



Student Learning Outcomes: Improving Teaching and Learning

A Guide to Course-level SLOs:

Easy Steps to Developing and
Assessing Student Learning
Outcomes on the Course-level at
Saddleback College

8/01/08

NOTE: These instructions are for the purposes of devising course-level SLOs on them and they do not replace the 5-column method currently being used on the Program Level by all programs and units.

Course-level SLOs must be completed and submitted for all courses to Linda Bashor by **August 22, 2008**, via the online form that can be found on the Institutional Effectiveness website. Eventually, course-level SLOs will be a part of our curriculum process through CurricuNet, and at that time additional instructions will be distributed.

Also, please remember that these course-level SLOs will need to be assessed so look for more information to come.

Step 1: Formulate intended Student Learning Outcomes.

Student Learning Outcomes (SLOs) are defined as the knowledge, skills, abilities, attitudes, or habits of mind that students have at the completion of a course. Most of these competencies should be measurable in some way but some may only be observable (such as values).

Faculty within a department or program should meet to discuss the expected learning outcomes for students for each course in the department. **We are only collecting one SLO per course**, but eventually we will require more so faculty might want to develop lists of SLOs now. You may rotate outcomes in and out on a yearly basis from a master list of outcomes depending on the department's needs and focus.

Writing measurable outcomes is a skill that takes **limited** time to master. When writing SLOs:

- **Focus on what the student can do.** Don't address what was taught or presented, but address the observable outcome you expect to see in the student. Think about the knowledge, skills, and attitudes you expect from students who receive a passing grade in the course (see below for more information on writing SLOs).
- **Use active verbs.** Active verbs are easier to measure. For instance, if you want the students to understand how to correctly use a microscope - using the word *understand* is not measurable. Can you measure understanding? Instead try to imagine the outcome - Students will *focus* and *display* an image on the microscope. With this outcome, you can both develop criteria and measure ability. Other action verbs include: describe, classify, distinguish, explain, interpret, compose, perform, demonstrate, etc.
- **Create a singular outcome.** Do not "bundle" outcomes by linking them with "and."
- **Share the outcomes with faculty within the teaching discipline.** Since we are focusing on SLOs on the course-level and multiple instructors often teach the same course, it is important to come to a consensus on which SLOs are important among those instructors who most regularly teach the course.
- **Share the outcomes with your students.** Students need to clearly understand what is expected of them so consider including them in your course syllabus.

- **Modify as you learn from experience.** SLOs should be reviewed, assessed, and modified yearly. As you begin the actual assessment, sometimes flaws will be identified in the SLO itself.

Step 2: Determine the means of assessment for each SLO and the criteria for success.

After you create your SLOs, you need to determine how you will assess them and what criteria you will use for success. There are two kinds of evidence: direct methods and indirect methods. Both are valid, although indirect methods alone are not considered to be sufficient evidence, especially on the course level.

Examples of **direct methods** of assessment include:

- **Collective Portfolios:** Instructors assemble samples of student work to assess specific course learning outcomes.
- **Embedded Questions on Assignments or Exams:** Questions related to course learning outcomes can be embedded within class assignments or exams. Instructors grade the class assignments and/or exams as usual and then copy assignment or exam questions that are linked to the course SLOs for analysis. The findings are reported as an aggregate.
- **Locally Developed Exit Exams:** Faculty can create and implement to students an objective exam that is aligned with the course 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 department faculty where locally developed tests and examinations are administered at the beginning and at the end of each course. 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.
- **Observations:** Observations of any behavior such as student presentations or students working in the library can be used for assessment. Observations can be recorded as a narrative or in a highly structured format, such as a checklist, and they should be focused on specific course SLOs.
- **Scoring Rubrics:** Rubrics can be used to score any product or performance such as essays, portfolios, recitals, oral exams, etc. A detailed scoring rubric that delineates criteria used to discriminate among levels is developed and used for scoring. Generally two raters are used to review each product and a third rater is used to resolve discrepancies.
- **Videotape or Audiotape Evaluations:** Videotapes and audiotapes have been used by faculty as a kind of pre-test/post-test assessment of student skills and knowledge. Disciplines, such as theatre, music, art, and communication, which have experienced difficulty in using other

assessment methods have had significant success in utilizing videotapes and audiotapes as assessment tools.

