

*Subject Area Committee Name:* RAD

*Focal Outcome Being Assessed:* Critical Thinking

*Contact Person:*

<i>Name</i>	<i>e-mail</i>
Gayle Wright Virginia Vanderford	gwright@pcc.edu vvanderf@pcc.edu

This form is for the initial assessment of a focal outcome.

- Refer to the help document for guidance in filling out this report. If this document does not address your question/concern, contact [Wayne Hooke](#) to arrange for coaching assistance.
- Please attach all rubrics/assignments/etc. to your report submissions.
- **Subject Line of Email:** Assessment Report Form (or ARF) for <your SAC name> (Example: ARF for NRS)
- **File name:** SACInitials\_ARF\_2016 (Example: NRS\_ARF\_2016)
- SACs are encouraged to share this report with their LAC coach for feedback before submitting.
- Make all submissions to [learningassessment@pcc.edu](mailto:learningassessment@pcc.edu).

**Due Dates:**

- **Planning Sections of LAC Assessment or Reassessment Reports: November 28<sup>th</sup>, 2016**
- **Completed LAC Assessment or Reassessment Reports: June 16<sup>th</sup>, 2017**

Please Verify This Before Beginning this Report:

This project is not the second stage of the assess/reassess process (if this is a follow-up, re-assessment project, use the LAC Re-assessment Report Form CTE. Available [here](#)).

### 1. Outcome Chosen for Focal Analysis

1A. How does your field interpret the outcome you are assessing?

Critical thinking during trauma procedures is evaluated in a simulation during on-campus lab. There is direct observation of all aspects of the process. This occurs in winter term of their second year and is part of a capstone course. The student's performance should be at a level appropriate for pre-entry into the workplace.

1B. If the assessment project relates to any of the following, check all that apply:

- Degree/Certificate Outcome – if yes, include here:
- PCC Core Outcome – if yes, which one: Critical Thinking and Problem Solving
- Course Outcome – if yes, which one:
- Exploratory Outcome – if yes, briefly describe:

### 2. Project Description

2A. Assessment Context

Check all the applicable items:

**Course-based assessment.**

Course names and number(s): RAD 205 Radiographic Positioning V

Type of assessment (e.g., essay, exam, speech, project, etc.): simulation with direct observation

Are there course outcomes that align with this aspect of the outcome being investigated?  Yes  No

If yes, include the course outcome(s) from the relevant CCOG(s): See Appendix

**Common/embedded assignment in all relevant course sections.** An embedded assignment is one that is already included as an element in the course as usually taught. Please attach the activity in an appendix. If the activity cannot be shared, indicate the type of assignment (e.g., essay, exam, speech, project, etc.):

**Common – but not embedded - assignment used in all relevant course sections.** Please attach the activity in an appendix. If the activity cannot be shared, indicate the type of assignment (e.g., essay, exam, speech, project, etc.):

**Practicum/Clinical work.** Please attach the activity/checklist/etc. in an appendix. If this cannot be shared, indicate the type of assessment (e.g., supervisor checklist, interview, essay, exam, speech, project, etc.):

**External certification exam.** Please attach sample questions for the relevant portions of the exam in an appendix (provided that publically revealing this information will not compromise test security). Also, briefly describe how the results of this exam are broken down in a way that leads to nuanced information about the aspect of the core outcome that is being investigated.

**SAC-created, non-course assessment.** Please attach the assessment in an appendix. If the assessment cannot be shared, indicate the type of assignment (e.g., essay, exam, speech, project, etc.):

**Portfolio.** Please attach sample instructions/activities/etc. for the relevant portions of the portfolio submission in an appendix. Briefly describe how the results of this assessment are broken down in a way that leads to nuanced information about the aspect of the core outcome that is being investigated:

**TSA.** Please attach the relevant portions of the assessment in an appendix. If the assessment cannot be shared, indicate the type of assignment (e.g., essay, exam, speech, project, etc.):

**Survey**

**Interview**

**Other.** Please attach the activity/assessment in an appendix. If the activity cannot be shared, please briefly describe it:

**Each student is assigned specific x-ray procedures on simulated trauma patients. Although they work in pairs, each student receives an individual grade based on a standard rubric. See Appendix**

In the event publicly sharing your assessment documents will compromise future assessments or uses of the assignment, do not attach the actual assignment/document. Instead, please give as much detail about the activity as possible in an appendix.

