Clarifying What You Want Students to Learn

If you don't know where you're going, how will you know when you get there? In this section we offer guidance on how to clarify what you want students to learn by providing information in the following areas:

1.1   Defining Learning

The question of what constitutes learning has intrigued scholars for centuries, and today there is a wide variety of opinions about what learning is. These opinions are based in part upon differences in views about the nature of knowledge and how it is gained. Scholars also have different ideas about the catalysts for learning, the conditions that must be met in order for learning to occur, and the criteria by which we may judge that it has happened. Despite the variability on many aspects of learning, most scholars agree that learning involves acquiring new (or modifying existing) knowledge, behavior, skills, attitudes, or values. At its simplest, therefore, learning is change.

1.2   Aiming for Significant Learning

If we are going to spend time teaching, and our students are going to invest resources to attend class, it makes sense to try to achieve learning that is worthwhile. We chose to correlate this book with the Significant Learning Taxonomy (Fink, 2013) because we believe that this taxonomy supports learning that is meaningful and lasting, worthy of effort by both teachers and students. It moves beyond the cognitive domain to include dimensions that reflect a richer, more nuanced perspective on learning, and it is relational and interactive rather than hierarchical, thereby reflecting contemporary beliefs and values regarding learning.

1.3   Using the Learning Goals Inventory (LGI) to Identify Significant Learning Goals

The LGI was modeled after the Teaching Goals Inventory (TGI) developed by Angelo and Cross (1993) to help faculty identify what students should learn in their classrooms. The LGI lists 50 learning goals that are generally applicable to college-level teaching that are then clustered to correlate to the Significant Learning Taxonomy. The LGI is available either online or in Appendix B. Once you have completed the inventory and identified your goal profile, we recommend choosing your highest ranking goal (for example, Foundational Knowledge) and reading the introduction to the corresponding chapter in Part 2 (for example, Chapter 7: Teaching and Assessing for Foundational Knowledge). This will provide you with additional information on that learning dimension and examples in different disciplines for using these general learning goals to identify course-level learning goals.

1.4   Expressing What You Want Students to Learn in Language that Is Helpful for Assessment

Simply identifying course-level learning goals and then choosing a LAT from the corresponding chapter may be sufficient to implement LATs effectively. However, if you are planning to report your findings in more formal contexts, you will need to express what you want students to learn in the kind of precise language that allows you to measure, compare, and share results in ways that others will find acceptable as evidence. Doing this helps you proceed through the assessment process efficiently and effectively. Assessment language customarily moves from the general to the specific, using the terms *goals, objectives,* and *outcomes.* "Target Practice" is a popular and simple metaphor for understanding these three common terms, as displayed in Figure 1.1.

When we use this metaphor, we first describe what we intend for students to learn (goals), then identify the steps students need to take to reach the goal (objectives), and finally determine how closely students have achieved the goal based on actual evidence of their learning (outcomes). How this applies to an actual course is demonstrated in Table 1.1.

1.5   Identifying Course-Level Learning Goals

Most of us have a sense of what students should learn in a course. Indeed, the description published in an institution's course catalogue or schedule states learning goals in broad terms,
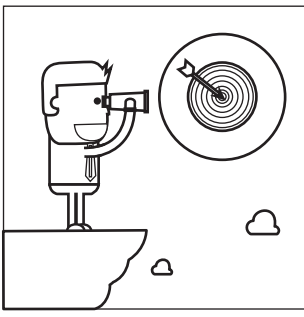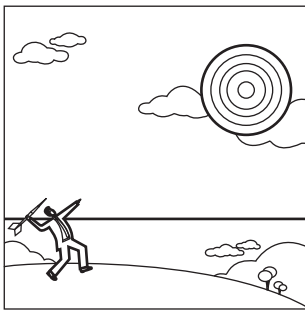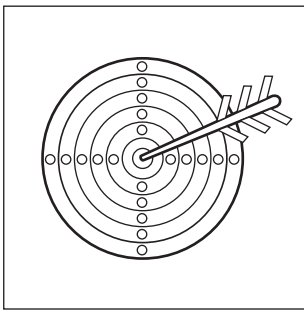
Learning Goals	Learning Objectives	Learning Outcomes
See the Target	Aim for the Target	Hit the Target

Figure 1.1 Differentiating Between Learning Goals, Objectives, and Outcomes

and many teachers quote or paraphrase this description at the top of their syllabi. Here is an example of a catalogue description for a course titled, "Principles of Cell Biology."