Examples of **indirect methods** of assessment include:

- **Alumni Surveys:** Surveying of alumni is a useful assessment tool for generating data about student preparation for professional work, course satisfaction, and curriculum relevancy. As an assessment supplement, alumni surveying provides departments with a variety of information that can highlight course areas that need to be expanded or enhanced.
- **Employer Surveys:** Employer surveys can provide information about the course content, method of delivery, and student performance that other forms of assessment cannot produce. Through surveys, departments traditionally seek employer satisfaction levels with the abilities of skills learned in the course.
- **Student Exit Interviews/Surveys:** Students leaving the college are interviewed or surveyed to obtain feedback. Data obtained can address strengths and weakness of the course offerings in a department and/or assess relevant concepts, theories or skills.

Below are examples of correctly formatted SLOs with their assessment methods and criteria for success:

Anthropology 1 - Biological Anthropology

SLO: Students who take this course will be able to explain the four forces (or processes) of evolutionary change.

Assessment Method and Criteria for Success: In an essay questions embedded in the midterm, 75% of the students will be able to accurately distinguish between mutation, gene flow, genetic drift, and natural selection by scoring at least 8 out of a possible 10.

Anthropology 1L - Lab for Biological Anthropology

SLO: Students enrolled in this lab will be able to classify hominid/hominin species based upon selected anatomic traits.

Assessment Method and Criteria for Success: In the lab practicum, 75% of the students will successfully apply at least 4 distinct traits in the identification of hominid/hominin species by scoring at least 12 out of a possible 16.

Step 3: Complete the online Course-level Student Learning Outcomes (SLO) Form and submit this form by August 22.

The department chairperson and/or the designee must submit at least one students learning outcome for each course in his/her department. To access this online form, go to the following link: <http://www.saddleback.edu/gov/senate/ie/>.

To complete the online form, please do the following:

- Write one SLO on the course level.
- Check the competency that applies to the written SLO.
- Write the Assessment Method (what measurement and assessment tool will be used) and the Criteria for Success (what is expected to be accomplished for the SLO).
- Print a copy for your records.
- Submit the online form by August 22 (There is a link at the bottom of the form that is used for e-mailing it).
 - Linda Bashor will send a response after she receives it.
- Check online at the IE website <http://www.saddleback.edu/gov/senate/ie/> to see which courses have SLOs and which ones don't. (Note: List is updated periodically.)

For additional information and resources go to the IE website <http://www.saddleback.edu/gov/senate/ie/>.

Additional Information on Writing Student Learning Outcomes on the Course Level

As you write your Student Learning Outcomes on the course level, please consider the following:

What are Student Learning Outcomes?

Student learning outcomes are the measurable and/or observable goals and results that are expected subsequent to a learning experience. Learning outcomes are clear and assessable statements that define what a student is able to know, think or do at the completion of a program or course.

SLOs and Learning Domains

Benjamin Bloom developed classifications of intellectual behavior and learning in order to identify and measure progressively sophisticated learning -- this is often referred to as "Bloom's taxonomy." What Bloom showed us is that learning is not a purely cognitive function but occurs on various levels or domains. There are three principle domains:

- **Cognitive** – knowledge
- **Psychomotor** – physical skills or tasks
- **Affective** – behaviors that correspond to attitudes or values

SLOs, then, may involve knowledge (cognitive), skills (psychomotor), or attitudes (affective) that display evidence that learning has occurred, at a specified level of competency, as a result of a program or course. When writing your SLOs, attempt to include relevant outcomes from each of these domains.