*2B. How will you score/measure/quantify student performance?*

- Rubric** (used when student performance is on a continuum - if available, attach as an appendix – if in development, attach to the completed report that is submitted in June)
- Checklist** (used when presence/absence rather than quality is being evaluated - if available, attach as an appendix – if in development, attach to the completed report that is submitted in June)
- Trend Analysis** (often used to understand the ways in which students are, and are not, meeting expectations; trend analysis can complement rubrics and checklist)
- Objective Scoring** (e.g., Scantron-scored examinations)
- Other** – briefly describe:

2C. Type of assessment (select one per column)

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> <b>Quantitative</b> | <input checked="" type="checkbox"/> <b>Direct Assessment</b> |
| <input checked="" type="checkbox"/> <b>Qualitative</b>  | <input type="checkbox"/> <b>Indirect Assessment</b>          |

If you selected 'Indirect Assessment', please share your rationale:

Qualitative Measures: projects that analyze in-depth, non-numerical data via observer impression rather than via quantitative analysis. Generally, qualitative measures are used in exploratory, pilot projects rather than in true assessments of student attainment. Note that the **use of a numerical rubric is considered quantitative analysis**, even if the artifacts under consideration are not based on quantitative calculations (e.g. an essay scored by a rubric counts as quantitative in the context of assessment).

Indirect assessments (e.g., surveys, focus groups, etc.) do not use measures of direct student work output. These types of assessments are also not able to truly document student attainment.

2D. Check any of the following that were used by your SAC to create or select the assessment/scoring criteria/instruments used in this project:

- Committee or subcommittee of the SAC collaborated in its creation
- Standardized assessment
- Collaboration with external stakeholders (e.g., advisory board, transfer institution/program)
- Theoretical Model (e.g., Bloom's Taxonomy)
- Aligned the assessment with standards from a professional body (for example, The American Psychological Association Undergraduate Guidelines, etc.)
- Aligned the benchmark with the Associate's Degree level expectations of the Degree Qualifications Profile
- Aligned the benchmark to within-discipline post-requisite course(s)
- Aligned the benchmark to out-of-discipline post-requisite course(s)

Other (briefly explain: Two instructors collaborate on scoring and lab activities.)

2E. In which quarter will student artifacts (samples of student work) be collected? If student artifacts will be collected in more than one term, check all that apply.

Fall     Winter     Spring     Other (e.g., if work is collected between terms)

2F. What student group do you want to generalize the results of your assessment to? For example, if you are assessing performance in a course, the student group you want to generalize to is 'all students taking this course.'

All second year students enrolled in RAD 205 - required course for the Program

2G. There is no single, recommended assessment strategy. Each SAC is tasked with choosing appropriate methods for their purposes. Which best describes the purpose of this project?

- To measure established outcomes and/or drive programmatic change**
- To participate in the Multi-State Collaborative for Learning Outcomes Assessment**
- Preliminary/Exploratory investigation**

If you selected 'Preliminary/Exploratory' (most often a 'pilot study'), briefly describe why you opted to do a pilot study, along with your rationale for selecting your sampling method:

2H. Which will you measure?