> An introduction to biological molecules, cellular structure and function, bioenergetics, the genetics of both prokaryotic and eukaryotic organisms, cell communication and signaling, the cell cycle, and elements of molecular biology.

Notice how the description conveys, albeit in general, discipline-based terms, what students should learn in the course. College courses today, though, are rarely stand-alone and instead are part of a larger context that you may want to consider as you identify your more specific course-level learning goals.

Considering Externally Mandated or Recommended Learning Goals

Externally recommended or mandated learning goals and competencies are those identified at the national, state, institution, college/school, program, and department level. Some goals, such as institutional core competencies and general education guidelines, focus on skills and abilities

Table 1.1 An Example of a Learning Goal, Objective, and Outcome

	Goal	Objective	Outcome
Survey of International Business	Students will acquire knowledge of international business terms and concepts.	Students will demonstrate understanding and appropriate use of international business terms and concepts.	In the oral presentation of their term project, successful learners will use and apply international business terms and concepts appropriately in their language and supporting material.

Table 1.2 Examples of Externally Recommended or Mandated Learning Goals

Context	Sample Goal
Institutional Core Competencies	A course that supports the communication core competency goal helps students develop analytical reading and writing skills, including evaluation, synthesis, and research; deliver focused and coherent presentations; and acquire active, discerning listening and speaking skills in lectures and discussions.
General Education: Humanities	A course meeting the Humanities General Education Area I Requirement must help students acquire knowledge and understanding of significant artistic, literary, and philosophical works and the historical and cultural context in which the works were created and interpreted.
College of Agriculture	Graduates of the College of Agriculture will be able to make sound, responsible judgments on the ethical policy issues involved in the production of food and fiber.
Program/Department Level	A course in the biology majors sequence must prepare students to use the scientific method to formulate questions, design experiments to test hypotheses, interpret experimental results to draw conclusions, communicate results both orally and in writing, and critically evaluate the use of the scientific method from published sources.

that transcend disciplinary boundaries. Others, such as professional accrediting agencies or department or program goals, are usually more discipline specific. Individual courses are the means by which larger stakeholders achieve their broad goals. Because college teachers are asked to demonstrate (and that means "assess") how well students in their courses are achieving these externally derived goals and competencies, you may want to adapt and rewrite them to apply to your specific course. Table 1.2 provides examples of these types of external goals, and Figure 1.2 displays how these goals drill down from the institution to the course level.

Institution:
Graduates of this institution will be able to analyze arguments, create and test models, solve problems, evaluate ideas, and verify the reasonableness of conclusions.

Department:
Upon completion of the core curriculum, students will be able to analyze current events and global issues in the context of historic patterns.

Course:
Upon completion of the course, students will be able to analyze the importance of urbanization, immigration, and the struggle for labor and women's rights as they pertain to the American historical experience.

Figure 1.2 Drilling Down from Institutional Core Competency to Course-Level Student Learning Outcome

Considering Students' Learning Goals

Empowering students as partners in the learning process is good for teachers, and it is good for students. Weimer (2002) identifies sharing power with students as the first key change required to shift to learner-centered teaching, but observes that for many of us, "[T]eacher authority is so taken for granted that most of us are no longer aware of the extent to which we direct student learning" (2002, p. 23). Empowering students to be active partners in their learning requires a subtle but thorough shift in focus away from what you are teaching to what and how students are learning, and taking their learning goals into consideration is an important initial step in adopting a more learner-centered teaching approach. Students' learning goals in a single course probably vary widely, and they may have difficulty articulating them. To assist you in guiding students to identify their learning goals, consider having students complete and self-score the LGI individually, and perhaps discuss their results in groups.

To conclude, identifying course learning goals—what you want students to gain from their experiences in your course—is a vital first step in the LAT Cycle. The LGI will help you identify goals correlated with Fink's Significant Learning Taxonomy. Integrating these general learning goals with course-specific learning goals, and possibly externally mandated or recommended goals along with student goals, will help you identify meaningful goals that engage students and are worthy of your teaching efforts.

1.6 Considering the Challenges Related to Course Learning Objectives and Outcomes

Most college teachers readily recognize the value of identifying learning goals, but they find taking the next steps—identifying objectives and outcomes—challenging both conceptually and practically.

