

Methods of Assessment: Direct and Indirect

Once the SLOs for a course, certificate, major, or Student Services program are created, faculty must determine how to assess the SLOs and what criteria will be used for success. There are two kinds of assessment: **direct assessment** methods and **indirect assessment** methods.

- **Direct assessment** methods require students to demonstrate knowledge and skills and provide data that directly measure achievement of expected outcomes. That is, students have to actively do something observable or measurable using the knowledge and skills stated in the SLO, and results are quantified through scoring mechanisms such as percentage correct, total points, or rubrics. Examples are listed below.
- **Indirect assessment** methods require that faculty infer actual student skills, abilities, knowledge, and values from sources other than observable, direct evidence. Often this involves students self-reporting their learning or growth. Specific examples are below.

Both methods are valid, although indirect methods alone are not always considered to provide sufficient evidence in instructional areas.

In many cases, the same assessment instruments in a course used for grading, such as exams, writing assignments, projects, or surveys, can be adapted to provide data regarding SLO assessment as well. This is known as **embedded assessment**.

Examples of Direct Methods of Assessment

Capstone Course Evaluation: Capstone courses, often a part of CTE certificate and major programs, integrate knowledge, concepts, and skills associated with an entire sequence of study in a program. This method of assessment is unique because the courses themselves become the instruments for assessing student teaching and learning. Evaluation of students' work in these courses is used as a means of assessing student outcomes. For academic units where a single capstone course is not feasible or desirable, a department may designate a small group of courses where competencies of completing majors will be measured.

Collective Portfolios: Faculty assemble samples of student work from various classes and use the "collective" to assess specific course or program learning outcomes. Often a rubric is used as part of the evaluation.

Commercially Produced or Standardized Tests: Commercially generated or

standardized tests are used to measure student competencies under controlled conditions. Tests are developed and measured nationally to determine the level of learning that students have acquired in specific fields of study. For example, nationally standardized multiple-choice tests are widely used and assist departments in determining programmatic strengths and weaknesses when compared to other programs and national data.

Embedded Questions on Assignments or Exams: Questions specifically related to student learning outcomes can be embedded within course assignments or exams. For example, all sections of the introductory biology course could include a set of questions relating to an SLO on research methods. Faculty would grade the exams as usual and then separate out exam questions that are linked to the SLO for analysis. The findings are reported as an aggregate.

Locally Developed Final Exams: Faculty can create an objective exam for graduating students that is aligned with the course, certificate, or major SLOs. Performance expectations should be delineated prior to obtaining results.

Pre-Test/Post-Test Evaluations: Pre-test/post test assessment is a method used by academic units where locally developed tests and examinations are administered at the beginning and at the end of courses or academic programs. These test results enable faculty to monitor student progression and learning throughout prescribed periods of time. The results are often useful for determining where skills and knowledge deficiencies exist and most frequently develop. Note: Pre-tests are not necessarily required to determine achievement of course SLOs. Pre-testing may allow faculty to determine more precisely the impact of that particular course on students' learning, but when the object is to determine whether students who complete the class have achieved the SLOs, one assessment towards the end is usually adequate.

Student Presentations: Observations of any behavior such as performances, projects, and artwork can be used for assessment. These presentations or performances can be evaluated using a narrative or in a structured format, such as a rubric.

Scoring Rubrics: Rubrics can be used to score any product or performance such as essays, portfolios, recitals, oral exams, artwork, skill demonstrations, and other more holistic demonstrations of application and integration of learning. A detailed scoring rubric that delineates criteria used to discriminate among levels is developed and used for scoring. For formal assessment and dissemination, two raters are usually used to review each product and a third rater is used to resolve discrepancies. Please see the [Rubrics section](#) on the Resources page of the SLO site for more information about rubrics.

Videotape or Audiotape Evaluations: Videotapes and audiotapes have been

used by faculty as a kind of assessment of student skills and knowledge. Disciplines, such as theatre, music, art, and communication, which have experienced difficulty in using some of the other assessment methods, have had significant success in utilizing videotapes and audiotapes as assessment tools. This method may also be useful for online and hybrid courses. Often rubrics are used for scoring.

Examples of Indirect Methods of Assessment

Alumni Surveys: Surveying alumni is a useful assessment tool for generating data about student preparation for professional work, program satisfaction, and curriculum relevancy. As an assessment supplement, alumni surveying provides departments with a variety of information that can highlight program areas that need to be expanded or enhanced.

Employer Surveys: Employer surveys can provide information about the curriculum, programs, and students that other forms of assessment cannot produce. Through surveys, departments traditionally seek employer satisfaction levels with the abilities and skills of recent graduates. Employers also assess programmatic characteristics by addressing the success of students in a continuously evolving job market.

External Reviewers: Peer review of academic programs is a widely accepted method for assessing curricular sequences, course development and delivery, and the effectiveness of faculty. Using external reviewers is a useful way of analyzing whether student achievement correlates appropriately with departmental goals and objectives.

Student Interviews/Surveys: Students are interviewed or surveyed to obtain feedback about specific areas relating to course or program SLOs. Data obtained can address strengths and weaknesses of the course or program and/or assess students' perception of their learning of relevant concepts, theories or skills.