- the population** (all relevant students – e.g., all students enrolled in all currently-offered sections of the course)
- a sample** (a subset of students)

If you are using a sample, select all of the following that describe your sample/sampling strategy (refer to the Help Guide for assistance):

- Random Sample** (student work selected completely randomly from all relevant students)
- Systematic Sample** (student work selected through an arbitrary pattern, e.g., 'start at student 7 on the roster and then select every 5<sup>th</sup> student following'; repeating this in all relevant course sections)
- Stratified Sample** (more complex, consult with an LAC coach if you need assistance)

- Cluster Sample** (students are selected randomly from meaningful, naturally-occurring groupings (e.g., SES, placement exam scores, etc.)
- Voluntary Response Sample** (students submit their work/responses through voluntary submission – e.g., via a survey)
- Opportunity/Convenience Sample** (only a few instructors are participating in a project taught via multiple sections, so, only those instructors' students are included)

The last three options in bolded red have a high risk of introducing bias. If your SAC is using one or more of these sample/sampling strategies, please share your rationale:

*2I. Briefly describe the procedure you will use to select your sample (including a description of the procedures used to ensure student and instructor anonymity.)*

All names will be removed from the grade rolls. Scores for each section and each year will be compared and any trends will be noted. The years involved in this assessment are: 2011-2016

*2J. Follow this link to determine how many artifacts (samples of student work) you should include in your assessment: <http://www.raosoft.com/samplesize.html> (see screen shot below).*

*Start with the number of students you estimate will be enrolled in the course(s) from which you will draw the sample – that is your “population.” Enter the other numbers as indicated in the screenshot. The sample size calculator will tell you how many artifacts you need to collect. Enter that number below:*

**Sample size calculator**

What margin of error can you accept?  
5% is a common choice

What confidence level do you need?  
Typical choices are 90%, 95%, or 99%

What is the population size?  
If you don't know, use 20000

What is the response distribution?  
Leave this as 50%

Your recommended sample size is

**10** %

**90** %

**105**

**50** %

**42**

The margin of error is the amount of error that you can tolerate. If 90% of respondents answer *yes*, while 10% answer *no*, you may be able to tolerate a larger amount of error than if the respondents are split 50-50 or 45-55. Lower margin of error requires a larger sample size. **Use 10% and 90% in these boxes.**

Confidence level is the amount of uncertainty you can tolerate. Suppose that you have 20 yes-no questions in your survey. With a confidence level of 95%, you would expect that for one of the questions (1 in 20), the percentage of people who answer *yes* would be more than the margin of error away from the true answer. The true answer is the percentage you would get if you exhaustively interviewed everyone. Higher confidence level requires a larger sample size. **Enter the total number of students currently enrolled in all sections of the courses you are assessing here.**

How many people are there to choose your random sample from? The sample size doesn't matter for populations larger than 20,000.

For each question, what do you expect the results will be? If the sample is skewed highly one way or the other, the population probably is, too. If you don't know, use 50%, which gives the largest sample size. See below under **More information** if this is confusing. **Measure this many students.**

This is the minimum recommended size of your survey. If you create a sample of this many people and get responses from everyone, you're more likely to get a correct answer than you would from a large sample where only a small percentage of the sample responds to your survey.

### 3. Project Mechanics

3A. Does your project utilize a rubric for scoring?  Yes  No

If 'No', proceed to section B. If 'Yes', complete the following:

Which method of ensuring consistent scoring (inter-rater reliability) will your SAC use for this project?

**Agreement** – the percentage of raters giving each artifact the same/similar score in a norming session; ideally, that will be 75% agreement or greater.

If you are using agreement, describe your plan for plan for conducting the “norming” or “calibrating” session:

The lead faculty will complete the rubric for each student as they will be the one actively observing student performance.

**Consensus** - all raters score all artifacts and reach agreement on each score

**Consistency\*** – raters’ scores are correlated: this captures relative standing of the performance ratings - but not precise agreement. Briefly describe your plan:

**Notes:** the agreement method is the most frequently used for assessment, but the **calculation of inter-rater reliability is also among the more challenging issues** within assessment as a whole. If your SAC is unfamiliar with norming procedures, contact your assessment coach, or if you don’t know who your coach is, contact LAC Vice Chair [Chris Brooks](#) to arrange for coaching help for your SAC’s norming session.

The consistency method is not generally recommended; see the help guide for details.

*3B. Have performance benchmarks been specified?*

The fundamental measure in educational assessment is the number of students who complete the work at the expected/required level. We are calling this SAC-determined performance expectation the ‘benchmark.’

