Learner-Centered Assessment on College Campuses
King’s College Faculty. (1997). King’s College: The core curriculum and assessment. Wilkes-Barre, PA: King’s College.

Setting Direction with Intended Learning Outcomes

| Badly needed . . . is a set of agreements on what self-regulation in higher education ought to be fundamentally about . . . One is the community’s own assurance of academic quality. This means first and foremost a predominant focus on the assessment of outcomes and results . . . Focusing on outcomes as the centerpiece of recognition also forces us to address (and eventually develop a satisfactory answer to) legitimate questions about the common meaning of academic awards given in common. What the baccalaureate really is supposed to mean in terms of knowledge, skills, or other attributes is a question increasingly asked by both society and ourselves. It is a question that deserves an answer and it is one that in the long run we cannot duck (Ewell, 1994, p. 29). |

Making Connections
As you begin to read the chapter, think about the ideas and experiences you’ve already had that are related to intended learning outcomes . . .

- What are the essential features of your institution and how do they help shape the ideas, values, and attitudes of your students?
- What are the essential features of your academic program and how do they help shape the ideas, values, and attitudes of your students?

Continued
Making Connections  Continued

- What is unique about your institution and how are your graduates different because of that uniqueness?
- What is unique about your academic program and, as a result, what unique qualities do your graduates possess?
- What should graduates of your academic program know, understand, and be able to do when they leave the institution?
- How do you as a faculty member contribute to the development of the skills and abilities of your program’s graduates?
- What else do you know about intended learning outcomes?
- What questions do you have about intended learning outcomes?

Answering the questions in Making Connections is the first step in creating the type of learner-centered environment discussed in Chapters 1 through 3. It is also the first step in helping an institution fulfill its teaching mission effectively. Students change in many ways during their college years. Their ability to think and reason is affected by the college experience (Baxter Magolda, 1996; King & Kitchener, 1994), as are their attitudes, values, aspirations, and self-concepts (Astin, 1993). Considerable research indicates that a variety of environmental factors influence the type of change that occurs, including factors associated with the curriculum, pedagogy, peer group interactions, and faculty attitudes toward students (Astin, 1993). Being clear about the desired outcomes of college can help faculty structure experiences that will lead to those outcomes.

INTENDED LEARNING OUTCOMES

Focusing on student learning requires that we specify the goals or intended outcomes of the experiences students have at our institutions. Intended learning outcomes can be written at a variety of levels, for example, for

- a course,
- an academic program, or
- an entire institution.

Intended learning outcomes describe the kinds of things that students know or can do after instruction that they didn’t know or couldn’t do before. Formulating such outcomes may require a change of mindset.

For example, if asked, “How would you describe your current teaching goals?” most of us would offer responses similar to the following:

- to provide the best course I can
- to provide a stimulating environment for learning
- to provide opportunities for students to experience the central ideas of my field.

Notice the focus of these goals. Who is the implied key player? Who will provide the best course, the stimulating environment, and the opportunities to experience central ideas? The professor. That’s logical in one sense because our goals are important and worth pursuing. However, in learner-centered instruction, we also need to focus on learners in goal-setting. In other words, we need to ask, “If I provide the best possible course for students, creating a stimulating environment for learning with opportunities to explore central ideas,

- What will my students know?
- What will they understand?
- What will they be able to do with their knowledge at the end of the course?”

Our answers to these questions constitute our intended learning outcomes.

Learning outcomes for a course are typically developed by the professor or professors teaching the course. Developing learning outcomes for an institution or an academic program is a task for faculty to complete collectively, and it is a task that takes time and deliberation.

We may use a variety of strategies to develop learning outcomes. For example, as we work together with our colleagues to develop outcomes for an academic program, we may find it helpful to examine existing course descriptions and syllabi in order to review what is currently being taught in our program. Searches of the literature and the World Wide Web can provide us with the learning outcomes of programs at other institutions [e.g., see the University of Colorado outcomes at http://www.colorado.edu/outcomes/ or a list of other internet resources at http://www2.acs.ncsu.edu/UAPA/survey/resource.htm (Schechter, 1999)]. Rogers (1991) suggests that reports from national commissions and professional associations in various disciplines may include desirable learner outcomes. Or we can simply brainstorm about our own ideas and values about student learning.
Reflections
As you create your own meaning from the ideas in this section, begin to think about...

