Assessing Student Learning

a common sense guide

Linda
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Linda Suskie

second edition
CHAPTER 8

Developing Learning Goals

Some Valuable Ideas You'll Find in This Chapter

- While Bloom's taxonomy is the best-known framework for articulating learning goals, other taxonomies fill in some voids.
- While basic knowledge and conceptual understanding are important, they are less imperative today than thinking skills that use that knowledge and understanding.
- Employers, policymakers, and other higher education audiences increasingly value three skills: communication, information literacy (research and problem solving), and interpersonal skills.
- The most important question to ask when articulating learning goals is, "Why?"
- Well-expressed learning goals minimize fuzzy terms.
- It's okay to have goals that are a bit broad and nebulous, as long as everyone has a common understanding of what they mean.

Assessment begins not with creating or implementing tests, assignments, or other assessment tools but by deciding on your goals: what you want students to learn and why. This chapter discusses why goals are important; the meaning of terms such as goals, objectives, competencies, and outcomes; and how to develop and express learning goals.

Why Are Goals Important?

Imagine that an English professor teaching nineteenth-century poetry asks his students to keep journals in which they reflect on what they've learned as the course progresses. Without clear goals
for the journal, his assignment may be something like, "After every class, jot down your thoughts about what you're learning." With such a vague assignment, his students won't know what to do, and, lacking focus, many won't learn much from the journaling experience. The journal won't be as effective as it would have been with explicit goals that lead to a more purposeful assignment.

Furthermore, with such a vague assignment, it isn't clear how the professor should evaluate the journals. He could evaluate them for writing qualities such as organization, clarity, grammar, or accuracy in reflecting class lectures and discussions. Or he could look for signs that students are developing an increased appreciation of nineteenth-century poetry. Or he could evaluate them in terms of how well students appraise scholarly interpretations of nineteenth-century poetry. Or he could look at how students relate nineteenth-century poetry to other literature, culture, and events of the times. Which of these is the correct way to evaluate the journals? There is no way to tell, because we don't know what the professor wants the students to learn from the journal-keeping experience.

As this example shows, without clear goals, both our students' learning experiences and our assessment of them are ambiguous and unsatisfactory. Our students don't know what to learn, and we don't know what to assess.

The Vocabulary of Goals

Goals, objectives, competencies, learning outcomes, and proficiencies all describe what we want students to learn, but educators don't yet use them consistently. Some of the more common uses of these terms are described here, along with some other terms that people confuse with goals.

Goals state what you, your colleagues, or your college aim to achieve. They can describe aims outside the teaching and learning process as well as within it. Within the undergraduate teaching and learning process, an astronomy professor might have a goal that her students learn about our solar system, your colleagues may have a goal to offer a high-quality educational program, and your college may have a goal to encourage students to engage in community service. Outside the undergraduate teaching and learning process, you may have a goal to complete some research this year, your department may have a goal to sponsor a regional scholarly conference, and your college may have a goal to raise $8 million in alumni gifts.

Outcomes are goals that refer to a destination rather than the path taken to get there—the end rather than the means, the outcome rather than the process. A goal that truly describes an outcome explains why we do what we do. A faculty member's real goal is not that students write a term paper but that they write effectively in their future studies and work. A student activities director's real goal is not to offer a student leadership development program but for students to lead student organizations effectively. A true institutional goal is not to raise $8 million but to increase educational opportunities for deserving students through additional scholarships.

Learning outcomes or learning goals are goals that describe how students will be different because of a learning experience. More specifically, learning outcomes are the knowledge, skills, attitudes, and habits of mind that students take with them from a learning experience.

Objectives can describe detailed aspects of goals. Within the broad goal of understanding our solar system, for example, an astronomy professor might have an objective that her students will know basic facts about each planet. Objectives can also describe the tasks to be accomplished to achieve the goal—the means to the end, the process leading to the outcome. If a goal of the astronomy professor is for students to explain science concepts in writing, her objectives might be for them to write essays, critique drafts of their peers, and maintain a journal in which they reflect on their growth as science writers.