- Yes**  
 **No**

If yes, briefly describe your performance benchmarks, being as specific as possible (if needed, attach as an appendix):

All students will score 85% or higher on the trauma simulation (average of each section of the procedure)

If no, what is the purpose of this assessment? (For example, this assessment will provide information that will lead to developing benchmarks in the future; or, this assessment will lead to areas for more detailed study; etc.)

*3C. The purpose of this assessment is to have SAC-wide evaluation of student work, not to evaluate a particular instructor or student. Before evaluation, remove student-identifying information (and, when possible remove instructor-identifying information).*

**Please share your process for ensuring that all identifying information has been removed.**

All forms will have names and any identifiers removed. Faculty names will not be included.

*3D. Will you be coding your data/artifacts in order to compare student sub-groups?*  **Yes**  **No**

If yes, select one of the boxes below:



- student's total earned hours  
  previous coursework completed  
  ethnicity  
  other

Briefly describe your coding plan and rationale (and if you selected 'other', identify the sub-groups you will be coding for):

*3E. Ideally, student work is **evaluated** by both full-time and adjunct faculty, even if students being assessed are taught by only full-time and/or adjunct faculty. Further, more than one rater is needed to ensure inter-rater reliability. If you feel only one rater is feasible for your SAC, please explain why:*

Who will be assessing student work for this project? Check all that apply.

- PCC Adjunct Faculty within the program/discipline
- PCC FT Faculty within the program/discipline
- PCC Faculty outside the program/discipline
- Program Advisory Board Members
- Non-PCC Faculty
- External Supervisors
- Other: Program Director

***End of Planning Section – Complete the remainder of this report after your assessment project is complete.***

**Beginning of End-of-Year Reporting Section – complete the following sections after your assessment project is complete.**

4. Changes to the Assessment Plan

Have there been changes to your project since you submitted the planning section of this report?  Yes  No

No

If so, summarize those changes below:

5. Narrative

Broadly, what did your SAC learn from the assessment of the focal outcome under consideration this year?

The most obvious trend or area of concern was found to be in the section of the lab test that requires students to identify anatomical structures learned throughout the previous 6 terms. This section of the lab involves both image critique and anatomy identification on selected bony anatomical parts.

There can be a number of reasons for this to occur: 1). Students do feel stressed in this trauma lab and may have studied so hard on the positions and trauma protocols that they just could not remember certain structures or landmarks. 2) Critiquing images is still a challenge for students as it takes significant time to understand all of the particulars of positioning errors and anatomical variations. 3). Some imaging projections are performed infrequently in the clinical setting and this may add to their knowledge of image critiques being somewhat compromised.

What is important to note here is this: all students passed this course as the trauma lab test is only a portion of the total or overall grade. However, by knowing which student or students still need more assistance with image and anatomy analysis, the last term of the Program can address this. Also, by this

*time in the Program, many of the students have been hired at their clinical sites for on-call shifts and satisfy the requirements of an Oregon Temporary License. Students who are lacking certain skill do not get hired until after graduation. Therefore, students who do get hired demonstrate their clinical performance is on track and less stressful than a course test.*

## *6. Results of the Analysis of Assessment Project Data*

### *6A. Quantitative Summary of Sample/Population*

*How many students were enrolled in all sections of the course(s) you assessed this year? 180*

*If you did not assess in a course, report the number of students that are in the group you intend to generalize your results to.*

*How many students did you actually assess in this project?*

*Did you use a recommended sample size (see the Sample Size Calculator linked to in section 2J)?*  **Yes**

**No**

*If you did not use a recommended sample size in your assessment, briefly explain why:*

We felt it was important to use the test results of all enrolled students to obtain the best or most accurate picture of critical thinking in this section of the capstone course.

6B. Did your project utilize a rubric for scoring?  Yes  No

If 'No', proceed to section C. If 'Yes', complete the following:

How was inter-rater reliability assured? (Contact your LAC Coach if you would like help calculating this.)