- How familiar am I with the concept of intended learning outcomes? How comfortable am I with this concept?
- What are my intended learning outcomes? Have I written them down or are they just in my head?
- What are some of the desired learning outcomes that I want students in my program or my courses to achieve?
- Under what circumstances have I discussed learning outcomes with my colleagues?
- What learning outcomes are considered important in my discipline?

BENEFITS OF FORMULATING INTENDED LEARNING OUTCOMES

Three benefits of formulating intended learning outcomes are shown in Figure 4-1. Each is discussed below.

**Intended learning outcomes form the basis of assessment at the course, program, and institutional levels**

As discussed in Chapter 1, assessment refers to our efforts to evaluate the learning component of all academic and nonacademic programs on campus. We defined assessment as the "process of gathering and discussing information from multiple and diverse sources in order to develop a deep understanding of what students know, understand, and can do with their knowledge as a result of their educational experiences; the process culminates when assessment results are used to improve subsequent learning."

**Intended learning outcomes**

- form the basis of assessment at the course, program, and institutional levels.
- provide direction for all instructional activity.
- inform students about the intentions of the faculty.

**FIGURE 4-1 Benefits of Formulating Intended Learning Outcomes**

The fundamental question that drives a clearly focused assessment program is a simple one: "Have our graduates learned what we intend them to learn?" This is a learner-centered question, which implies the following:

- As program faculty, we have intentions about what students in the program should learn.
- As program faculty, we develop collective expressions of our intentions in statements of intended learning outcomes.
- As program faculty, we develop curricula and instructional experiences in order to ensure that students have opportunities to learn what we intend.
- Students have experienced learner-centered instruction throughout their years at the institution.

To the extent that our instruction is learner-centered, we can assess students in our courses in ways that help students learn while they are being assessed. Well-designed course assessments provide feedback on our important intended outcomes at every step along the way. If the intended outcome of a program is that students critically analyze and interpret information, then during the program, students must participate in assessments that require the critical analysis and interpretation of information. If the intended outcome is that students understand and are able to apply fundamental principles of the discipline, then students must participate in assessments that require the application of those principles.

For example, Julian (1996) describes the way in which eight intended learning outcomes were used in the Speech Communications Department at the University of Tennessee, Knoxville, to design a comprehensive assessment approach in a newly designed capstone course for majors. Faculty developed a matrix in which they mapped eight learning outcomes (write clearly, effectively; speak effectively, intelligently; work constructively in groups; make reasoned decisions; use the library effectively; critically evaluate what is read; sketch rhetorical history and theories; understand theories and perspectives) onto six different assessments (a symposium speech, abstracts, an annotated bibliography, a final paper, an oral critique, and midterm/final exams). All but two of the outcomes were assessed by two or more assessments. This approach gave a clear focus to both the course and the assessment process.

The feedback students receive from assessments should deal directly with the learning to be acquired, whether it be knowledge or skills. In this way, assessments will result in feedback that learners can use, not only to know how well they are doing, but also to improve their performance. If students receive constant feedback that they can use throughout the program, they should perform well on both course and program assessments.
This may be a new view of assessment for many of us because our institutions make minimal demands on us in the area of assessment. Faculty members are required only to submit a final grade for each student. Grades are needed for bureaucratic reasons only—to certify a student’s completion of a course and to indicate a student’s general level of achievement in the course. In other words, the assessment represented in the grade is used to monitor students’ levels of achievement. Although the administration undoubtedly assumes that grades are based on the collection of assessment data throughout a course, the collection of data itself is not really required by the institution.

In this book, we contend that the bureaucratic or monitoring aspects of assessment should be secondary to the instructional, diagnostic aspects. For learning to occur in a program, assessments must be employed primarily to give students feedback they can use to improve their performance. The individual professor’s intended learning outcomes outline the knowledge, abilities, and skills on which assessments should be based. When assessments measure intended outcomes, students learn better, particularly when they know what the outcomes are.

The benefits of basing assessments on the individual professor’s learning outcomes can extend well beyond the individual student. When the professor’s goals reflect the intended outcomes developed collectively by faculty at the academic program and institutional levels, assessment that takes place within a course can enhance the effectiveness of the program and of the institution in fulfilling their teaching missions. The teaching function of the institution becomes an effective system of interrelated parts in which the nature and quality of each faculty member’s assessment techniques affect the nature and quality of student learning, whether it is assessed at the course, program, or institutional levels.