Competencies and proficiencies are terms sometimes used to describe learning outcomes or objectives. Typically they are used to describe skills rather than knowledge, values, or attitudes.

Performance indicators are quantitative measures of overall student performance or other aspects of college performance. If a learning goal is that students write effectively, for example, the performance indicator might be the percentage of students who earn at least a minimally acceptable score on a rubric or test. Performance indicators are discussed in Chapter One.

Standards and benchmarks are the specific targets against which we gauge success in achieving an outcome. For a learning goal that students will write effectively, we might set a standard that 95 percent of our students earn at least a minimally acceptable score on a rating scale or rubric. Or we might set a benchmark that our students score, on average, above the average of students at peer institutions on a published writing test. Chapter Fifteen discusses standards and benchmarks.

Frameworks for Learning Goals

The task of identifying learning goals can seem overwhelming, particularly when establishing goals for a broad program, a general education curriculum, or a college. Faculty and staff who have
never before considered or collaborated on articulating learning goals may find the process especially daunting. Understanding some frameworks for learning goals that group them into a few broad categories may be a helpful starting point.

The best-known framework, popularly known as Bloom’s taxonomy (Bloom, 1956), has three domains of learning: cognitive, affective (attitudinal), and psychomotor (physical). The cognitive domain has six progressive levels of knowledge and intellectual skills: knowledge, comprehension, application, analysis, synthesis, and evaluation. A recent update of Bloom’s taxonomy (Anderson & Krathwohl, 2001) reverses the synthesis and evaluation categories and changes “synthesize” to “create.”

While Bloom’s taxonomy is the best-known framework, others have filled in some voids and brought to the forefront some important goals not emphasized in Bloom’s. Arthur Costa and Bena Kallick (2000) promote “habits of mind” such as persisting, thinking flexibly, and striving for accuracy. Robert Marzano, Debra Pickering, and Jay McTighe (1993) emphasize additional thinking skills such as organizing skills. The learning goals in various frameworks may be summarized into three categories, each discussed below:

- Knowledge and conceptual understanding
- Thinking and other skills
- Attitudes, values, dispositions, and habits of mind

Knowledge and Conceptual Understanding

Knowledge and conceptual understanding include remembering, replicating a simple procedure, and defining, summarizing, and explaining concepts or phenomena.

Examples

- Explain how to access the Internet from computers in campus labs.
- Summarize the distinctive characteristics of a particular novelist.
- Understand each component of the scientific method.

Knowledge and conceptual understanding are important outcomes of many courses and programs, but today they are less important than they were a generation or two ago. One reason is that the amount of knowledge available to us has exploded.

We know, for example, far more about the building blocks of matter than we did a generation ago. There is more history to understand than when our parents went to school, and in the United States, the study of history has broadened from a Eurocentric model to a global one. The number of scholarly journals in almost every field has grown exponentially. Today there are so many important concepts that we can’t expect students to remember them all.

Coupled with the explosion of knowledge is our increasingly easy access to it through libraries, bookstores, newsstands, and, most significant, the Web. Is it so important to remember a formula, date, or vital statistic when it can be looked up effortlessly? With today’s easily accessible information, educators increasingly believe that we should change our focus from remembering facts and concepts to learning how to find them, analyze them, use them appropriately, and appreciate their meaning and value.

Furthermore, our knowledge base will continue to expand and evolve. Today’s students will someday need information that hasn’t yet been conceived and insight that hasn’t yet been drawn, rendering obsolete some of the information we now teach. Should we focus on having students remember material that may soon be outdated or irrelevant? Or should we focus on developing the thinking skills they’ll need to master new concepts on their own, after they’ve left college?

Finally, as we understand better how people learn, we are realizing that much of what students memorize is committed to short-term memory and quickly forgotten. Imagine how your students would do if you popped their final exam on them just a few months later. How much would they remember from the first time they studied for it? Probably not much. So is it worth spending time teaching material that’s so quickly lost? Or should we focus instead on developing skills and attitudes that will last a lifetime, such as the ability to write well, analyze the difference between two theories, or appreciate American folk music?

