

# **ASSESSMENT OF STUDENT LEARNING OUTCOMES IN THE MAJOR A PRIMER FOR DEPARTMENT ASSESSMENT LIAISONS**

## **I. WHAT IS ASSESSMENT?**

Assessment is the systematic collection, review and use of information about educational programs to improve student learning. Assessment focuses on what students know, what they are able to do, and what values they have when they graduate. Assessment is concerned with the collective impact of a program on student learning.

## **II. WHY ASSESS DEPARTMENT PROGRAMS?**

One major purpose of assessment is to inform. The results from an assessment process should provide information that can be used to determine whether or not intended learning outcomes that faculty have set are being achieved. The information can then be used to determine how programs can be improved. An assessment process can also be used to inform departmental faculty and other decision-makers about relevant issues that can impact the program and student learning, such as the need for additional faculty and resources. It can be used to support your assertions about your department's successes and strengths. Assessment activities can also serve external needs by providing data to create a body of evidence for external accreditation.

## **III. WHAT ARE THE STEPS IN THE ASSESSMENT PROCESS?**

One of the first steps in the assessment process is the development of statements of what graduates should know, be able to do, and value. These are known as statements of expected or intended student-learning outcomes. These statements should be based upon the departmental mission statement, an integral part of the departmental program. The remainder of the assessment process involves the development of an assessment plan that includes: 1) the selection or design of appropriate assessment methods; 2) implementing the assessment methods and gathering data on how well students have achieved the expected learning outcomes; 3) examining, sharing, and acting on assessment findings to improve student learning; and 4) examining the assessment process itself—assessing assessment.

## **IV. DEVELOPING STATEMENTS OF EXPECTED LEARNING OUTCOMES**

Successful program assessment begins with a clear sense of what the program is designed to accomplish. The terms “goals” and “objectives” are often used in relation to expected student learning outcomes. Goals describe broad learning outcomes and concepts (what you want students to learn) expressed in general terms (e.g., oral and written communication skills, problem-solving skills, etc.). Objectives are the specific skills, values, and attitudes students should exhibit that reflect the broader goals (e.g., for students in a freshman writing course, this might be “students are able to develop a

cogent argument to support a position”). Objectives and expected student learning outcomes are interchangeable terms.

### **A. STUDENT LEARNING GOALS**

Developing agreed upon program-specific student learning goals (broad learning outcomes and concepts expressed in general terms) is not always a quick and easy task because departments vary in the extent to which the faculty share a common disciplinary framework or epistemology. Department faculty should discuss what the ideal graduate of the program should know, be able to do, and care about. Collect and review instructional materials such as syllabi, assignments, tests, and texts to see faculty expectations about knowledge, skills, and values students are expected to develop. Use documents that describe your department and its programs, such as brochures, catalog descriptions, and mission statements, to identify your student learning goals. Review and react to goals from similar departments from other campuses and adapt relevant segments. Consider competencies developed by discipline-specific associations and accrediting bodies. Descriptions from employers of their expectations for graduates or information from lay advisory committees may be useful. Ascertain expectations of graduate or professional programs typically entered by majors.

Examples of program-specific student learning goals include:

- “Students should develop a critical understanding of a significant portion of the field of psychology.”
- “Students who complete the degree major in Organizational Communication should feel that it is important to exercise ethical responsibility in their communication with others.”
- “Students will develop an understanding of important concepts and methods in the sciences.”
- “Students will obtain mastery of higher-order objectives (i.e. problem solving skills) in the discipline.”
- “Students will develop skills useful to functioning as a professional in their field of study.”

It is generally a good idea to identify between three and five student learning goals for your program. However, if the department can agree on only one goal, focus on that one.

### **B. STUDENT LEARNING OBJECTIVES/EXPECTED OUTCOMES**

Program objectives/expected outcomes transform the general program goals into specific student performance and behaviors that demonstrate student learning and skill development. What are the specific student behaviors, skills or abilities that would tell you that a goal is being achieved? What evidence, behavior, etc. would a skeptic need in order to see that your students are achieving the major goals you have set out for them? What evidence tells you that students have met these goals?

