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COURSE-LEVEL ASSESSMENT FOR STUDENT LEARNING OUTCOMES

Michelle A. Saint-Germain,
Campus Assessment Coordinator
&
Lisa Maxfield,
GE Coordinator

I. OVERVIEW OF ASSESSMENT

This workshop will provide you with an overview of the basic steps in assessment of student learning outcomes at the course level, including:

- 1--setting objectives
- 2--collecting student learning data
- 3--analyzing the data
- 4--revising

II. SETTING OBJECTIVES

During the workshop, you will have the opportunity to practice setting objectives for student learning by participating in several hands-on exercises, including:

- Exercise 1: Critique Existing Learning Outcome Objectives
- Exercise 2: Write a Learning Outcome Objective For Your Course

III. COLLECTING DATA

The workshop will introduce you to basic types of assessment instruments which are used as indicators of student learning, such as oral and written performances, individual and group problem solving, and standardized and non-standardized exams. The strategy of using multiple indicators will be explained.

IV. JUDGING THE DATA

During the workshop you will have the opportunity to practice developing criteria for judging student learning performance, that is, how can you tell if students are attaining the specified learning objectives at an acceptable level? Suggestions will be made about various tools that may be used for analyzing student performance data.

V. REVISING

The workshop will help you to 'close the loop' of assessment by showing how student learning outcome data and its analysis can feed back into revisions of course objectives, course content, and teaching and learning methods.

VI. INSTITUTIONALIZING ASSESSMENT

The workshop will inform participants about opportunities to apply for funding for assessment activities at the course, program or major, and department or degree level, and discuss how assessment activities are related to not only university accreditation but also to individual academic careers, including retention, promotion, and tenure.

I. OVERVIEW OF ASSESSMENT

What is Assessment?

Student Learning Outcome Assessment at the course level is a continuous process of setting course objectives, collecting data, judging the data, and revising.

1. Student learning outcome assessment begins with specifying the objectives for student learning for the course. What should the student outcomes be? What do you want students to have attained by the end of the course? At what level of quality and quantity?
2. The next step is to specify what the student will be expected to master by the end of the course. How will the student demonstrate that the desired learning outcomes have been attained? How will this evidence be collected by the instructor?
3. Then provisions are made for judging the evidence submitted by the students. What are the levels of performance required for passing/failing? What is the basis for the assignment of grades?
4. Finally, plans are made for revisions that will improve student outcomes in the next instructional cycle. How can more students reach acceptable outcomes?

Where do Objectives for Student Learning Come From?

The faculty who teach the course set the outcomes (or objectives). Objectives for individual courses, programs, or majors should generally be derived from or consistent with long-range, broad university, college, and departmental mission, goals, and curricula. Discipline-based organizations and professional associations may suggest suitable objectives. Past students, graduates, and employers may also have specific objectives in mind.

What is the Best Way to Demonstrate Learning Has Occurred?

Faculty may select from a large number of instruments, activities, exercises, tests, oral and written reports, individual and group projects, portfolios, and other products, depending on the learning outcomes of the course. Faculty can make up their own instruments or use commercially available instruments, depending on time, resources, and other considerations.

How Is Student Learning Judged?

At the beginning of the course, all students should be given information about the learning objectives of the course; the products the student will be expected to produce; and how those products will be judged. Students should know what is expected for each possible grading option (e.g., A-F; pass/fail; satisfactory progress, etc.). The formal statement of these expectations is sometimes referred to as a rubric.

What Is Revising?

At the end of the course, the instructor reviews the course outcomes, including both student work and student feedback about the course. The instructor may decide to make revisions to the course objectives; teaching methods; student assignments; judgement of student work; or to other facets of the course. These revisions are then incorporated into the next iteration of the course, and the process begins again.

II. STUDENT LEARNING OUTCOMES

Statements of expected learning outcomes should use concrete language and be specific.

Exercise 1: Critique Existing Learning Outcome Objectives

Take a look at the following course objectives. For each one, mark whether you think the objective is specific enough to be demonstrated by the students.

Outcome	Specific?	The student should be able to...
1		understand organic evolution
2		compare and contrast styles of musical composition
3		be aware of good health practices
4		write a poem
5		know the monarchs of England
6		construct a workable solution for a department's low student retention rate
7		think clearly
8		have cultivated aesthetic taste
9		have a working knowledge of drill presses
10		produce the following hybrid plants (list follows)

Re-write one of the objectives above to be more specific and observable:

Other examples:

To develop hypotheses that can plausibly explain data from various natural environments in terms of modern evolutionary theory.

