



Considerations When Reviewing an Outcomes Assessment Plan

The Joint Review Committee on Education in Radiologic Technology (JRCERT) is well aware that there are many resources available to programs to assist them in developing and refining their outcomes assessment plans and processes. This document is not meant to be a definitive statement on outcomes assessment planning or to identify specific “requirements” for an assessment plan; rather, it is merely a compilation of considerations, gleaned from multiple sources, to assist programs in developing and refining their assessment plans.

Programs are reminded that the current **JRCERT Standards for Accredited Educational Programs (Radiography, Radiation Therapy, Magnetic Resonance, and Medical Dosimetry)** specify only that the program “*Develops an assessment plan that, at a minimum, measures the program’s student learning outcomes in relation to the following goals: clinical competence, critical thinking, professionalism, and communication skills.*” Additionally, the **STANDARDS** require that the program “*Periodically evaluates its assessment plan to assure continuous program improvement.*” As part of its assessment cycle, the program should review its assessment plan to assure that assessment measures are adequate and that the assessment process is effective in measuring student learning outcomes.

Mission Statement - The program’s mission statement should clearly define its purpose and scope and is periodically reevaluated.

- Is the program’s mission statement consistent with the focus of the institution’s mission?
- Is it easily understood?
- Does it reflect what is expected from graduates?

Goals - The current JRCERT Standards identify that programs assess, at minimum, student learning outcomes in relation to: clinical competence, critical thinking, professionalism, and communication skills. Goals should focus on student learning, not on what the program will do.

- Do we address the four required goals in our plan?
- Should we add any additional goals that we believe are important, or any required by the institution?
- Are our goals written to identify what students will be able to achieve, rather than what the program will accomplish?

Student Learning Outcomes (SLO) - If the program is achieving the outcomes supporting each goal, then it can be determined that the goal is being met. Assessment “best practices” would suggest multiple SLOs to determine whether the goal has been met— perhaps two or three SLOs per goal.

- Are we looking at sufficient learning outcomes to determine whether the goal has been met?
- SLOs should not “restate” the goal. Do any of our SLOs merely restate the goal?
- Does the SLO truly measure a part of the goal?

- Outcomes should be significant accomplishments; many class assignments may not be good SLOs. Are any of our SLO's a class assignment?
- Are the outcomes written to clearly identify the skills or traits the student is expected to acquire? The format of the student learning outcome statement should be "Students will (action verb) something." Programs are encouraged to review *Bloom's Taxonomy of Educational Objectives, Handbook I: The cognitive Domain* to assist in describing the appropriate level of student learning expected by the program.

Measurement Tools - Assessment best practices suggest the use, where appropriate, of two or more measurement tools for each SLO. Measurement from multiple perspectives can often provide a more accurate picture of student learning. Results from two tools that encompass the same timeframe should validate one another. If a competency form says that a student is applying radiation safety; however, a clinical instructor's evaluation says that the student is not utilizing appropriate radiation safety, then there is a problem.

- Do our tools validate one another so that we are comfortable that the data is accurate and reliable?
- Are we utilizing enough measurement tools to assure we are getting a valid picture how students are achieving?
- Are we using too many tools for each SLO and wasting time on collection of data?
- Are the tools being used the best tools available to measure the SLO?
- Have they provided results that we believe accurately measure the SLO?
- Should we consider different tools?
- Should we consider modifying the existing tool to improve the accuracy and validity of the results provided?
- Are we using a large enough sample size from each measurement tool to yield valid results? For example, if the program is utilizing results from an employer survey to assess critical thinking skills and only two surveys (the "n" number) were returned from a graduating class of fifteen, the data would not be sufficient to provide reliable assessment information from this tool. The fewer data points reviewed, the less confident the program may feel that the results accurately reflect how well students have learned.
- Are we identifying the "n" number, i.e., the sample size, when reporting the results?
- When reviewing the results, including sample sizes, does the program feel comfortable that sufficient data points have been included to determine how well students have learned?
- A pass/fail measurement scale will only indicate whether or not students are achieving at a minimum expectation level; the tool should tell how well they have learned. For example, if a clinical competency form is used and it is pass/fail, we only know if the students have passed. If we use a well-constructed rubric with an appropriate measurement scale to measure performance, the results can reveal how well the students have learned and applied the information.
- Assessment best practices would discourage the use of random sampling for the relatively small cohort sizes associated with radiologic sciences programs. It is recommended to assess the entire cohort of students. Are we using random samples?
- Are we looking at 100% of the students in the cohort during the assessment timeframe?
- Is there a better way of reducing the number of data collections by possibly reducing the frequency or length of time for which we collect data with a particular tool, e.g., measure only during two semesters instead of four?
- Assessment best practices suggest utilizing both formative assessment (utilized during the students' educational program) as well as summative assessment (used upon completion of the educational experience). Depending upon the tool, waiting to assess student learning until after students have left the program may be too late to make positive improvements in the

program. On the other hand, assessing the “final product,” the graduate, is of tremendous value in pointing out opportunities for program improvement. Are we utilizing the best combination of formative and summative assessment to assure student learning outcomes are achieved?