There are three types of student learning objectives/expected outcomes:

- Cognitive objectives—What do you want your graduates to know? (terms, concepts, facts, theories, principles, and methods, etc.)
- Behavioral objectives—What do you want your graduates to be able to do? (written and oral communication; problem-solving; computational, leadership, teamwork, and presentational skills, etc.)
- Affective objectives—What do you want your graduates to value or care about? (appreciation for music, literature, and diversity; religious values; political awareness; ethical awareness; and commitment to lifelong learning, etc.)

Effectively worded student learning objectives/expected outcomes should use action verbs that specify definite, observable behaviors. Concrete verbs such as “define,” “argue,” or “create” are more helpful for assessment than vague verbs such as “know,” “understand,” or passive verbs such as “be exposed to.” Bloom’s Taxonomy is a well-known description of levels of educational objectives. It may be useful to consider this taxonomy when defining your objectives. (See Appendix A for a copy of Bloom’s Taxonomy.) Student learning objectives/expected outcomes should be worded so that someone outside the discipline can understand them. Student Learning objectives/expected outcomes should be S.M.A.R.T.—specific, measurable, action-oriented, reasonable, and time-specific.

It is suggested that the number student learning objectives/expected outcomes identified for each departmental major be kept small because, for every objective/outcome identified, there should be a means of assessment. If a large number of objectives/outcomes are identified, a large and elaborate assessment mechanism will be necessary. If ever there existed a subject where the “kiss” principle (Keep it Simple, Stupid) applied, outcomes assessment is that subject. It is normal for the number of objectives/outcomes to be revised during the process of identifying the assessment methods for those objectives/outcomes. (See Appendix B for Examples of Effective Goals and Objectives.)

## **V. ASSESSMENT METHODS**

When developing assessment methods, make sure your selections are manageable given available time and money resources and result in useful feedback that highlights accomplishments and identifies areas requiring attention. Consider data you might currently have available to you but that you might not be using for assessment purposes such as exams, assignments, or projects common to a group of students in the major and senior assignments accomplished as a part of a capstone experience. Because most course grades represent the sum total of a student’s performance across a host of outcomes, they provide little information on the overall success of the program in helping students attain specific and distinct learning objectives. Data on the quality of the curriculum, faculty qualifications and publications, course selection, faculty/student ratios, and enrollment are also inappropriate for measuring student-learning outcomes. New data on student learning can be collected from the following sources:

- Standardized tests (nationally-constructed or department based to assess cognitive achievement)
- Course-embedded assessment (uses exams, class activities, and assignments)
- Portfolio analysis (collection of student work)
- Performance-based measures (activities such as writing an essay, making a presentation, completing a problem-solving exercise, giving a performance, and simulations)
- Capstone courses for graduating seniors (summary course for major)
- Surveys, interviews, and focus groups of students, alumni, and employers
- Institutional data on graduation and retention

Each department will select and develop assessment methods that are appropriate to their departmental goals and objectives. These are the methods that will provide the most useful and relevant information for the purposes that faculty in the department have identified. Not all methods work for all departments. There should be a balance of direct and indirect measures. Direct methods ask students to demonstrate their learning and look directly at student work product. Direct methods include objective tests, essays, presentations, and classroom assignments. Indirect methods ask students to reflect on their students and include surveys and interviews. Include qualitative as well as quantitative measures. Quantitative measures assess teaching and learning by collecting and analyzing numeric data using statistical techniques. These include standardized test scores and survey results. Qualitative measures rely on descriptions rather than numbers. These include exit interviews, participant observations, writing samples, and open-ended questions on surveys and interviews.

