Articulating Learning Outcomes

Folks: Note that this document defines learning outcomes as learning goals (not the same thing).

What are learning goals?

As subject matter experts in their field, faculty know almost intuitively what the most important things are that students must master. In order to develop learning goals, faculty should answer the question, "What do I want my students to know or be able to do by the end of this course?"

Developing a set of learning goals for a course takes what faculty know but don't always state and puts it into a short list of real concepts that can guide students and add clarity to teaching and learning. The overall goal for teaching should be learning. When students know what they should be able to do by the end of a course it will be less of a challenge for them to meet that goal.

How can learning goals add value to teaching and learning?

Clearly defined learning goals contribute to a structure that surrounds a course and can aid in selecting appropriate graded and ungraded assessments, selecting relevant content for the course, and enhancing the assessment or grading practices.

- Remember that learning goals do not place limits on what you can teach in a course. Instead, goals provide a map or signposts that tell students where the course is going.
- Learning goals can add to student's sense of ownership in the learning process helping them feel like they are on the inside logic of the course instead of the outside.
- Learning goals can be a useful communication tool. Faculty can describe their course to colleagues and students by beginning with their goals.
- Departments can gain a sense of curricular cohesiveness if multiple courses have learning goals.

How do I begin developing learning goals for my course?

You are the expert in this process. Begin by relying on what you know about the subject, what you know you can realistically teach in the course, and what your students can realistically learn. As you begin developing learning goals think of concepts, topics, important skills, and vital areas of learning connected to your course. Make a list and don't worry about developing full goal statements. That will come later. The list you develop is perhaps the most important step in this exercise; it will form the basis for goals, assessments, and the overall teaching and learning process. Share your list with colleagues. Let them help you critique it. Keep returning to "what can you realistically teach and what can your students learn" as a way of editing the list to something that is manageable. Your list should help you answer the question, "What do I want my students to know or be able to do by the end of this course?"

Consider the following points as you develop learning goals:

- Don't get trapped into thinking that you will only be able to teach to the goals. Your learning goals point out the high points and learners always need to know all of the supporting content, theory, data, different points of view, and relevant facts that support the high points.
- Keep the number of learning goals - manageable and realistic. The first time you go through this exercise opt for a shorter list knowing that you can edit it as needed. Five or six goals might be a good starting point.

- Write goal statements that begin with action verbs. By using verbs that specify action, the outcome is more likely to be measurable. Actions help identify what needs to be assessed (did this student develop a plan, facilitate a process, establish a relationship, present a solution?) (See list of action verbs on the next page).
- Use language that is discipline-specific and appropriate to your field.
- Think about goals that are valuable to you and your students. Consider how discipline specific goals map to broader skills attainment (e.g., critical thinking, analytical resasoning and written/oral communication.
- Think about your teaching experience. What evidence tells you that students have met your expectations? How would you know that they are getting it? In other words, learning goals should be measurable; you will need evidence that the goal was or was not achieved.

Several examples of learning goals taken from UC Berkeley undergraduate courses

By the end of this course students will be able to:

1. Identify major figures and ideas in peace movements from around the world.
2. Formulate a well-organized argument supported by evidence.
3. Communicate effectively in the language of the target country and read appropriate vernacular materials in our field.
4. Practice ethical behavior while engaging in service learning.
5. Demonstrate the ability to read, evaluate and interpret general economic information.
6. Apply the necessary mathematical tools to solving complex design problems.
7. Apply scientific principles to analyze mechanical systems of importance to society.
8. Analyze media images and narratives.
9. Apply research methods in psychology, including design, data analysis, and interpretation to a research project.
10. Communicate effectively in an oral presentation.

List of Action Verbs

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
define	choose	act	analyze	adapt	appraise
describe	cite	administer	appraise	arrange	assess
examine	convert	apply	assess	articulate	collaborate
identify	defend	change	break down	assemble	compare
indicate	describe	collect	calculate	collaborate	conclude
know	detect	compute	categorize	combine	contrast
label	discuss	construct	classify	communicate	criticize
list	distinguish	control	compare	compose	critique
match	estimate	convert	contrast	consolidate	describe
name	explain	demonstrate	debate	construct	discriminate
outline	extend	derive	deduce	create	estimate
recall	generalize	develop	describe	design	evaluate
recognize	give examples	diagram	detect	develop	explain
record	identify	discover	diagram	devise	interpret
relate	infer	employ	differentiate	establish	judge
reproduce	locate	estimate	discriminate	explain	justify
restate	paraphrase	facilitate	distinguish	formulate	measure
select	predict	generalize	elicit	generate	rate
show	recognize	help	examine	incorporate	reconsider
state	rephrase	illustrate	extrapolate	initiate	reflect
	report	implement	identify	integrate	relate
	restate	interpret	illustrate	intervene	summarize
	select	manipulate	infer	justify	support
	summarize	modify	inspect	manage	validate

		operate	question	modify	verify
		perform	recognize	organize	
		practice	reflect	plan	
		predict	relate	predict	
		prepare	select	prepare	
		present	solve	propose	
		produce	sort	reflect	
		provide	systematize	relate	
		regulate	tabulate	revise	
		schedule	test	summarize	
		share		synthesize	
		show		tell	
		solve		write	
		use			

Linking Learning Goals to Course Assignments

Once you have developed a set of course learning goals, it's time to begin thinking about linking them to the rest of your course and to assignments, in particular.