Because of all these factors, educators are increasingly emphasizing thinking and other skills more than knowledge and simple understanding. Does this mean that students shouldn’t memorize anything anymore? Absolutely not! We wouldn’t want to fly in a jet whose pilot has to look up the meaning of that flashing light as the plane goes into a nosedive. We wouldn’t want to be operated on by a surgeon who has to pause to read up on how to stop that excessive bleeding. Students will always need to remember and understand certain fundamental concepts. But today we expect college students to see facts and concepts as well as understand them.
Thinking and Other Skills

Many kinds of thinking skills are discussed in this section. As you review them, keep in mind that they are not discrete. It would be hard, for example, to think of someone engaged in sound evaluation who does not bring analysis skills into play.

Application

Application is the capacity to use knowledge and understanding in a new context. It includes the abilities to understand cause-and-effect relationships, understand the meaning of logical propositions, criticize literary works, and apply scientific principles to research problems when these relationships, propositions, works, and problems are new to the student. Many mathematics word problems require application skill.

Examples

Locate online resources on a particular topic or issue.
Apply scientific or economic principles to everyday life.

Analysis

Analysis is the capacity to break a complex concept apart to understand the relationships of its components. Students who can analyze can identify the elements, relationships, and underlying principles of a complex process. Analysis is not merely understanding the relationships of components of a process or concept explained in class; that would be simple comprehension. Students who can analyze can understand the structure of things they haven’t seen before. They can think holistically, make a case, discover the underlying principles of a relationship, and understand organizational structure. They can integrate their learning, relating what they are learning to what they already know.

Examples

Explain chemical reactions not explicitly introduced in prior study.
Explain the impact of the Korean War on U.S.–East Asian relations today.
Analyze errors.
Compare and contrast perspectives and values.
Explain why a particular research paper is structured the way it is.

Evaluation, Problem-Solving, and Decision-Making Skills

These terms have more in common than not. They all refer to skill in making informed judgments about the merits of something the student hasn’t seen before. They include the abilities to conduct research, make appropriate choices, solve problems with no single correct answer, and make and justify persuasive arguments. They are not merely understanding and reflecting arguments that have been presented in course work; that would be simple comprehension.

Examples

Judge the effectiveness of the use of color in a work of art.
Evaluate the validity of information on a particular Web site.
Research, identify, and justify potential careers.
Choose the appropriate mathematical procedure for a given problem.
Identify an audit problem in a financial statement, and recommend ways to address it.

Synthesis and Creativity

Synthesis is the capacity to put together what one has learned in a new, original way. It includes the abilities to theorize, generalize, reflect, construct hypotheses, generate new ideas and new ways of viewing a situation, invent, and suggest alternatives.

Examples

Write a poem that uses imagery and structure typical of early-nineteenth-century American poets.
Theorize what is likely to happen when two chemicals are combined, and justify the theory.
Design and conduct a research study.
Design a community service project.

Creativity is a concept whose meaning lacks popular consensus. Jonathan Plucker, Ronald Beghetto, and Gayle Dow (2004) have defined creativity as “the interaction among aptitude, process, and environment” by which someone produces “a perceptible product that is both novel and useful as defined within a social context” (p. 90). It’s likely that many people think of creativity as including not only the ability to synthesize but also the abilities to be flexible, take intellectual risks, and be open-minded to new ideas.
Examples
Conceive of original, unorthodox solutions to a problem.
Recognize that one’s vision can appropriately exceed one’s capacity.
Recognize and celebrate not knowing.

Critical Thinking
Critical thinking is another widely used term whose meaning lacks popular consensus. Critical thinking skills can include many of the thinking skills described in this chapter, including analysis, synthesis, evaluation, problem solving, and some of the habits of mind discussed below. Critical thinking may also include the capacities to seek truth, clarity, and accuracy; distinguish facts from opinions; and have a healthy skepticism about arguments and claims. If critical thinking emerges as a potential learning goal, spell out the kinds of thinking skills it encompasses in your particular situation.