#### A. DIRECT METHODS

**Tests and exams** provide direct evidence of student academic achievement and can be more objective, valid and reliable than subjective ratings. Selecting a standardized instrument or a locally developed assessment tool depends on specific needs and resources available. Knowing what you want to measure is key to selecting standardized instruments. Locally developed instruments can be tailored to measure specific performance expectations for a group of students. Locally developed instruments are directly linked to the local curriculum. Putting together a local tool and developing the scoring method is time-consuming and the results cannot be compared to state or national norms. Standardized tests can be expensive to purchase, and they may not link to local curricula.

**Course-embedded assessment** refers to methods of assessing student learning using certain work products of a course or courses to gauge the extent of the learning taking place. This technique uses existing information that instructors routinely collect (test performance, quizzes, essays, etc.) or through assignments introduced into a course specifically for the purpose of measuring student learning. Course-embedded assessment involves 1) choosing or creating assignments in courses that indicate whether or not student learning objectives/expected outcomes for the major are being achieved; 2)

evaluating assignments not on the basis of a course grade but according to the degree to which students achieve objectives/expected outcomes for the program; 3) translating objectives into criteria; 4) creating specific, behaviorally-anchored, rating scales for each criterion and attaching point values to each level; and 5) adding the point values attained to produce an overall score for overall assessment. This method is often effective and easy to use because it builds on the structure of the course. It takes preparation and analysis time and is better for measuring and improving performance in individual courses than entire programs.

**Portfolios** are collections of student work over time that are used to demonstrate student growth and achievement in identified areas. A portfolio may contain all or some of the following: research papers, process reports, tests and exams, case studies, audiotapes, videotapes, personal essays, journals, self-evaluations and computational exercises. With this assessment method, students collect examples of work that illustrate achievement of the identified student learning objective/expected outcome and write a reflective commentary. Faculty periodically assess the portfolios of a cohort of students against the objective/expected outcome with a view to improving the program. Using portfolios involves 1) isolating the objectives/expected outcomes that can be assessed through portfolios; 2) selecting a sample of students; 3) providing students with a binder or indicate relevant assignments; and 4) using standardized evaluation sheets (or rubrics) to assess achievement of objectives/expected outcomes of each student. Portfolios demonstrate learning over time and provide direct evidence of achievement. They are costly, time-consuming and require extended effort on the part of students and faculty.

**Capstone courses** or culminating assignments offer students the opportunity to put together the knowledge and skills they have acquired in the major, provide a final common experience for majors, and offer faculty a way to assess student achievement across a number of discipline-specific areas. This is a curricular structure as well as an assessment technique and may consist of a single culminating or capstone course or a small group of courses designed to measure competencies of students completing the program. A senior assignment such as a performance portfolio or thesis has the same integrative purpose as the capstone course.

**Performance assessment** uses student activities to assess skills and knowledge. These activities include class assignments, auditions, recitals, projects, presentations, and similar tasks. Performance assessment is linked to the curriculum and uses real samples of student work. Articulating the skills that will be examined and specifying the criteria for evaluation may be time-consuming and difficult.

Many direct methods of assessment require the use of **scoring rubrics**. Scoring rubrics identify criteria for successfully completing the assignment and establish levels for meeting these criteria. Rubrics can be used to score everything from essays to performances. Holistic rubrics produce a global score for a product or performance. Primary trait analysis uses separate scoring of individual characteristics or criteria of the product or performance. (See the publication *Scoring Rubrics: A Compilation of Rubrics*

*Collected from Texts, Web Sites, Conference Presentations, and Generous Colleagues, California State University.)*

