

Chapter 5. Choosing Appropriate Assessment Tools

Once faculty settle on learning outcomes, and hopefully use curriculum mapping to understand which outcome(s) need attention, the next step is to select tools to assess student achievement in the target outcome(s). As practitioners note, the selection of tools involves a tradeoff between the ability to obtain detailed information and the need to keep the process feasible and manageable. For this reason programs should use multiple assessment tools to overcome the disadvantages of a single tool.

A. Two Major Issues to Consider When Choosing an Assessment Tool

1. Direct and Indirect: Assessment tools can generally be placed in two categories, direct and indirect measures. Direct measures are those in which the products of student work are evaluated in light of the learning outcomes for the program. Evidence from course work such as projects or specialized tests of knowledge or skill are examples of direct measures. Indirect measures are not based directly on student academic work but rather on the perceptions of students, alumni, employers, and other outside agents. While both direct and indirect measures have their place in assessment (together they form an important holistic impression of student learning), it is most useful for programs to start with the direct measures, given that it is there that student achievement is directly evaluated.

Direct Methods

1. Capstone courses draw upon and integrate knowledge, concepts, and skills associated with the entire curriculum of a program. Taken normally in the senior year, capstone courses ask students to demonstrate facility in the program's learning outcomes, in addition to other outcomes associated with the particular course. Within a capstone course, evidence of student learning may include comprehensive papers, portfolios, group projects, demonstrations, journals, or examinations. But how does one use this evidence to assess the overall program? The final grade for the course, being a single measure, does not dissociate into an assessment of student achievement in the various learning outcomes for the program (although achievement in each of the learning outcomes may combine into the final grade). One method of assessment in capstone courses is to evaluate student work with an eye toward the multiple dimensions of the program's outcomes. More than one faculty member can be invited to assist in the assessment of student work, e.g. in an essay, or a presentation. The assessment of a major paper or project, or set of papers or projects, may be broken down into sub-assessments of each learning outcome.

2. In course-embedded assessment, student work in designated courses is collected and assessed in relation to the program learning outcomes, not just for the course grade. As in the capstone course, the products of student work need to be considered in light of the multiple dimensions of the learning outcomes. Products may include final exams, research reports, projects, papers, and so on. The assessment may be conducted at specific points (e.g., introductory course and upper-level course) in a program.

3. Standardized tests. The Educational Testing Service and other companies offer standardized tests for various types of learning outcomes, such as critical thinking or mathematical problem solving. Scores on tests such as the GRE or the Massachusetts Test of Educator Licensure (MTEL) may be used as evidence of student learning.

4. Locally developed tests. Faculty may decide to develop their own internal test that reflects the program's learning outcomes. Though locally developed tests require work by the program's faculty in development and scoring, they are less costly than a standardized test and are often more meaningful in that they focus more clearly on the intended learning outcomes.

5. Portfolio evaluation. A portfolio is a compilation of student work that, in total, demonstrates a student's achievement of various learning outcomes. Portfolios can be created for a variety of purposes aside from program assessment, such as fostering reflection by students on their education, providing documentation for a student's job search, or certifying a student's competency. Portfolios created over the span of a student's academic career, compared to those consisting of a student's work only at the end, provide the basis for a developmental assessment.

6. Pre- and post- tests. One of the questions that comes up in assessment is not only whether students can demonstrate the learning outcomes when they graduate, but how much of what they can demonstrate was actually gained during their time in the program. This suggests the need to assess the students' knowledge and skills at the point of entry into the program and, later, at the point of exiting the program. In pre-test/post-test assessment, student work is assessed both early and late in their academic career, from which the growth and development of the students can be deduced. Several of the previously described tools lend themselves to pre-test/post-test evaluation. Portfolios that collect evidence throughout a student's academic career can intrinsically be a type of pre- and post-test evaluation. Course-embedded assessment in which student work is collected from introductory and upper-level courses also provides a type of pre- and post-test evaluation, although the level of difficulty in the two courses can be expected to differ considerably. Standardized or locally developed tests can be administered at two times in a student's career to assess learning. However, if the test is exactly duplicated at the two times, then students may improve simply by having seen it twice. On the other hand, if different tests are administered at the two times, it can be difficult to ensure that both tests are of the same nature and difficulty, so the reliability of this method becomes a question.

Indirect Methods

1. Student self-efficacy. Students have a sense of their own competence. Student self-efficacy involves students rating their perception of their own achievement in particular learning outcomes. Research shows a significant, although imperfect, correlation between actual and perceived competence. What can be problematic are gender and demographic differences in the accuracy of self-efficacy. For example, certain groups of students may rate their quantitative skills at a level below that indicated by standardized tests. Also, unless "the answers are anonymous, students will be likely to overrate their abilities. The same is true if students perceive they can be penalized by their answers. Self-efficacy as an assessment tool is relatively simple. For example, tests have been designed that ask students to rate the perceived importance and self-efficacy of leadership skills, communication skills, interpersonal skills, analytical skills, decision-making skills, technological skills, the global economy, ethics, and business practices." (Source: Weber State)

2. Student satisfaction surveys. Given that student satisfaction with a program or course is not a learning outcome, satisfaction may or may not relate to outcomes assessment. But satisfaction may correlate with other variables. For this reason, a common component of assessment systems is the student satisfaction survey. Such surveys may consider the extent to which students are satisfied with their interactions with faculty, with their introductory or advanced courses, or with their preparedness coming out of the program. “Use of individual course evaluations for program assessment is problematic because the evaluations reflect on individual instructors – a serious pitfall to be avoided in program assessment. Disadvantages include the difficulty of designing questions appropriately, or, again, a potential hazard in linking student satisfaction and achievement of learning outcomes.” (Source: Weber State)

3. Student attitudinal surveys. If learning outcomes include elements of appreciation or understanding of particular issues of concern, student attitudes can be measured as part of the assessment program. For example, informed appreciation for the arts may be assessed using an attitudinal survey. Another example may be students’ empathy toward disadvantaged groups, which can be measured in an attitudinal survey. A further example would be attitudes toward learning or toward the profession. Both standardized tests and locally designed surveys can be used for this purpose, although the responses are very sensitive to the wording of the questions. Disadvantages include the challenge of determining student attitudes in a reliable manner.

4. Exit interviews. Rather than assess students’ attitudes, self-efficacy, or satisfaction through the use of surveys, students may be interviewed directly in individual or focus-group settings. Such interviews allow a more thorough, free-form exploration of the issues through the use of follow-up questions that depend on students’ responses.

5. Alumni surveys. The perspective that students have on their education may change significantly after time away from school. Some learning outcomes lend themselves more naturally to questions posed some time after graduation. For example, an outcome involving preparation for professional practice can best be assessed after the student has graduated and been employed in the job market.

6. Employer surveys. It is possible that some of the students' knowledge and skills are evident to the employers who rely on these characteristics. Thus, some accrediting bodies either require or encourage programs to perform an assessment through the major employers of their students. These may range from information as basic as hiring data, to site supervisor evaluations, to detailed surveys of the characteristics that the employers perceive in program graduates. Advisory boards, anecdotal information, and placement data may be used in place of formal surveys.

7. Curriculum Analysis. Accrediting bodies have historically required institutions to document the information that students are receiving and the content that the program delivers in its courses. With the move toward learning-outcomes assessment, programs are required to show that students actually exhibit the skills and qualities that the program wishes to develop. However, a curriculum analysis may still be relevant and is often included in accreditation documents. For example, some accrediting bodies may require the documentation of the number of hours devoted to a particular subject in the curriculum.