1. Objectives and outcomes must describe an observable action, something that students *can do.* As teachers, we typically think in terms of what students should know; thinking in terms of student performance can represent a major conceptual shift.
2. Many of us believe that learning is and should be personal, value-laden, process driven, emergent, and nuanced. It can be fundamentally offensive to reduce the messy complexity of learning to a crisply defined, one-size-fits-all singular destination. In order to meet the need to identify something that is measurable and reportable (and thus satisfy the annoying assessment requirement), we may be tempted to sacrifice attempts to capture the intricacies of the deep learning we aspire to promote and instead opt for tidy, simplistic objectives and outcomes that often represent low-level cognitive skills. This not only trivializes the creativity and commitment we invest as teachers but it also fails to capture the depth and transformative nature of the learning we sense some of our students experience.
3. We know that some students will learn better than others. Conventional grading allows for evaluating achievement along an analog continuum in the gray areas between black and white. When we teach to objectives or outcomes, it "feels" binary: students either can do it or they can't.

4. We are apprehensive that as we are forced to report learning in outcomes referenced to measurable objectives, we will be pressured to "teach to the test." Some of us fear that this will limit the innovation and excitement of what we consider the best in college learning.

5. Objectives and outcomes are often written to satisfy external stakeholders and thus represent the hoped for learning of idealized, abstract students. These outcomes may therefore be occasionally—or perhaps consistently—out of alignment with the abilities, interest, and level of preparedness of the actual human beings who enrolled in our course.

6. If we are aiming for significant and enduring learning, our sights should be set far into the future—for learning that will remain long after the course is finished. Being forced to aim for and then document only what a student can do at the end of the academic term seems short-sighted.

7. Explicating course content into objectives and outcomes involves considerable effort, and the time it takes to do it could be spent on competing interests and responsibilities.

As college teachers ourselves, we share the above concerns; however, we believe that the objections and difficulties can be ameliorated. Examples of college teachers who have struggled with these challenges and successfully identified not only appropriate outcomes, but also strategies for measuring attainment of them, are plentiful. It is hard work and it is often work done best in collaboration with other faculty, but it is not impossible work. The guiding assumption is that if something can be learned, then there must be some way the learning can be demonstrated, and if the learning can be demonstrated, then there must be some way to measure it. Finally, it is simply a reality in today's higher education environment that more stakeholders are requiring teachers to identify learning outcomes, as well as provide acceptable evidence that students are achieving them. We are therefore offering you guidance on these additional steps so that your efforts can be less onerous, as well as more efficient and effective.

1.7   Determining Course-Level Learning Objectives

When we assess learning, we try to make the invisible learning inside a student's brain external and visible in a product or action that others can see. This represents an important conceptual shift of moving away from organizing instruction based on the content we want to cover to considering what students can do to demonstrate their learning. While course learning goal statements describe in general terms what we want students to learn, objectives provide the framework of steps students will take to achieve the goals in ways that make their learning visible.

For example, one of our goals might legitimately be that students "know" or "understand" or "appreciate" some aspect of foundational knowledge, but these words are open to many interpretations as well as potential misinterpretations. Translating goals into objectives that state something tangible that students do, such as "write" or "solve" or "identify," provides us with something observable that can be measured and compared. We find it helpful to write objectives as subcomponents that can represent both more detailed and comprehensive coverage and provide such a representation as an example below.

Goal: Students will acquire foundational knowledge of the multicultural music genres and styles of the United States.

Objective 1: Students will demonstrate detailed knowledge regarding the structural characteristics, stylistic categories, key musicians, and historical and social context of a variety of American music genres. This includes being able to

1A. Describe American music genres in terms of their structural characteristics, stylistic categories, and key musicians.

1B. Recall the key elements that shaped the historical and assimilation experience of five broad constituent groups: Native Americans, European Americans, African Americans, Hispanic/Latino Americans, and Asian Americans.

1C. Explain how American music genres reflect the "root" music traditions of the constituent group and the historical context in which the genre developed.

