assignments for the course(s)?*

This is one of the biggest changes to last year's assessment process for the G/GS SAC. We did not mandate that any of our participating instructors require usage of or grade this assignment in their courses. We feel that there should be some incentive for students to try their best and therefore will require the activity to be graded and counted towards student achievement in the specified courses. For now, the percentage that this assignment impacts a student's grade will vary from instructor to instructor and will be left up to their discretion.

8. How will you redact student work (i.e. make it anonymous)?*

If we can piggy back off of the Gen Ed assessment project, then we are hoping to have our artifacts redacted by the Gen Ed assessment team. This seems like a significant time-saving opportunity that we would like to take advantage of in the future. For this coming year, we will ask that each instructor redact each of the requested artifacts before they submit them to us anonymously.

9. Will your project be a direct or indirect assessment of student work? (Include an explanation if relevant.)*

It will be a direct assessment of students work. Student's will respond to a series of prompts and answer follow-up questions. Instructors can grade the artifacts as they see desired, but will need to scan/photocopy/save ungraded work to be collected at a later date. Once the approved redacted artifacts are collected, the SAC can score the artifacts according to the recently developed Sci/CS/M DSAC rubric.

10. In what term(s) will you collect student work?*

We will collect the number of artifacts expected to fulfill the Gen ED assessment criteria as specified by the Gen Ed assessment team during the winter term.

11. In general terms, describe the reassessment project for the year. What steps will you take in carrying out the project?

- 1) Modify assessment instrument, and or collect newly developed assessment instruments from SAC members.
- 2) Allow all SAC members to choose an instrument they desire.
- 3) Implement assessment in all pertinent courses during the winter term.
- 4) Obtain a list of selected artifacts for scoring from the Gen Ed assessment team.
- 5) Request redacted artifacts from our faculty based on Gen Ed assessment selections.
- 6) Collect specified anonymous & redacted artifacts electronically for the SAC.
- 7) Assemble a SAC scoring team.
- 8) Conduct a norming session if new members join the scoring team since last year.
- 9) Assign random anonymous artifacts to members of the scoring team making sure to double up on all artifacts for inter-rater reliability.
- 10) Compile scores to determine the SAC's averages for each dimension.
- 11) Provide instructor scores to each participating member for comparative analysis.
- 12) Analyze the results and determine if more changes are needed to the assessment instrument.
- 13) Analyze possible changes in course level instruction based on results.

12a. What are the benchmarks (minimum acceptable level of student outcome achievement)?*

We plan to stick with the original level 2 benchmark as our acceptable level of student outcome achievement.

12b. What percentage or frequency of students do you hope to see achieve the benchmarks?*

I would think that we would always want to have 100% of our students reach the intended benchmark. Last year we failed to have our student's average level 2 or higher across the SAC for all six dimensions. This year we would like to see our students achieve at least an average of 2 or higher for at least three of the six dimensions.

12c. Have your benchmark levels changed based on the results of the initial assessment? If so, why?*

No, we did not achieve the level 2 benchmark last year, so it should remain our intended goal for this year.

13. Describe the tools (e.g. rubrics, checklists, standardized exams) you will use in the project to evaluate student work.

We are trying to align our assessment instrument with the Sci/CS/M Gen Ed rubric to streamline this process moving forward.

14. Describe how the SAC will ensure that the evaluation of student work is consistent (e.g. norming rubrics, verifying inter-rater reliability).*

As stated above, we will try to have the same scoring team as last year evaluate this year's artifacts. If new members join the team, we will hold a norming session at the spring SAC meeting on April 30th. We will have two separate members of our SAC score each anonymous artifact to verify inter-rater reliability.

15. Different SACs and individuals have different training in assessment. Your LAC coach is available to help with any step. What might you need help with moving forward?

We are asking for Susan's help in providing a list of specific student artifacts to be collected based on the established GenEd criteria. In the future if she is still redacting the collected artifacts, then we would appreciate her assistance in this process as well. For this coming year, we will not be asking for Susan's redactions as we are opening our LAC assessment up to the entire SAC. We would like an electronic copy of all redacted artifacts for us to score as a SAC in the future, again not for this coming year's assessment.

Please submit the completed planning section (leaving the following end-of-year report section blank) to learningassessment@pcc.edu by the November deadline.

Annual Reassessment Report 2018-2019

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If your SAC was unable to complete the planning section, above, during Fall Term, please fill that section out before completing the following end-of-year report.