## **B. INDIRECT METHODS**

**Surveys and interviews** ask questions of groups who are able to assess the cognitive, behavioral, or affective performance of the program. These groups include current students, graduating students, recent graduates, alumni, and employers. These assessment methods provide indirect evidence of the effectiveness of the program in achieving its student learning objectives/expected outcomes. Questions can be both open-ended and closed-ended. Surveys and interviews can be conducted in writing, orally (face-to-face), or by telephone. Surveys can be relatively inexpensive and easy to administer and can reach participants over a wide area. It can be difficult to reach the sample population and it can be time-consuming to analyze the data. Employer surveys help the department determine if their graduates have the necessary job skills, although responses may not provide enough detail to make decisions about specific changes in the program. Alumni surveys can provide a wide variety of information about program satisfaction, how well students are prepared for their careers, what types of jobs or graduate degrees majors have obtained, starting salaries, and the skills needed to succeed in the job market or in graduate study. Alumni can be difficult to locate and it can be time-consuming to develop an effective survey and ensure an acceptable response rate.

**Focus groups** are structured discussions among homogeneous groups of 6-10 individuals who respond to open-ended questions designed to collect data about beliefs, attitudes, and experiences of those in the group. It is a form of group interview where a facilitator raises the topics for discussion and collects data on the results. Emphasis is on insights and ideas. Data collected in this way is not useful for quantitative results.

A variety of **institutional data** are collected at the university level. These data can tell you whether or not the program is growing, what the grade point average is for majors in the program, and what the retention rate is for your students. The data may be less useful to specific departments because the information collected is very often general and may not directly relate to program goals and objectives.

## **VI. BRINGING IT ALL TOGETHER—THE ASSESSMENT PLAN**

The end result of your assessment design will be an effective and workable assessment plan. It can be a formal document or an informal schedule for department use only. It will include your student learning goals, student learning objectives/expected outcomes, and assessment methods. In addition, it will describe other aspects of your assessment process such as when you will conduct your assessment, who will be responsible for the components of your assessment, who is responsible for reviewing and disseminating your assessment findings, and how the data will be used to improve your program or revise your curriculum. This last step is known as closing the feedback loop. It is necessary to close the loop in order to ensure that assessment data contribute to program improvement and resource allocation decisions.

**APPENDIX A  
BLOOM'S TAXONOMY**

<b>Knowledge</b>	<b>To know specific facts, terms, concepts, principles, or theories</b>
<b>Comprehension</b>	<b>To understand, interpret, compare and contrast, explain</b>
<b>Application</b>	<b>To apply knowledge to new situations, to solve problems</b>
<b>Analysis</b>	<b>To identify the organization structure of something; to identify parts, relationships, and organizing principles</b>
<b>Synthesis</b>	<b>To create something, to integrate ideas into a solution, to propose an action plan, to formulate a new classification scheme</b>
<b>Evaluation</b>	<b>To judge the quality of something based on its adequacy, value, logic, or use</b>