Information Literacy
Information literacy (Association of College and Research Libraries, 2000) is often erroneously thought of as library research skills. It is a much broader set of skills (Table 8.1), reflecting today’s reality that much research takes place outside the traditional college library. Information literacy includes many of the (critical) thinking skills discussed in this chapter, and some might consider it synonymous with research or problem-solving skills.

<table>
<thead>
<tr>
<th>Table 8.1. What Is Information Literacy?</th>
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<tbody>
<tr>
<td><strong>Information literacy includes the capacity to:</strong></td>
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<tr>
<td>Recognize the need for information to answer a question or solve a problem.</td>
</tr>
<tr>
<td>Identify what information is needed to answer the question or solve the problem.</td>
</tr>
<tr>
<td>Find that information, whether through traditional library research, online sources, professional manuals, colleagues, original research, or other appropriate sources.</td>
</tr>
<tr>
<td>Evaluate the information critically for credibility and relevance to the question or problem.</td>
</tr>
<tr>
<td>Use the information to answer the question or solve the problem.</td>
</tr>
<tr>
<td>Use the information legally and ethically, citing and acknowledging the work of others accurately.</td>
</tr>
</tbody>
</table>

Other Skills
Performance skills are physical skills such as the abilities to operate equipment, manipulate a tool, wield a paintbrush, hit a softball, or dance gracefully.

Examples
- Hold and play a violin in proper position.
- Use fitness equipment safely, minimizing the risk of injury.

Interpersonal skills include the abilities to listen, work with people from diverse backgrounds, lead a group, and participate as an effective team member.

Examples
- Lead a group to a consensus on a plan of action.
- Paraphrase accurately the ideas that others express.
- Listen and reflect empathetically to a client.

Attitudes, Values, Dispositions, and Habits of Mind
Attitudinal goals include appreciation, integrity, character, enjoying and valuing learning, and becoming more aware of one’s values, attitudes, and opinions and their evolution. Richard Shavelson (2007) has used the phrase “personal and social responsibility (PSR) skills” to characterize many of these traits. Chapter Twelve discusses assessing attitudes, values, dispositions, and habits of mind.

Examples
- Be intellectually curious.
- Appreciate the merits and value of a subject or discipline.
- Appreciate the perspective of people from backgrounds different from your own.
- Choose ethical courses of action.

Metacognition
Metacognition is learning how to learn and how to manage your own learning by understanding how you learn, thereby preparing for a lifetime of learning. Metacognition includes the traits in Table 8.2.

Because knowledge is growing at an exponential pace, there is increasing recognition that we must prepare students for a lifetime of learning, often on their own, making metacognition an increasingly valued skill.
today's college graduates, regardless of major, should have the three capabilities described in Table 8.3. While general education curricula often address these skills, students need to develop them from a disciplinary perspective as well. A first-year composition course, for example, won’t teach biology, psychology, or business students how to write in their discipline; faculty in the discipline need to do that.

Integrated Learning Goals Across Venues and Levels

Colleges, programs, and courses always fit into a larger context. A course is part of a program or general education curriculum, the program is part of a college or university, and the college or university is part of a global society in which its students will live, work, and perhaps continue their studies. Chapter One notes the importance of integrating goals among venues and levels of student learning opportunities so that students can benefit from integrated, collaborative learning experiences. Table 8.4 gives examples of goals at various venues and levels that address research and problem-solving skills. In this example, the learning goals for a student development program,

<table>
<thead>
<tr>
<th>Table 8.4. Examples of Interrelationships of Goals Among Venues and Levels</th>
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</thead>
<tbody>
<tr>
<td><strong>Venue or Level</strong></td>
</tr>
<tr>
<td>Institutional</td>
</tr>
<tr>
<td>Student development program: Greek life</td>
</tr>
<tr>
<td>General education</td>
</tr>
<tr>
<td>Academic program: English</td>
</tr>
<tr>
<td>Course: Shakespeare’s Tragedies</td>
</tr>
</tbody>
</table>

Table 8.2. What Is Metacognition?