16. Were any changes made to the reassessment plan submitted in Fall Term? If so, please briefly describe them.

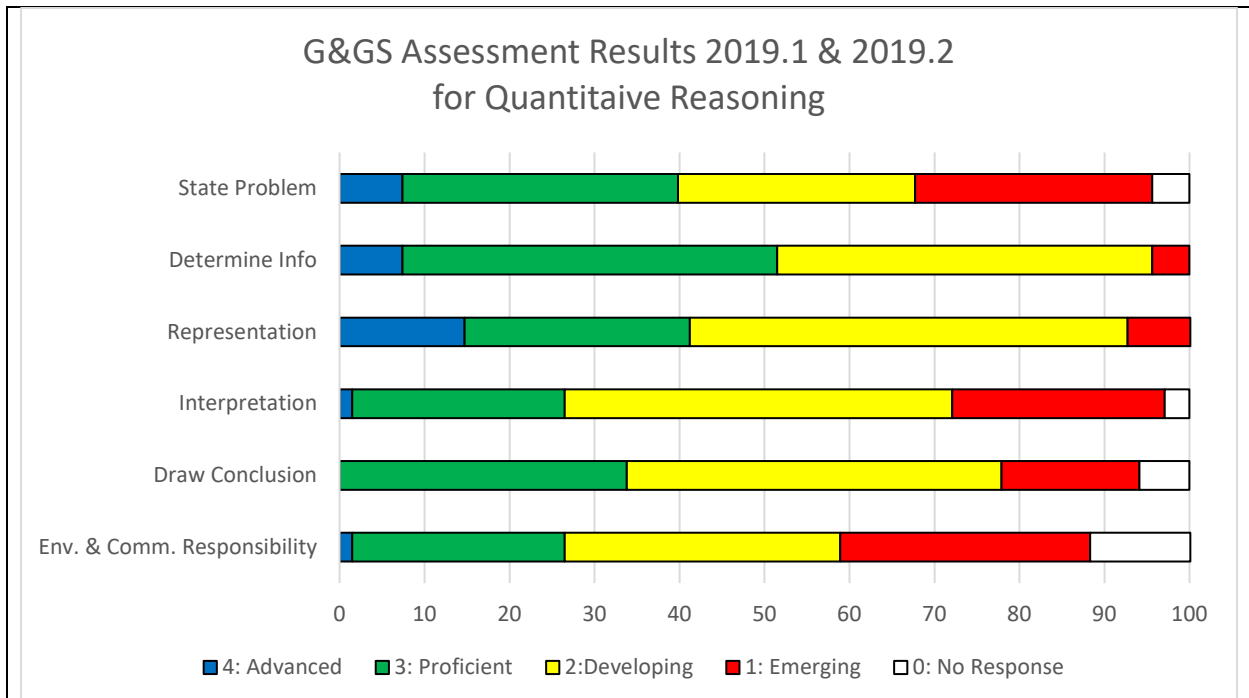
No changes were made since the fall plan was submitted.

17. Did the SAC implement a teaching strategy and/or curricular change to improve student outcome achievement? If so, describe it here. If not, what were the barriers to such a strategy's development?*

No, we revised our assessment instrument as specified in questions 5 and 7 of the submitted fall plan. Our barrier to curricular changes was that last year's inconsistent results led to the conclusion that the most important change needed for this year was modification to the assessment assignment itself as well as the methodology of implementation. The 2017-2018 assessment instrument was shortened and modified significantly leading to the development of two similar optional assignments for instructors to choose from. Instructors were offered the opportunity to use either model assignment as was provided, with modifications, or develop a completely different assignment. Improvements in the implementation of the assignments this year were significant. This year's assignment had a 1 hour time limit in class and was written to be more interpretable for the students and scorers. One additional important change made was that it was assigned as a graded laboratory

activity, test, or general assignment for all courses in which it was administered. In addition, this year we put a time restriction on the assignment of no more than 1 hour in class followed up with independent writing outside of class which was utilized by most of the participating instructors. The main reason that we did not modify instruction is that we felt last year's assignment was too inconsistently administered especially without a time limit or a specific ramification to student's grades.

18. Please provide a summary of your results; include only key data points and your overall findings regarding student learning.



Stacked bar chart illustrating assessed student achievement using the Quantitative Reasoning Rubric 1.5. The majority of assessed students achieved level 3: Proficient (green) or level 2: Developing (yellow) on each of the 6 dimensions of Quantitative Reasoning Rubric. Relatively few students achieved level 4: Advanced (blue) achievement. Note that the fraction of students meeting or exceeding the PCC benchmark of 2: Developing can be easily read off this chart: for the Stating the Problem dimension about 68% of assessed students met or exceeded the benchmark level, for the Determining Info dimension about 95% of the assessed students met or exceeded the benchmark level. All assessment artifacts were double scored, in cases of inter-rater disagreement the average of the two scores was used for this plot (e.g. if a dimension was marked as a 4 by one rater and as a 3 by a second rater the average of the two ratings (3.5) was used for this plot which would plot as level 3:Proficient-green), this approach leads to a conservative assessment of student achievement.