**RELEVANT VERBS**

<b>Knowledge</b>	<b>Comprehension</b>	<b>Application</b>	<b>Analysis</b>	<b>Synthesis</b>	<b>Evaluation</b>
<b>Cite</b>	<b>Arrange</b>	<b>Apply</b>	<b>Analyze</b>	<b>Arrange</b>	<b>Appraise</b>
<b>Define</b>	<b>Classify</b>	<b>Change</b>	<b>Appraise</b>	<b>Assemble</b>	<b>Assess</b>
<b>Describe</b>	<b>Convert</b>	<b>Compute</b>	<b>Break down</b>	<b>Categorize</b>	<b>Choose</b>
<b>Identify</b>	<b>Describe</b>	<b>Construct</b>	<b>Calculate</b>	<b>Collect</b>	<b>Compare</b>
<b>Indicate</b>	<b>Defend</b>	<b>Demonstrate</b>	<b>Categorize</b>	<b>Combine</b>	<b>Conclude</b>
<b>Know</b>	<b>Diagram</b>	<b>Discover</b>	<b>Compare</b>	<b>Compile</b>	<b>Contrast</b>
<b>Label</b>	<b>Discuss</b>	<b>Dramatize</b>	<b>Contrast</b>	<b>Compose</b>	<b>Criticize</b>
<b>List</b>	<b>Distinguish</b>	<b>Employ</b>	<b>Criticize</b>	<b>Construct</b>	<b>Decide</b>
<b>Match</b>	<b>Estimate</b>	<b>Illustrate</b>	<b>Debate</b>	<b>Create</b>	<b>Discriminate</b>
<b>Memorize</b>	<b>Explain</b>	<b>Interpret</b>	<b>Determine</b>	<b>Design</b>	<b>Estimate</b>
<b>Name</b>	<b>Extend</b>	<b>Investigate</b>	<b>Diagram</b>	<b>Devise</b>	<b>Evaluate</b>
<b>Outline</b>	<b>Generalize</b>	<b>Manipulate</b>	<b>Differentiate</b>	<b>Explain</b>	<b>Explain</b>
<b>Recall</b>	<b>Give examples</b>	<b>Modify</b>	<b>Discriminate</b>	<b>Formulate</b>	<b>Grade</b>
<b>Recognize</b>	<b>Infer</b>	<b>Operate</b>	<b>Distinguish</b>	<b>Generate</b>	<b>Judge</b>
<b>Record</b>	<b>Locate</b>	<b>Organize</b>	<b>Examine</b>	<b>Manage</b>	<b>Justify</b>
<b>Relate</b>	<b>Outline</b>	<b>Practice</b>	<b>Experiment</b>	<b>Modify</b>	<b>Interpret</b>
<b>Repeat</b>	<b>Paraphrase</b>	<b>Predict</b>	<b>Identify</b>	<b>Organize</b>	<b>Measure</b>
<b>Reproduce</b>	<b>Predict</b>	<b>Prepare</b>	<b>Illustrate</b>	<b>Perform</b>	<b>Rate</b>
<b>Select</b>	<b>Report</b>	<b>Produce</b>	<b>Infer</b>	<b>Plan</b>	<b>Relate</b>
<b>State</b>	<b>Restate</b>	<b>Schedule</b>	<b>Inspect</b>	<b>prepare</b>	<b>Revise</b>
<b>Underline</b>	<b>Review</b>	<b>Shop</b>	<b>Inventory</b>	<b>Produce</b>	<b>Score</b>
	<b>Suggest</b>	<b>Sketch</b>	<b>Outline</b>	<b>Propose</b>	<b>Select</b>
	<b>Summarize</b>	<b>Solve</b>	<b>Question</b>	<b>Rearrange</b>	<b>Summarize</b>
	<b>Translate</b>	<b>Translate</b>	<b>Relate</b>	<b>Reconstruct</b>	<b>Support</b>
		<b>Use</b>	<b>Select</b>	<b>Relate</b>	<b>Value</b>
			<b>Solve</b>	<b>Reorganize</b>	
			<b>Test</b>	<b>Revise</b>	

## APPENDIX B

### Examples of Effective Student Learning Goals and Student Learning Objectives/Expected Outcomes

#### **Social Sciences**

##### *Student Learning Goal*

Students who major in one of the social sciences will learn that they have responsibilities to themselves, their families, peer groups, communities, and society.

##### *Student Learning Objectives/Expected Outcomes*

- Students will be able to identify the role that cultural diversity plays in defining what it means to be a social being.
- Students will be able to identify the origins, workings, and ramifications of social and cultural change in their own identity.
- Students will be able to compare the distinctive methods and perspectives of two or more social science disciplines.

#### **Natural Sciences**

##### *Student Learning Goal*

Students who major in the natural sciences will become critical thinkers who are able to judge scientific arguments created by others and see relationships between science and societal problems.

##### *Student Learning Objectives/Expected Outcomes*

- Students will be able to apply scientific methodology.
- Students will be able to evaluate the validity and limitations of theories and scientific claims in experimental results.
- Students will be able to identify the relevance and application of science in everyday life.

#### **Humanities**

##### *Student Learning Goal*

Students who major in the humanities will begin to recognize themselves as “knowers,” be self-conscious about their participation in a particular culture, and cultivate their ability to discover new knowledge for themselves.