Benchmarks - Programs must set the expectations for how well the students are learning. If only a section/part of a measurement tool is used, then the program must be able to set a benchmark for that particular subsection of the entire measurement tool. For example, if assessing “positioning skills,” utilize only the positioning skills subsection of the entire competency or clinical evaluation tool.

- Is the benchmark consistent with the measurement tool?
- If the scale is not a 100% scale are we clearly identifying the scale being used?
- Benchmarks are reasonable expectations. If, for example, a “passing” benchmark is set at a 75% average for the entire cohort, that would mean some students are performing well below the acceptable “passing” level of 75%. The program may wish to consider setting the performance benchmark higher than the minimum “passing” level.
- Are our benchmarks set at reasonable and acceptable levels?
- Should our benchmarks be set higher to reflect our true expectations for student learning?
- If students are consistently meeting a benchmark, should we increase the benchmark?
- If we raise a benchmark, what must be done to improve the program in order to get the students to that higher level?
- Should we lower a benchmark if the benchmark is not met for several cycles of assessment? Programs should examine results over several cycles for trends, analyze the reasons for any unmet benchmark(s), and make modifications to improve student performance. Programs should “stretch” to reach the highest levels of student achievement possible before deciding to lower a benchmark.
- When measuring both formatively and summatively, is it appropriate to set the benchmark higher for the summative assessment to reflect a higher expectation of students who are in the final stages of completing the program?

Timeframes - Assessment best practices would suggest that SLOs be both formatively and summatively measured. Depending upon the learning being assessed, a formative measure might be early or near the midpoint of the program, while the summative measure would come near the end, or upon completion of, the program. Formative measures tell whether the students, to that point, have learned to the expected level; if not, the program has time to modify the instructional process. Formative assessment should not occur too early in the program. Early measurement, when the students don’t have the appropriate experience, will only provide data that confirms students have not had an adequate amount of experience to demonstrate mastery of the didactic material or clinical skills.

- Is our formative assessment timeframe appropriate?
- Summative assessment is used to determine if program graduates are at the achievement level consistent with the program’s mission. Should we establish any different timeframes for summative measurement?
- Would feedback obtained postgraduation from graduates or employers graduates be valuable in the assessment process?

Person/Group Responsible for Collecting Data – The assessment plan must identify individuals/groups responsible for collecting assessment data. For examples if the tool is the clinical competency form, determine who completes the form - clinical instructors and/or clinical staff? If the program is using

surveys, the responsible party(ies) would be the person or persons who collect the survey data. Identifying the party (ies) responsible for collecting assessment data does several things; first, it clearly communicates who holds the responsibility, and secondly, it emphasizes how individual efforts are an integral and valuable part of the program's assessment process.

- Are the individuals responsible for collecting assessment data appropriately identified in the plan?
- Are the individuals identified the best resource or should someone else be identified to perform this task?
- Do these individuals understand the importance of their respective roles in the assessment process?

Reporting results – Assessment results should be reported in a format that is correlated with the benchmark. If the benchmark is based upon a Likert scale then the results should be reported using the same scale. “Actual” data must be reported.

- Are we reporting “generalizations” rather than actual results? For example, based on a benchmark: “All students will achieve a minimum 80%,” the results cannot be reported as, “All students received over 80%.” This is not actual data and does not indicate how well the cohort performed. Did the distribution of scores identify multiple students barely exceeding the minimum benchmark, or were scores concentrated at the upper end of the grading scale? If using a class average as the benchmark, report the actual average score.
- When reporting the data, are we also reporting the sample size (“n” number), i.e., the number of data inputs reviewed to determine the reported results?

Analysis - Analyzing outcome data to determine how well the program is doing in meeting its mission and goals should be where the program's time is spent - not merely on collecting data. Analysis of student learning outcome data and program effectiveness data allows the program to identify strengths and areas for improvement. The **STANDARDS** require that programs analyze and share student learning outcome data and program effectiveness data with communities of interest to foster continuous program improvement. The review with communities of interest should occur at least annually and be formally documented.

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