19a. What were the benchmark levels (minimum acceptable level of student achievement of the outcome) for the project?*

We chose to keep our benchmark levels equal to the GenEd (Sci, CS, and Math) DSAC criteria of benchmark level 2 for each of the six dimensions on the DSAC rubric.

19b. What percentage or frequency of students achieved the benchmark levels?*

Our results are shown in the following table. Overall our results show 61.4% - 95.7% of our students exceeded benchmark level 2 for the six dimensions. The dimensions receiving the highest percentages were Determine Info and Representation at 95.7% and 94.3% respectively. The dimension receiving the lowest percentage was dimension 6 (Community & Environmental Implications) at 61.4%.

Dimension	State Problem	Determine Info	Representation	Interpretation	Conclusions	Community & Environmental Implications
	(1)	(2)	(3)	(4)	(5)	(6)
Number of students achieving benchmark level 2 or higher	52/70	67/70	66/70	49/70	54/70	43/70
% of students achieving benchmark level 2 or higher	74.3%	95.7%	94.3%	70.0%	77.1%	61.4%
Average score	2.22	2.80	2.70	2.12	2.27	2.01

20. Please accompany your report with the actual results of your project as an appendix (i.e. along with this report, send the project results themselves as a spreadsheet or document) if possible. If that is not possible, please explain.*

Results are attached as a spreadsheet.

21. How did changes to teaching or curriculum affect student outcome achievement?

For this year we focused specifically on changing the assessment assignment due to limitations in last year's assignment and its implementation. Now that we have established more consistent ground rules and an assessment instrument providing some consistency, baseline results with an appropriate level of confidence have just been established this year. At this point we can look at this year's results and think about possible changes to our curriculum for next year. As next year unfolds, we will have to think about our classroom teaching and possible changes to be utilized. As a team, we will need to provide helpful reminders at SAC meetings regarding modifications to curriculum that can improve student achievement in quantitative reasoning skills. When next year's results are obtained, we can then discuss the implications of curriculum changes to student outcome achievement and possibly "close the loop".

22. How was student work redacted (i.e. made anonymous)?*

A standardized cover sheet preceding each assignment packet was provided to all instructors participating in this year's assessment project. Students filled out personal information on the cover sheet which was later removed from the packet prior to the scoring process. The cover sheet along with an example of one assignment have been provided as an addendum to this report and will be attached in the final submission email message to the LAC.

23. In general terms, describe the level of SAC involvement in the project (e.g. were both PT and FT faculty involved in contributing and/or scoring artifacts? Did all instructors or a representative sample of instructors contribute student work to be evaluated?) Identify any barriers to participation within the SAC.

Normally the SAC Chair takes the lead on assessment. This year we decided to develop a new position within the G/GS full-time faculty group. We have established an "Assessment Czar" title to one full-time faculty member on a four year rotating cycle. Andy Hilt offered to take on this role for the first few years and so assumed the Assessment Czar position at the initiation of the spring term. Technically this position was not initiated until after the winter term, but due to convenience, the work had already been taken on prior to its establishment. During the fall in-service meeting both full-time and part-time instructors were invited to write signature assignments for a course that they

were scheduled to teach during the upcoming winter term. At the same time two modifications to last year's assessment assignment were shared in a google drive folder for anyone choosing to use them. Four part-time instructors submitted assignments that were completely different from the two provided. Two of these four did not align with the DSAC rubric as requested, two of the four partially aligned and were incorporated into this year's assessment results. The other two were not incorporated into this year's project. All other instructors (both full-time and part-time) participating in the assessment project utilized one of the two shared assignments after making some modifications to the initial two provided.

Prior to the winter term, 15 instructors were asked to administer the assessment project of choice in at least one section taught during the winter term. As a SAC, we agreed to give brand new instructors a pass on assessment during their first year at PCC. An extension was offered near the end of the winter term so that instructors unable to conduct a winter assessment could still participate during the first month of the spring term. By April 29th, twelve of the fifteen instructors had submitted student artifacts for at least one section taught during the winter or spring term, artifacts from two instructors were not used due to lack of alignment with the DSAC rubric.

At the spring in-service meeting, we held a norming session of three artifacts provided by students from Andy Hilt's GS107 classes during winter term. Thirteen instructors participated in the norming session after which part-timers were invited to volunteer with the scoring process. Three part-time instructors agreed to assist the four full-time instructors by scoring 20 artifacts each. These three part-time instructors were told that they would split 10 hours of pay (3.33 hours) each for their efforts. The three part time instructors [names redacted] along with the four full-timers each scored twenty of seventy documents making sure that each document was scored by two separate instructors. The results were submitted separately and the two results were compared to determine a level of inter-rater reliability of the scoring process.