Below are charts to assist you in writing SLOs related to each domain (adapted from charts devised by Janet Fulks and Kate Pluta at Bakersfield College, http://online.bakersfieldcollege.edu/courseassessment/Section_3_SLOs/Section3_7.htm)

Cognitive Domain:

Learning Outcomes Related To Knowledge

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Student remembers or recognizes information or specifics as communicated with little personal assimilation.	Student grasps the meaning behind the information and interprets, translates, or comprehends the information.	Student uses information to relate and apply it to a new situation with minimal instructor input.	Student discriminates, organizes, and scrutinizes assumptions in an attempt to identify evidence for a conclusion.	Student creatively applies knowledge and analysis to integrate concepts or construct an overall theory.	Student judges or evaluates information based upon standards and criteria, values and opinions.
Cite Label List Enumerate Identify Imitate Match Name Quote Recall Reproduce State Write	Convert Define Describe Discuss Estimate Explain Generalize Identify Illustrate Locate Paraphrase Restate Summarize	Apply Chart Compute Demonstrate Determine Dramatize Establish Make Manipulate Prepare Project Solve Use	Analyze Compare Contrast Correlate Diagram Dissect Differentiate Distinguish Infer Investigate Limit Outline Separate	Assemble Create Construct Design Develop Formulate Generate Hypothesize Initiate Invent Modify Reframe Synthesize	Access Appraise Conclude Critique Decide Defend Diagnose Evaluate Judge Justify Rank Recommend Support



Basic

More Sophisticated

**Psychomotor Domain:
Learning Outcomes Related To Skills**

Observe	Model	Recognize Standards	Correct	Apply	Coach
Students translate sensory input into physical tasks or activities.	Students are able to replicate a fundamental skill or task.	Students recognize standards or criteria important to perform a skill or task correctly.	Students use standards to evaluate their own performances and make corrections.	Students apply this skill to real life situations.	Students are able to instruct or train others to perform this skill in other situations.
Hear Identify Observe See Smell Taste Touch Watch *Usually no outcomes or objectives written at this level.	Attempt Copy Follow Imitate Mimic Model Reenact Repeat Reproduce Show Try	Check Detect Discriminate Differentiate Distinguish Notice Perceive Recognize Select	Adapt Adjust Alter Change Correct Customize Develop Improve Manipulate Modify Practice Revise	Build Compose Construct Create Design Originate Produce	Demonstrate Exhibit Illustrate Instruct Teach Train



Affective Domain:

Learning Outcomes Related to Attitudes, Values and Behaviors

Receiving	Responding	Valuing	Organizing	Characterizing
Students become aware of attitude, value, or behavior.	Students exhibit a reaction or change as a result of exposure to an attitude, value, or behavior.	Students recognize value and display this through involvement or commitment.	Students determine a new value or attitude as important or a priority.	Students integrate consistent behavior as a naturalized value in spite of discomfort or cost. The value is recognized as a part of the person's character.
Accept Attend Describe Explain Locate Observe Realize Receive Recognize	Behave Comply Cooperate Discuss Examine Follow Model Present Respond Show Studies	Accept Adapt Balance Choose Differentiate Defend Influence Prefer Recognize Seek Value	Adapt Adjust Alter Change Customize Develop Improve Manipulate Modify Practice Revise	Authenticate Characterize Defend Display Embody Habituate Internalize Produce Represent Validate Verify

Course-level SLO Writing Worksheet

Faculty should work with other members of their department to write SLOs for each course. This worksheet will help you through the process.

I. Devise a List of Outcomes for each course.

1. As experts in the discipline, brainstorm and come up with a list of outcomes by course.
2. Complete the chart below.

Knowledge and concepts students will have as a result of the course	
Skills or performance abilities students will have as a result of the course	
Attitudes or values developed as a result of the course	

II. Establish the Assessment Method and Criteria for Success for each SLO on the course level.

- Design the Assessment Method for the SLO.
- Create the Criteria for Success.
- Write the possible assessment techniques in the table below:

Assessment Method (measurement/assessment tool to be used)	Criteria for Success (what is expected to be accomplished)
1.	
2.	
3.	