To identify, from a list of common health-related practices, those practices considered by medical and public health professionals to be supportive of good health.

To list in chronological order all the monarchs of England since the year 1000

To select the appropriate materials, equipment, and techniques and formulate a plan to produce a specified metal object to a level of tolerance of plus or minus 1% error.

SOME WORDS TO AVOID IN WRITING LEARNING OUTCOME OBJECTIVES

be aware of	have a firm grasp of
be conversant with	have an awareness of
be familiar with	have a good sense of
be prepared for a variety of	have an in-depth knowledge of
display a broad grasp	know
have a broad understanding of	understand

SOME ACTION VERBS TO USE IN WRITING LEARNING OUTCOME OBJECTIVES

add	design	list	restate
advance	determine	locate	reveal
alter	differentiate	make	revise
analyze	discriminate	manipulate	section
annotate	dissect	match	select
apply	distinguish	mobilize	separate
appraise	divide	modify	show
arrange	draw	multiply	sift
assign	earn	name	sketch
assay	employ	negotiate	solve
assess	estimate	offer	sort
calculate	evaluate	omit	speak
canvass	exercise	operate	specify
change	exert	perform	spell
check	expand	pick	state
choose	extrapolate	plan	strike
classify	find	point	subtract
collect	form	predict	summarize
combine	generate	produce	support
compare	give	project	synthesize
compose	hold	propose	take
contrast	identify	qualify	teach
convert	illustrate	quantify	tell
create	include	quote	test
criticize	integrate	rate	touch
dance	interpolate	read	transfer
deduce	interpret	recite	transform
define	judge	referee	translate
demonstrate	justify	repeat	use
derive	label	reproduce	weigh

There is a relationship between the objectives for the course, the evidence of learning that will be produced by students, and the way the evidence will be judged. Each objective may be demonstrated by the student through only one type of work or assignments, but other objectives may require the student to complete a number of assignments. Each assignment will have its own grading scheme (or rubric). This relationship may be diagramed as shown below. If the objective is ephemeral or vague, it will be difficult to specify an assignment that will show attainment of the objectives, and it will be difficult to write a guide as to how the student work will be judged.

Outcome 1	Student work 1.a.	Rubric 1.a.
Outcome 2	Student work 2.a.	Rubric 2.a.
	Student work 2.b.	Rubric 2.b.
Outcome 3	Student Work 3.a.	Rubric 3.a.

Sample Development of a Learning Objective

First Draft: To understand great American thinkers

Comments:

Second Draft: To demonstrate understanding of the philosophical perspectives and major intellectual contributions of nineteenth-century American social commentators.

Comments:

Third Draft: Given a novel piece of contemporary social commentary, students will be able to:

1. Identify the point of view that characterizes the piece, and
2. Write an essay from 3 to 5 pages in length that
 - a. Critiques the piece of commentary from the philosophical perspectives of Henry Adams, Ralph Waldo Emerson, Henry David Thoreau, and Thorsten Veblen, and
 - b. Identifies at least one work by each of these four authors in which the author articulates a point of view similar to that expressed in the contemporary social commentary provided.

Comments:

Exercise 2: Write a Learning Outcome For Your Course

1. Identify the central idea of a student learning outcome for your course and write it here as an objective. Be sure to state your objective as an outcome (not a process).
2. Identify the evidence of student learning which will be the concrete, specific expression of the outcome. What evidence will you accept?
3. Check your statement in Step 2 for duplication, vague or ephemeral language, and non-observable student work. Re-write the statement if necessary here.
4. Write complete sentences for each of the student assignments identified above in steps 2 and/or 3. Make sure you have specific and concrete language.
5. Check to see if your outcome is completely described. Refer back to step 1. Are there any missing student assignments or evidence of learning that need to be included?
6. Do you wish to change your original objective as stated in Step 1? You can re-write it here.

Congratulations! You have just written a learning outcome objective for your course.

III. COLLECTING DATA

Developing your own data collection instruments can be cheaper than purchasing commercially available tests. However, you must try to ensure that locally developed instruments are free from bias that could interfere with the students' demonstration of their achievement of the learning outcome objectives. Examples of locally developed instruments include multiple choice exams, focus groups, case studies, portfolios, capstone courses, essays, pre-and-post tests, senior projects, honors or masters theses, oral presentations, oral examinations, exit interviews, student surveys, employer surveys, and alumni surveys.