There were many barriers to overcome in administering this year's assessment project. First of all, switching of SAC Chair duties left much confusion regarding who was working on what components. Second, many part-time instructors have not been satisfied with the assessment assignment, and have been very vocal about their opinions. When assignments were submitted of their personal design, some did not align with the DSAC rubric. Unfortunately efforts to better align the suggested assignments to the DSAC rubric proved to be challenging.

24. Do the results justify reassessing the outcome again or that the SAC should now move on to another outcome?*

The results clearly justify reassessing this outcome again since we just now received useful baseline data which can be used for comparison purposes during the upcoming assessment year/s.

25. Please explain how results have been shared, or will be shared, with members of your SAC.

Results are always shared at SAC meetings as we prepare for the upcoming assessment season. The SAC member assuming the newly developed position of Assessment Czar will share results with the rest of the SAC during the fall in-service. In addition, this individual will provide direction regarding assessment expectations during the 2019-2020 academic year. This position was designed to reduce the workload of the sitting SAC Chair during the upcoming years. As a SAC with four full-time members, this opportunity is available. SAC's containing only one full-time faculty member will not have the option of splitting extra duties established by PCC. The G/GS SAC feels that PCC needs to consider such limitations as new initiatives are established moving forward.

26. Please comment briefly on any changes to the reassessment process that would lead to more meaningful results.

This assessment is now one of two layers of assessment expectations along with the soon to be administered Gen ED Signature assignment placed on our faculty members. I am wondering if it would make sense to have administrative leaders and/or LAC leaders involved come in to each SAC's in-service and provide a pep-talk along with elaboration rather than rely on one SAC member to explain the importance of this process. We've got several SAC members involved at various levels, and yet we still have issues among the members of our SAC regarding assessment and buy-in of this process.

27. Based on your experience with reassessment this year, are there any areas that you might want help with from your LAC coach?

Susan has always stepped up to help us when we needed help. We would like to know that we can continue to contact her for assistance and to respond to questions that might crop up. In responding to question 26 above, maybe Susan would be a good spokesperson to come in and talk to our SAC about this process and its importance to PCC. The only issue I foresee is that SAC meetings typically involve about 50% participation on any given date. It will be tough to get the message across to everyone all at the same time. This is one additional barrier to a successful assessment project on any given year. Emails are helpful, but not always 100% effective.

28. Is there anything else you want to share with reviewers about your reassessment project that has not been captured in the form?

Regarding inter-rater reliability, we chose to have two different instructors score each artifact giving us 140 scores for 70 artifacts collected by 12 different instructors. Our results are as follows:

- 393/420 (93.6%) dimensions were scored <1 value apart. These did meet inter-rater reliability criteria.
- 27/420 (6.4%) dimensions were scored >1 value apart. These did not meet inter-rater reliability criteria.

- 50/70 (71.4%) artifacts had all of the dimensions scored <1 value apart.
- 20/70 (28.6%) artifacts had at least 1 dimension scored >1 value apart.

Seeing that 71.4% of the artifacts had no scoring issues and that 93.6% of the scored dimensions met the criteria established during our norming session, leads us to a fairly high level of confidence regarding our results and therefore conclusions that we can make revolving around this year's assessment project.

Another piece of information not included in this report is regarding the calculation of the sample size. Based on a discussion with Chris Brooks regarding sampling size, the Raosoft online sample size calculator was used to determine the number of artifacts that we would need to collect. Below is a copy of the parameters utilized and the minimum result of 58 artifacts to be scored. Because we had 7 scorers, we decided to bump up the total from 58 to 70 times 2 instructors scoring each artifact equaling 140 total artifacts to be scored by seven instructors. This gave us a final scoring goal of 20 artifacts per instructor.

Raosoft		Sample size calculator
What margin of error can you accept? 5% is a common choice	10 %	The margin of error is the amount of error that you are willing to accept. Lower margin of error requires a larger sample size.
What confidence level do you need? Typical choices are 90%, 95%, or 99%	90 %	The confidence level is the amount of confidence you would be more than the margin of error. Higher confidence level requires a larger sample size.
What is the population size? If you don't know, use 20000	360	How many people are there to choose from?
What is the response distribution? Leave this as 50%	50 %	For each question, what do you expect the distribution of responses to be? (0% to 100%)
Your recommended sample size is	58	This is the minimum recommended size of sample responds to your survey.

Please submit your report to learningassessment@pcc.edu by the June deadline.