Use efficient learning techniques.
Discuss and evaluate your own problem-solving strategies.
Critically examine and evaluate the bases for your arguments.
Correct or revise your reasoning or arguments when self-examination so warrants.
Form efficient plans for completing work.
Evaluate the effectiveness of your actions.

Examples

Develop a personal study strategy that makes the most of your learning style.
Identify the strengths and weaknesses of your completed work.

Productive Dispositions or Habits of Mind

Habits of mind (Costa & Kallick, 2000) can include the capacities to work independently, set personal goals, persevere, organize, be clear and accurate, visualize, and be curious.

Examples

Develop and use effective time management skills.
Follow directions correctly.
 Appreciate negatives and failures as opportunities to learn and discover choices.

Which Learning Goals Are Most Important and Valued Today?

While every course, program, and college can and should have unique goals, faculty, administrators, employers, policymakers, and other higher education audiences increasingly agree that
the general education curriculum, and an academic program all support the institutional goal. In fact, in this example, the institutional and general education learning goals are identical, as they often are at colleges and universities. Also, in this example, the course goal supports both the academic program and general education curriculum goals.

Although interrelated goals are an important way to ensure curricular coherence, it is not practical to expect absolutely lock-step relationships among goals at every level and in every venue. An institutional goal of understanding diverse cultures could be supported by goals in many areas but perhaps not by the mathematics program. A program goal to write effectively in the discipline might be supported by goals in several but not all courses in the program. Exhibit 7.1 includes examples of goals that are not addressed in every component of a program.

Identifying Potential Learning Goals

Because learning goals should be integrated as appropriate across venues and levels, they should be developed not in isolation but as the result of research, reflection, and informed collaborative discussion.

Research

Rather than start with a blank slate, it makes sense to collect information on potential learning goals from internal and external resources (Table 8.5).

<table>
<thead>
<tr>
<th>Table 8.5. Internal and External Resources for Identifying Potential Learning Goals</th>
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<tbody>
<tr>
<td><strong>Internal Resources</strong></td>
</tr>
<tr>
<td>Your college’s mission statement, vision statement, and strategic goals</td>
</tr>
<tr>
<td>Syllabi of current courses, especially capstone experiences (Chapter Seven)</td>
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<tr>
<td>Transcripts of recent graduates (Chapter Seven)</td>
</tr>
<tr>
<td><strong>External Resources</strong></td>
</tr>
<tr>
<td>Goals or standards espoused by relevant disciplinary associations and accreditors</td>
</tr>
<tr>
<td>Surveys or interviews of prospective employers of graduates of your college or program</td>
</tr>
<tr>
<td>Admissions criteria for academic programs your students pursue after program completion</td>
</tr>
<tr>
<td>Greater Expectations: A New Vision for Learning as a Nation Goes to College (Association of American Colleges and Universities, 2002)</td>
</tr>
<tr>
<td>Learning Outcomes for the Twenty-First Century (Wilson, Miles, Baker, &amp; Schoenberger, 2000)</td>
</tr>
<tr>
<td>Equipped for the Future: Content Standards (Stein, 2001)</td>
</tr>
</tbody>
</table>

Reflection

Teaching is fundamentally a personal process, so faculty and staff should have time to reflect on their own goals as well as research what others are doing. Faculty and staff often have an implicit sense of what they want students to learn. Asking them to complete the Teaching Goals Inventory (Angelo & Cross, 1993) may help them verbalize the main things they aim to accomplish in each course or program they teach. Chapter Nine offers some additional suggestions to help faculty and staff who struggle to articulate their goals and grading criteria.