Table 1.3 Action Verbs Correlated to the Significant Learning Taxonomy

Foundational Knowledge	Application		Integration	Human Dimension	Caring	Learning How to Learn
Articulate	Act	Formulate	Arrange	Adapt	Appraise	Adapt
Assemble	Adapt	Generalize	Assemble	Analyze	Assess	Arrange
Choose	Administer	Generate	Break	Collaborate	Challenge	Assess
Cite	Analyze	Give	down	Communicate	Collaborate	Collaborate
Define	Apply	examples	Classify	Conclude	Communicate	Estimate
Describe	Appraise	Illustrate	Collaborate	Criticize	Conclude	Evaluate
Duplicate	Arrange	Implement	Combine	Estimate	Convince	Identify
Examine	Assess	Infer	Compare	Evaluate	Criticize	Illustrate
Explain	Calculate	Inspect	Consolidate	Help	Debate	Initiate
Identify	Categorize	Interpret	Contrast	Identify	Defend	Judge
Indicate	Change	Manage	Discuss	Illustrate	Dispute	Measure
Label	Collect	Manipulate	Distinguish	Infer	Estimate	Organize
List	Compose	Measure	Evaluate	Intervene	Evaluate	Question
Locate	Compute	Modify	Facilitate	Judge	Illustrate	Rate
Match	Construct	Operate	Incorporate	Justify	Intervene	Recognize
Name	Control	Organize	Infer	Manage	Judge	Reflect
Order	Convert	Perform	Integrate	Measure	Justify	Revise
Outline	Create	Plan	Judge	Praise	Measure	Summarize
Paraphrase	Debate	Practice	Measure	Propose	Modify	Synthesize
Quote	Deduce	Predict	Organize	Question	Propose	Systematize
Recall	Defend	Prepare	Question	Rate	Question	Tabulate
Recognize	Demonstrate	Present	Rate	Recognize	Rate	Test
Record	Derive	Produce	Recognize	Recommend	Recognize	Write
Relate	Design	Propose	Reconsider	Reconsider	Reconsider	
Rephrase	Detect	Provide	Relate	Reflect	Reflect	
Report	Develop	Question	Revise	Relate	Relate	
Reproduce	Diagram	Rate	Synthesize	Revise	Revise	
Restate	Differentiate	Regulate		Support		
Select	Discover	Revise		Test		
Show	Discriminate	Schedule		Validate		
State	Employ	Share				
Summarize	Establish	Show				
Tabulate	Estimate	Solve				
Tell	Evaluate	Synthesize				
	Extend	Use				
	Extrapolate	Verify				

It is useful to have a large repertoire of action verbs available as we convert goals to objectives, and you may find Table 1.3 helpful in this regard.

1.8   Identifying Course-Level Student Learning Outcomes (SLOs)

While course learning goal statements describe in general terms what we want students to learn, and objectives identify the steps students will take as they move toward those goals, SLOs state what achieving that goal would actually look like as an observable, measurable behavior. Like objectives, learning outcome statements are written in detailed operational terms, but in this case, the language must help us move from what we *hoped* would happen to *proof* of what happened derived from what actually *did* happen. SLOs, then, are explicit statements describing the knowledge, skills, abilities, and attitudes that we want a student to be able to demonstrate at the end (or as a result) of his or her experience in our course that shows us they have achieved our learning goals. Here is an example of an outcome:

> When given an aural exam consisting of listening examples of representative music that have not been studied, a successful learner will be able to identify genre and style.

1.9   Differentiating Between Learning Objectives and Learning Outcomes

Few words in the assessment lexicon are used in more confusing, contradictory ways than the terms *objectives* and *outcomes*. In section 1.4, we distinguished between the two terms in a way that is used in some assessment literature, but the two terms are also used interchangeably in other examples of assessment literature. Because this became so confusing to us, we offer the following to share how *we* came to terms with the terms.

In lay language, an objective is a target to aim for, while an outcome is the conclusion of an action. Thus learning objectives identify what we hope *will* happen, while learning outcomes reflect the reality of what actually *did* happen. Just as one cannot describe what happened until it has in fact happened, so one cannot determine a learning outcome until after the learner has done something to demonstrate their learning (or lack thereof). Thus we identify learning objectives before we teach, and we determine learning outcomes after we teach. Put another way, we teach through objectives, we assess for outcomes.

That said, we recognize that you can identify what you hope will be the outcome. Indeed, many accreditation and assessment programs ask faculty to identify learning outcomes in advance. To accomplish this, you may need to state the outcome in "future" terms—"a student will be able to"—or distinguish between *targeted outcome* and *actual outcome*. The targeted outcome is the predetermined achievement that we hope to see, a hypothesis about what learning will happen, while the actual outcome is the achievement we in fact saw. This satisfies external stakeholders who want to (1) know what we intend to accomplish in our teaching and (2) see evidence of what we actually accomplished in our teaching.

1.10 Crafting a Course Learning Outcome Statement

Learning outcome statements can be as simple as this:

> By the end of this course, a successful learner will be able to list the five major theories or perspectives in psychology.

It is this simpler form that we will use when we present learning outcomes in the LATs.

In our own crafting of learning outcome statements for our courses, however, we find it helpful to identify two components: (1) the *conditions* (the product or performed action) that make the learning visible and (2) the *learning* represented in the action or product. In other words, say "when given x," or "in product x," "a learner will be able to do y." Table 1.4 illustrates.