- Agreement** – the percentage of raters giving each artifact the same/similar score in a norming session
- Consensus** - all raters score all artifacts and reach agreement on each score
- Consistency** – raters' scores are correlated: this captures relative standing of the performance ratings - but not precise agreement
- Inter-rater reliability was not assured.**

If you utilized agreement or consistency measures of inter-rater reliability, report the level here:

### 6C. Brief Summary of Your Results

1. If you used frequencies of benchmark achievement, report those here. For example, "46 students attained or exceeded the benchmark level in written communication and 15 did not." If necessary, provide detailed results in an appendix.

2. If you used percentages of the total to identify the degree of benchmark attainment in this project, report those here. For example, "75% of 61 students attained or exceeded the benchmark level."

Although a score of 75% reflects a passing grade the Program benchmark is set at 85% for certain content areas. For the image/film analysis section of the lab these were the results for the students who scored below the benchmark: N = 65 M = 79.4 Of the 180 students from the 6 cohorts studied these were the results: N = 180 36% scored below benchmark Range of scores:64-84%

6D. Attach a more detailed description or analysis of your results (e.g., rubric scores, trend analyses, etc.) as an appendix to this document. Appendix attached?  Yes  No

6E. Do the results of this project suggest that academic changes might be beneficial to your students (changes in curriculum, content, materials, instruction, pedagogy etc.)?  Yes  No

*If you answered 'Yes,' briefly describe the changes to improve student learning below. If you answered 'No', detail why no changes are called for.*

It is difficult to say if any changes are needed as the factors for why these students had such low scores in this section of the lab test can vary from student to student. If all students still passed this course, which they did, and also completed the Program and passed the national certification exam, is there really anything else to do that would make a significant change? The instructor of record and two lab instructors will discuss these results to determine if or what could be done differently.

*If you are planning changes, when will these changes be fully implemented?*

6F. Has all identifying information been removed from your documents? (Information includes student/instructor/supervisor names/identification numbers, names of external placement sites, etc.)  Yes  No

## 7. SAC Response to the Assessment Project Results

7A. Assessment Tools & Processes: Indicate how well each of the following worked for your assessment:

Tools (rubrics, test items, questionnaires, etc.):

very well  some small problems/limitations to fix  notable problems/limitations to fix  completely inadequate/failure

*Please comment briefly on any changes to assessment tools that would lead to more meaningful results if this assessment were to be repeated (or adapted to another outcome).*

*Processes (faculty involvement, sampling, norming, inter-rater reliability, etc.):*

very well     some small problems/limitations to fix     notable problems/limitations to fix     tools completely inadequate/failure

*Please comment briefly on any changes to assessment process that would lead to more meaningful results if this assessment were to be repeated (or adapted to another outcome):*

### 8. Follow-Up Plan

*8A. How will the changes detailed in this report be shared with all FT/PT faculty in your SAC? (select all that apply)*

- |  |   |                                   |
|--|---|-----------------------------------|
| <input type="checkbox"/> email               | <input type="checkbox"/> phone call           | <input type="checkbox"/> workshop |
| <input type="checkbox"/> campus mail         | <input type="checkbox"/> face-to-face meeting | <input type="checkbox"/> other    |
| <input type="checkbox"/> no changes to share |   |                                   |

*If 'other,' please describe briefly below.*

*8B. Is further collaboration/training required to properly implement the identified changes?  Yes  No*

*If 'Yes,' briefly detail your plan/schedule below.*

*8C. Re-assessment is a critical part of the overall assessment process. This is especially important if academic changes have been implemented. How will you assess the effectiveness of the changes you plan to make?*

- follow-up project in next year's annual report    |     on-going informal assessment

*in a future assessment project*

|  *other*

*If 'other,' please describe briefly below.*

*8D. SACs are learning how to create and manage meaningful assessments in their courses. This development may require SAC discussion to support the assessment process (e.g., awareness, buy-in, communication, etc.). Please briefly describe any successful developments within your SAC that support the quality assessment of student learning. If challenges remain, these can also be shared.*