Collaboration

Students learn more effectively when their learning experiences are purposeful, coherent, and integrated (Chapter One). This can happen only when faculty and staff collaborate to articulate key student learning outcomes.

Conversations on learning goals may be difficult, especially when faculty are used to working independently. But these conversations can also be one of the most invigorating and rewarding aspects of an assessment effort, because they address the heart of faculty and staff work: teaching and learning. Chapter Five notes the importance of emphasizing and respecting the many things that faculty and staff already do. Focus these conversations, then, on identifying existing common ground.

Begin by compiling and sharing the results of any research or reflection on learning goals on a handout or large chart for all to see. With this information in hand, faculty and staff can discuss questions such as those in Table 8.6.

Consensus

What if faculty and staff cannot agree on key learning goals for a course, program, or general education requirement? There’s no law that 100 percent agreement is needed in order to move forward, and several techniques can help gauge consensus, make decisions, and proceed. One is simply to vote, let the majority rule, and move on. Another is to break the faculty and staff into small groups and ask each group to identify perhaps three goals that everyone in the group agrees are important. The groups can then share their goals and identify common goals across groups. A third technique, shown in Table 8.7, is the Delphi method (Hsu & Sandford, 2007).
Table 8.6. Examples of Discussion Topics Regarding Learning Goals

What is this course or discipline all about? What do we value about our discipline? What are the most important things students learn in this course or program? Why are those things important?

What does our disciplinary association (or major authorities in our discipline) think students should learn?

Why do we offer or require this course, program, or general education requirement? Why is it important that students study this? How do we want them to prepare for or enrich whatever they do after graduation?

What do we expect of students in this course, program, or general education requirement?

What do we want all students to get out of this program or general education requirement, regardless of the particular course, track, or professor they elect?

How do all these courses relate to other courses in this program or general education curriculum? How does this program or general education requirement relate to other disciplines that students may be studying?

What do we want students who successfully complete this course, program, or general education requirement to know or be able to do five or ten years after graduating?

What do our students do after they graduate? What are the most important things they need to succeed in those pursuits?

What makes our graduates successful? What makes them attractive to potential employers, graduate programs, and the like?

If our program prepares students for careers, what knowledge, skills, and attitudes do employers look for?

Table 8.7. The Delphi Method for Achieving Consensus

1. Create a list of all identified potential learning goals for a course or program.
2. Distribute the list to faculty and staff members, and ask each to check off those goals that he or she thinks should be one of the key goals of the course or program. Sometimes it is agreed that everyone will vote for no more than a certain number of goals, such as six or eight.
3. Collect the lists, tally the checkmarks, and share the results with faculty and staff.
4. Strike goals with no votes. (The group may also agree to strike goals with just one or two votes.)
5. Sometimes, a few goals will clearly emerge as the top vote getters, and the group will agree to focus on them, ending the process.
6. If consensus cannot be reached after the first round, redistribute the (possibly abbreviated) list with the initial results noted, and ask faculty and staff to vote again. Sometimes it is agreed again that everyone will vote for no more than a certain number of goals.
7. Again, collect, tally, and share the lists. Human nature is such that few people will persist in voting for a goal supported by few others, so consensus on a few manageable goals is usually reached by this point. If not, the cycle is repeated until consensus is achieved.

Good Ways to Express Learning Goals

Writing effective goals is an art that comes easily to some people and remains a struggle for others. Goals are also more easily crafted for some courses and programs than for others. As with all other aspects of assessment, consider learning goals a work in progress. Be prepared to refine them after you implement them and see how well they work. The following suggestions will help you get started.

Focus on the End, Not the Means, by Asking Why

Effective learning goals refer to a destination rather than the path taken to get there—the end rather than the means. Ask yourself what students should be able to do after they have successfully completed your course or program, not the tasks they are to do while in your course or program.