The LATs in this book have been designed to provide you with an efficient way to establish both conditions and performance for assessing learning outcomes. For example, based on *LAT Best Summary*, your learning outcome statement might be: "In a *Best Summary* essay, successful learners will be able to accurately synthesize and explain in their own words core course concepts."

1.11 Determining Performance Standards for Individuals and the Class as a Whole

Assessing Achievement of Individual Students

We know that individual students in our class will achieve each learning outcome somewhere on a continuum between "didn't achieve it at all" to "mastered it." Thus once we establish what students should be able to do to demonstrate that they have achieved the outcome, it is helpful to identify the standard that represents the acceptable minimum. For example, you might state that on the postcourse exam of a *LAT 1 First Day Final*, a student must be able to answer at least 70% of the questions correctly in order to be deemed as having achieved the learning outcome.

Assessing Achievement at the Course Level

It is also appropriate to apply standards when you are analyzing and reporting aggregated data at the course level. Thus along with the learning outcome statement, you can specify the standard

Table 1.4 The Two Components of a Learning Outcome Statement

Conditions	Performance
When given x,	*a learner will be able to . . .*
When given an aural exam consisting of listening examples of representative music that have not been studied,	a successful learner will be able to identify the genre and style.
When given a case study,	a successful learner will be able to analyze and explain why a particular intervention was or was not effective.

that you believe is a fair overall minimum achievement level for the class as a whole. For example, you might feel that if 70% of the students in your class demonstrate achievement of the outcome, it is fair to say that the assignments and activities you have developed are helping students achieve the outcome. That performance standard is your target class outcome. If, after you have tabulated and analyzed the results, you find that 85% of the students achieved that standard, you may feel celebratory, just as if you find that only 60% of the students achieved it, you may feel disappointed. Examples of learning outcome statements with individual as well as aggregated performance standards are:

- When given an aural exam consisting of listening examples of representative music that have not been studied, a successful student will be able to identify the genre and style.
  Individual Minimum Performance Standard: 70% accuracy required for passing exam and to be deemed as meeting learning outcome.
  Target Class Performance Standard: 75% of students will receive a passing exam score, thereby demonstrating achievement of the learning outcome.
- When given a case study, a successful learner will be able to analyze and explain why a particular intervention was or was not effective.
  Individual Minimum Performance Standard: A minimum of Level 2 on each of the criteria in the assignment's assessment rubric is required to be considered as having achieved the learning outcome.
  Target Class Performance Standard: 60% of students will be able to demonstrate achievement of learning outcome by being ranked at a minimum of Level 2 on each of the criteria in the assignment's assessment rubric.

1.12 Is All the Work Required Worth the Effort?

Identifying your learning goals, determining learning objectives, and crafting learning outcome statements take time and effort. Given the many pressures we face as faculty, is it worth the effort? Truthfully, for some of us, it won't be. However, there are many benefits. Expressing what we want students to learn in assessment language promotes a core principle of a learner-centered course: responsibility for learning is shared between teachers and students because the emphasis is changed from what teachers must cover to what a student should be able to do as a consequence of instruction. This, in turn, benefits students on many levels. Often their anxiety is reduced because they are provided with clear direction, they know what the instructional priorities are, and they perceive that the grading is fair. Students also better understand how your course relates to other courses and to institutional learning goals. This, in turn, can help motivate them to put in the time and energy to learn well because they can more easily see the value in what you are teaching.

Carefully expressing what we want students to learn in assessment language also benefits multiple external stakeholders because course goals, content, and evaluation procedures are consistent, interrelated, and communicated clearly. Furthermore, effectiveness and efficiency are improved because all stakeholders are better able to determine which practices and materials are effective and which are not. In addition, departments and programs can better work together

to create a more coordinated curriculum because the clear, logical instructional structure of each course provides the building blocks required for constructing larger, more complex systems.

Finally, the process of crafting good learning goals, objectives, and outcomes helps us as teachers. On a pragmatic basis, once the initial time and effort has been invested, it can save time and anxiety in grading. Indeed, we can encourage students to do more self-evaluation or peer evaluation because students know in clear, objective terms what is expected of them. Also, expressing what we want students to learn in assessment language helps us gather the information we need more efficiently to provide evidence to a variety of stakeholders on what and how well students in our courses are learning. We can then use this data for multiple purposes ranging from providing feedback to students to gathering information for our professional dossiers. Perhaps most satisfying, though, is the recognition that by participating in an evidence-based cycle of analysis and reflection designed to improve student learning, we are contributing in meaningful ways to the improvement of our profession and the betterment of the world.