Commercially available instruments include tests of basic skills such as reading, writing, math, science reasoning, and critical thinking; applied skills such as listening, teamwork, and interpersonal efficacy; occupational skills essential for some jobs; and national tests for majors in biology, business, chemistry, computer science, economics, education, history, English literature, music, physics, political science, psychology, and sociology. Other measures include state or professional certification or licensing, admission to graduate or professional school, and securing a job in the field.

IV. JUDGING THE DATA

In order to judge the data you must make your criteria explicit, through the use of a scoring key (or rubric). The purpose of developing a scoring key is so that students know what is expected of them. Ideally, other knowledgeable faculty in your field should be able to take your scoring key and the students' products and arrive at the same judgement that you yourself would make.

Here is an example of parts of a scoring key (rubric) for a writing assignment.

Unacceptable	Minimally Acceptable	Fully Acceptable
Paper lacks a main idea Writer has no purpose	Main idea is not clear or not consistent Purpose is vague or unfocused	Main idea is clearly and consistently presented Purpose is clear and specific
Word use is inaccurate	Word use sometimes inaccurate	Word use is always accurate
Sentences all the same	Some variety in sentence length or in sentence structure	Variety in sentence length and structure
Exceeds or falls short of specified length by 3 or more pages	Exceeds or falls short of specified length by 1-2 pages	Meets specified page length of 10 pages

Here is an example of a scoring key (or rubric) for the content of an essay where students were instructed to respond briefly but very carefully to the following question:

“Humans are involved in many different endeavors such as politics, art, literature, music, education, and business. What specific characteristics distinguish science from all other human endeavors? Be very specific.”

SCORING KEY

Score	Answer Content
4	<p>Demonstrates thorough comprehension of the concept, accurate in all respects, and includes at least six of the following nine points:</p> <ul style="list-style-type: none"> a-purpose of science is to understand natural phenomena; b-includes social as well as physical phenomena; c-characterizes science as a process rather than accumulated body of knowledge; d-science is based on observation of and experimentation with phenomena; e-involves speculation via hypothesis formulation and testing, and making inferences f-inferences are statistical and probabilistic and subject to reinterpretation g-hypotheses are falsified or confirmed rather than proven with certitude h-science is in theory self-correcting and credible through replication by others; l-growth of science knowledge is cumulative, involving many people
3	<p>Good comprehension of the concept, accurate in all respects, and includes at least four of the nine points; may have less detail in points raised</p>
2	<p>Unsatisfactory comprehension of the concept, lacking in significant detail, includes only one to three of the nine points; may contain one or more errors of fact or misconceptions</p>
1	<p>Little if any comprehension of the concept; does not specifically mention any of the nine points; contains significant errors of fact or misconceptions; completely misses the point; fails to respond to the question.</p>

V. REVISING

I. PLAN COURSE	II. CONDUCT COURSE	III. EVALUATE COURSE
Propose learning outcomes Write objectives Describe products Describe judging criteria Select texts and materials Develop teaching tools Plan for data collection	Conduct the course Collect formative data Collect summative data Collect student products Collect student course evaluations	Judge student products Review course materials Review course processes Review student evaluations Formulate plans for revision
IV. REVISE		

VI. INSTITUTIONALIZING ASSESSMENT

From university accreditation bodies, to professional degree program accreditation, to periodic program review committees, student learning outcome assessment is gaining in importance. It is also increasingly demanded by state legislatures, the public, employers, and students.

CSULB has taken a decentralized approach to student learning outcome assessment. Most assessment activities are carried on at the course, program or department level, by faculty, chairs, and staff. The Academic Senate elects members to a campus-wide Program Assessment and Review Council. A campus coordinator for program review and assessment has been appointed full time beginning in 2005-2006. Now each college on campus also has its own assessment coordinator.

To support these efforts, the Division of Academic Affairs has awarded funding to each college for assessment activities. Examples of activities funded in the past include travel to assessment conferences, holding workshops on campus, engaging the services of an assessment consultant, developing a course, program, or departmental assessment plan, and acquiring assessment materials, or other assessment-related activities suggested by faculty or staff.

As teaching is the primary mission at CSULB, Departmental and College Retention, Tenure, and Promotion (RTP) committees pay close attention to statements in course syllabi regarding student learning outcomes, methods of assessing student learning, and how assessment has been incorporated into revision of teaching and learning over time. As the pace of change in academia accelerates, with new student demographics, advances in instructional technology, and increased knowledge of teaching and learning methodologies, assessment can provide an important tool for individual faculty for promoting high quality educational attainments by students.