If faculty or staff find it hard to make the leap from articulating processes to articulating outcomes, encourage them to ask, "Why? Why do we ask students to write a research paper? Why do we require five lab reports?" The answers, which are the true goals, can vary considerably. Faculty might ask students to write a research paper, for example, to improve their skill in:

- Conducting original research in the discipline
- Conducting library research in the discipline
- Understanding and interpreting the published research of others
- Writing in the discipline
- Critical thinking and analysis

Understanding the true goal of the assignment helps create a more effective assignment and evaluate it more fairly and appropriately. A faculty member who wants students to learn how to conduct library research, for example, might ask them to prepare an annotated bibliography rather than a full-blown research paper and evaluate it more in terms of library research skills than writing quality. A faculty member who wants students to learn how to write in the discipline might ask students to write a research proposal rather than a full-blown research paper and evaluate it more in terms of writing skills.

Clarify Fuzzy Terms

Learning goals are sometimes phrased using broad, nebulous terms such as these:

- Students will learn . . .
- Students will know . . .
- Students will understand . . .
- Students will become aware of . . .
- Students will appreciate . . .
• Students will think critically.
• Students will write proficiently.
• Students will demonstrate knowledge, skill, proficiency, or understanding of . . .

Vaguely stated learning goals like these can lead to confusion. Consider a goal that students will "understand basic concepts about our solar system." Astronomy professors may have differing opinions about what constitutes basic concepts. Are we talking about basic facts about each planet or also theories about how the solar system was created? The faculty may also have differing opinions about what it means to "understand" those basic concepts. Does this mean memorizing basic facts? Or does it mean using information about our solar system to speculate about the characteristics of other solar systems?

If a learning goal isn't clear to us, it certainly won't be clear to students. They'll have difficulty figuring out what and how to learn, and we'll have difficulty coming up with an appropriate assessment. Clarifying fuzzy terms gives faculty, staff, and students a clearer common understanding of what to teach, what to learn, and what to assess. Restating, "Think critically," as "Analyze and evaluate arguments," for example, helps everyone understand what they are to do.

Learning goals are developed for more than one audience, of course. Sometimes they have a public relations purpose as well as a role in the teaching and learning process. "Think critically" and "communicate effectively" are the kinds of statements that parents and other public audiences want to see in mission statements, brochures, and Web sites, even if they are not clear. If you need a fuzzy statement for these purposes, it's fine to "translate" it into clearer terms for teaching, learning, and assessment purposes.

Aim for Goals That Are Neither Too Broad Nor Too Specific

While fuzzy goals are problematic, so are goals that are too specific, because "the price of precision is the narrowness of scope" (Shulman, 2007, p. 24). The best learning goals thus fall between these two extremes:

Too vague: Students will demonstrate information literacy skills.
Too specific: Students will be able to use the college's online services to retrieve information.
Better: Students will locate information and evaluate it critically for its validity and appropriateness.

There is a wide continuum of acceptable specificity. Some faculty and staff find that relatively broad statements of learning goals work best for them, while others find that relatively specific statements are more useful.

Use Concrete Action Words When Possible

Fuzzy, vague goals can be avoided by stating outcomes using concrete action words that describe in explicit, observable terms what students can do after they've learned the material. After completing the astronomy professor's solar system unit, for example, perhaps her students will be able to describe the key characteristics of each planet. Perhaps they will be able to create a scale model of the solar system. Perhaps they will be able to explain why each planet except Earth cannot support human life.

Concrete action words help students understand what we want them to learn. They also make assessment easier, as they practically dictate what the assessment will be (Table 8.8).

But occasionally concrete action words make learning goals too specific. Translating "communicate effectively in writing" into action words would result in a long list of the many characteristics of effective writing—a list so long as to be unwieldy. With so much detail, the forest—the major learning goal—may be lost among the trees of specific action-word outcomes. In this kind of situation, it may be more useful to express a learning goal in relatively vague terms such as "know," "understand," "become aware of," or "appreciate" rather than action words. Then clarify the goal by developing an accompanying rating scale or rubric (Chapter Nine) that lists, say, the key characteristics of effective writing.