- Begin by answering the question: "What evidence do I need to know that my students have met the goals for this course?"
- The primary source of evidence of learning will come from the course assignments that students produce.
- The work each student produces is the direct evidence of learning. This is likely the best way to evaluate learning in most courses.
- Indirect evidence of learning is seen in things like course evaluations in which students might comment that they "learned a lot."
- The "evidence" you will be looking for will be familiar (papers, exams, presentations) but now you want to connect the course goals to these assignments
- When selecting assessments consider the constraints of your course (class size, expertise of the students, workload for faculty, students, GSI's).
- Can your students successfully meet a goal through one assessment?
- Can multiple goals be included in a single, more complex assessment?

Assigned work in a course may be graded or ungraded. The following list highlights examples of both graded and ungraded assignments. Graded assignments are clearly for
evaluating learning or student performance in a course. Ungraded assignments are a kind of learning tool that expose students to concepts, let them practice doing things, and get
feedback on the learning process. Note that there is cross over between the two lists.

Selection of Assignments(Graded)	Selection of Assignments(Ungraded)
Case study	One minute paper
Analysis of case study	Background knowledge probe
Debate	Small group solving a problem
Concept paper	One sentence summary
Proposal outline	Turn to your neighbor
Focus group session and written summary	What's the principle?
Annotated bibliography	Interview your peer
Essay	One idea or concept you learned today
Field notes	Focused listening
Weekly quiz	Focus group demo
Business report	Directed paraphrasing
Letter to editor	Illustrate a concept
Model of solution, plan, theory	Brainstorm

Illustration of a concept	Defining features matrix
Letter of recommendation	Self-assessment of understanding
Visual aids	Analytical memo
Short lecture presentation	Draft exam questions
Capstone	Mock exams
Web-based project	Concept maps
Reflection paper	Impromptu oral report
Proposal for solving a problem	Small group summarize the lecture
White paper	Role play
Semester long group project	Peer reviews
Short answer subjective exam	What is the muddiest point?
Memo	
Cover letter	
Survey and analysis of results	
Portfolio	
Poster, display, or exhibit	
Self-assessment	
Course scenario	
Advertisement	
Create brochure or pamphlet	
Oral report	
Essay exam	
Journal	
Pro and con critique of opposing points-of-view	
Interviews and write summary reports	
Persuasive speech or presentation	
Term paper	
Client report	
Process description and analysis	
Collaborative problem-solving project	
Peers teaching peers	

Designing assignments linked to goals

As you begin the process of designing course assignments, answer these questions:

- What goal or goals are associated with the assignment?
- What are the components of the goal?

If you have a course goal that states that students should be able to "Formulate a well-organized argument supported by evidence" the components of that goal might be that students need to:

- Demonstrate depth and breadth of understanding
- Present information in a clear and organized way
- Incorporate a variety of sources of evidence
- Use accurate grammar and mechanics

This is a vital step in the process of linking goals with assessments. By identifying the components of a learning goal, you begin to make the teaching and learning process more transparent. Knowing what the components of a goal are will help in writing the assignment description and will be very valuable in the grading process.

Check list to consider as you design course assignments:

- Each assignment should include a clearly written description that appears in the course syllabus and outlines your expectations. The description tells students what is expected, how they will get there, and grading criteria.
- Include the goal or goals associated with the assignment.
- Write a short description of the assignment that tells students why they are doing this and what they will learn. What skills and knowledge do you want students to demonstrate?
- It's fine to keep the description fairly short in the syllabus. As the assignment due date approaches you can answer questions and add clarity during class sessions. Highly detailed descriptions that are presented at the beginning of the semester can lead to confusion and anxiety for students.
- Following the assignment description tells students how to complete the assignment. Consider including the following components:
  - What percent of the overall course grade is associated with this assessment?
  - What are the grading criteria? A potential way to address "criteria" is to use a rubric. (See examples of a "learning rubric" and a "scoring rubric" on the following pages).
  - If you choose not to use a rubric, you might rely on the components of the goals you identified in the previous step of this process.

Consider this example:

"This assignment is worth 50% of the overall course grade. The breakdown or criteria for the grade includes these components:

- Demonstrate depth and breadth of understanding (15%)
- Present information in a clear and organized way (10%)
- Incorporate a variety of sources of evidence (15%)
- Use accurate grammar and mechanics (10%)

- What is the due date for the assignment or are there multiple dates? If it is a complex assignment carrying a high percentage of the course grade consider segmenting the assignment into stages. Including stages helps keep student on track. By providing a portion of the assignment grade for each stage students receive early feedback.
- If the assignment includes a written component, what's an optimal length?
- Do you have a policy for late or incomplete assignments?
- Will you provide assistance while students are working on the assignment (reviewing drafts, providing supporting material, meeting with students)?

Grading Assignments

Established course learning goals and a good set of assignments for the course lead to grading. Consider these best practices associated with grading:

- Use your course syllabus as the primary tool for conveying information to students about your grading process. Avoid making any adjustments to syllabus after your students have received it.
- Balance student workload throughout the course. Provide enough opportunities for students to demonstrate what they are learning. At the same time avoid overloading students with too much work or work that isn't relevant. Use the established course goals for an anchor when deciding how much work to assign.
- Rely on the criteria you have established for each assignment as a "grading guide" when you begin the grading process. (The "criteria" are the components of each goal and the graded weight you identified earlier)
- Assigning a grade for an assignment is rarely enough information for students. Attempt to provide rich feedback to each student; even the "A" students deserve praise beyond the grade.
- As you grade assignments and provide written feedback to students, set aside examples of the range of grades (A, B, C). Later, review these examples as a basis of comparison for all of the graded assignments. This process is another way to ensure fair grading.