##### *Student Learning Objectives/Expected Outcomes*

- Students will be able to identify the contributions of the humanities to the development of the political and cultural institutions of contemporary society.
- Students will be able to analyze the meaning of major texts from both Western and non-Western cultures.
- Students will be able to apply the humanistic perspective to values, experiences, and meanings in their own lives.

The previous objectives do not identify specific assignments for measuring the objectives nor do they set levels of proficiency. **Generally, those aspects of the objectives need to be spelled out after the department has identified its *methods* for assessing the basic objectives.** Some examples of student learning objectives/expected outcomes that are more specific:

## **Natural Science**

### *Student Learning Objectives/Expected Outcomes*

- Students will demonstrate an understanding of basic scientific principles by restating the principle in their own words and giving a real-world example of the principle in action.
- Students will be able to distinguish between correct and incorrect applications of the principle when given examples of each on an objective exam.

## **English**

### *Student Learning Objectives/Expected Outcomes*

- Students will write five-page essays reflecting the work of an author of their choice that presents a clear and well-organized argument and uses examples from the author's work to support the argument.
- Students will use the conventions of Standard Written English in all writing assignment.

## **Education**

### *Student Learning Objectives/Expected Outcomes*

- Students will clearly demonstrate an understanding of curriculum theory and standards by preparing a two-page curriculum plan and providing justification from the literature for the chosen curriculum method.
- Students will show an understanding of real-world curriculum needs by including in the curriculum plan details on the content and order of the curriculum, the appropriate grade level, and the time frame for implementation.

## **OTHER EXAMPLES:**

### **English**

#### *Student Learning Goal*

All graduates at the baccalaureate level will develop a depth of understanding in their major field.

#### *Student Learning Objective/Expected Outcomes:*

- Graduates will be able to critique a brief draft essay, pointing out the grammatical, spelling, and punctuation errors.
- Students completing the baccalaureate program will be capable of writing an acceptable journal article.

### **Accounting**

#### *Student Learning Goal*

The student is expected to understand the application of fundamental accounting theory to nonprofit entities.

#### *Student Learning Objective/Expected Outcome*

- The student must be able to classify government activities into one of the five categories recommended by the National Council on Government Accounting.

## **Speech Pathology**

### *Student Learning Goal*

The student is expected to understand communication processes and strategies.

### *Student Learning Objective/Expected Outcome*

- The student will phonemically transcribe all standard English phonemes in nonsense syllables, words, and connected speech.

## **Theatre**

### *Student Learning Goal*

The student is expected to know the basic elements in at least one area of technical theatre.

### *Student Learning Objective/Expected Outcome*

- The student should know how to construct a soft covered flat, a standard ridged platform, and simple step unit.

## **Literature**

### *Student Learning Objective/Expected Outcome*

- The student will be able to appraise the implied and non-literal meanings of words and phrases within a given context through metaphorical use of language and through irony, understatement, and deliberate incongruity.

## **Social Work**

### *Student Learning Objective/Expected Outcome*

- The student will have the ability to identify, select, adopt, and apply the following approaches to social work practice: structural, task-centered, systems, crisis intervention, psychosocial, social learning, social developmental, Rothman's typology, and conflict based.

**APPENDIX C**  
**A TEMPLATE FOR STUDENT LEARNING GOALS AND**  
**OBJECTIVES/EXPECTED OUTCOMES**

Upon completing the major in \_\_\_\_\_, the student will be able to:

Student Learning Goal

Objectives/Expected Outcomes

Cognitive

Action Verb

Action Verb

Action Verb

Behavioral

Action Verb

Action Verb

Action Verb

Affective

Action Verb

Action Verb

Action Verb

**The terms “understand,” “be knowledgeable about,” “appreciate,” “be familiar with,” “be aware of,” and other similarly vague terms and phrases should be avoided for objectives/expected outcomes that you actually plan to measure.**