Table 8.9 provides examples of effectively expressed learning goals that use action words and are neither too broad nor too specific.

<table>
<thead>
<tr>
<th>Table 8.8. Examples of Action-Word Goals and Corresponding Assessments</th>
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</table>
| **Action-word goal:** Describe the key characteristics of each planet.  
**Assessment:** Write short descriptions of the key characteristics of each planet.  
**Action-word goal:** Create a scale model of the solar system.  
**Assessment:** Create a scale model of the solar system.  
**Action-word goal:** Explain why each planet except Earth cannot support human life.  
**Assessment:** Write a short explanation of why each planet except Earth cannot support human life. |
Table 8.9. Examples of Effectively Expressed Learning Goals

<table>
<thead>
<tr>
<th>Subject</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology</td>
<td>Make appropriate references and deductions from biological information.</td>
</tr>
<tr>
<td>Business Management</td>
<td>Develop graphic, spreadsheet, and financial analysis support for positions taken.</td>
</tr>
<tr>
<td>Chemistry</td>
<td>Design an experiment to test a chemical hypothesis or theory.</td>
</tr>
<tr>
<td>Communication Studies</td>
<td>Systematically analyze and solve problems, advocate and defend one's views, and refuse opposing views.</td>
</tr>
<tr>
<td>Earth Science</td>
<td>Analyze the surface and subsurface (three-dimensional and four-dimensional) geological characteristics of landforms.</td>
</tr>
<tr>
<td>English</td>
<td>Present original interpretations of literary works in the context of existing research on these works.</td>
</tr>
<tr>
<td>Environmental Science</td>
<td>Critically evaluate the effectiveness of agencies, organizations, and programs addressing environmental problems.</td>
</tr>
<tr>
<td>Health Care Management</td>
<td>Apply basic problem-solving skills along with health care financial management knowledge to develop recommendations related to the financial issues confronted by a health care organization.</td>
</tr>
<tr>
<td>Medieval and Renaissance Studies</td>
<td>Write with clarity, unity, coherence, and correctness.</td>
</tr>
<tr>
<td>Metropolitan Studies</td>
<td>Conduct and present sound research on metropolitan issues.</td>
</tr>
<tr>
<td>Speech-Language</td>
<td>Use appropriate interpersonal qualities and professional characteristics of responsibility, empathy, and openness to self-exploration during interactions with peers, academic and clinical faculty and staff, and clients.</td>
</tr>
<tr>
<td>Pathology/Audiology</td>
<td>Use voice, movement, and understanding of dramatic character and situation to affect an audience.</td>
</tr>
<tr>
<td>Theater</td>
<td>Use gender as an analytical category to critique cultural and social institutions.</td>
</tr>
</tbody>
</table>

Time to Think, Discuss, and Practice

1. A professor has asked his students to write a paper in which they are to "discuss" an historical event. Under what circumstances would this assignment assess only simple understanding of the event? Under what circumstances would this assignment assess a thinking skill? What thinking skills might it assess?

2. The Landisville College faculty have agreed that they would like to include the following aims, taken from the Teaching Goals Inventory (Angelo & Cross, 1993) as goals of their general education curriculum. Restate these aims so that they meet the characteristics of well-expressed goals discussed in this chapter:
   - Develop analytical skills.
   - Prepare for transfer or graduate study.
   - Develop aesthetic appreciation.

3. Dover College faculty are designing a first-year seminar to help students develop the skills and dispositions they need to succeed in college. They have decided that students need to develop critical thinking skills, but they are not sure what this means, how to teach it, or how to assess it.
   - What critical thinking skills do you think students most need to succeed in today's colleges? Try to identify two or three such skills.
   - For each critical thinking skill you've identified, come up with one suggestion for an assignment that students in the seminar might complete to help them develop that skill.

4. Write a learning goal for students in a program in which you teach or are enrolled that would focus on developing evaluation, problem-solving, or decision-making skills.

Recommended Readings

The following readings are recommended along with the references cited in this chapter.