**Intended learning outcomes provide direction for all instructional activity**

Because intended learning outcomes form the basis for ongoing assessment, they also form the basis for planning and implementing instruction each time a course meets. Knowing the characteristics that an institution’s faculty desire in all graduates of the institution helps program faculty know, in part, what students in their program should be like when they complete it. Knowing what students are expected to achieve at the end of their program helps individual faculty members decide, in part, what students should achieve at the end of each course. In turn, knowing what students are expected to achieve at the end of a course helps us decide what students should achieve at the end of each section of the course, or indeed, at the end of each class period.

In other words, a learner-centered approach to teaching helps us develop a new mindset as we think about and plan our courses. No longer do we prepare courses or lessons by asking, “What material do I want to cover?” Rather, the organizing question becomes, “What do I want students to learn in this course?” or “What do I want students to learn today (or this week)?”

Answering these questions leads us to consider what content should be covered during a particular time period. It also prompts us to consider the ways in which students should be able to use the content. This, in turn, leads to a consideration of the kind of experiences students must have in the course or during the class period in order to be able to know and do what we expect.

**Intended learning outcomes inform students about the intentions of the faculty**

Perhaps the most important role of intended outcomes is to reveal to students the intentions of the faculty. When students know the goals of an institution, an academic program, or a course, they are able to make more informed decisions about whether the institution, program, or course will meet their needs. They are also in a better position to profit from the experiences they have in the settings they choose.

King (1999) points out that, for students, attending college is like putting together the pieces of a jigsaw puzzle without having the picture on the box to guide them. In her metaphor, the puzzle pieces are students’ many college experiences, both in and outside courses. The picture on the box is the kind of person we hope our students become as revealed in our intended learning outcomes.

Clearly, for both educational and ethical reasons, we need to share this picture with our students and explicitly communicate the knowledge, skills, and attitudes we hope they will acquire as a result of the collegiate experiences. And as we go along, we need to ask them to look at this picture from different angles, in different lights, and from among different groups of people. We should also prepare them to revisit the question of the type of person they wish to become and the type of life they wish to lead (p. 3).

Thus, it is important for students to know our intended learning outcomes, and it is important for us to know theirs. In a learner-centered environment, we should seek to know students’ goals so that we can help them achieve them within the context of the course or program.

The intended learning outcomes of the institution or program can be revealed to students in documents such as the catalog or other admissions material. The intended outcomes of a course should always be included in
course syllabi that are distributed to students at the beginning of the course. Sharing outcomes helps students develop a sense of direction as they participate in class, study, and complete assignments. Learning outcomes can also serve as a basis for ongoing self-assessment as the course develops. Students can review the outcomes, asking themselves whether or not they have achieved them.

Reflections
As you create your own meaning from the ideas in this section, begin to think about...

- What would I have to do differently if intended learning outcomes formed the basis of assessment in my courses?
- What would I have to do differently if intended learning outcomes formed the basis of all instructional activity in my courses?
- How would my students react if I shared with them a list of my intended learning outcomes?
- How would my students react if I asked what they hoped to learn from the course?

Characteristics of Effective Intended Learning Outcomes

Figure 4-2 summarizes the characteristics of effective learning outcomes. Each of them is discussed in a following section.

Effective statements of intended learning outcomes

- are student-focused rather than professor-focused.
- focus on the learning resulting from an activity rather than on the activity itself.
- reflect the institution's mission and the values it represents.
- are in alignment at the course, academic program, and institutional levels.
- focus on important, non-trivial aspects of learning that are credible to the public.
- focus on skills and abilities central to the discipline and based on professional standards of excellence.
- are general enough to capture important learning but clear and specific enough to be measurable.
- focus on aspects of learning that will develop and endure but that can be assessed in some form now.

**Figure 4-2** Characteristics of Effective Intended Learning Outcomes

Intended learning outcomes are student-focused rather than professor-focused

"What will my students know? What will they understand? What will they be able to do with their knowledge at the end of the course?" When we answer these questions with sentences that begin, "Students should be able to..." we have formulated intended learning outcomes. With those in hand, we can intentionally go about the business of helping students achieve them. Intended learning outcomes provide direction for both us and for our students. They establish the basis for assessment.

The following intended outcomes, taken from a variety of major disciplines, are examples of goals that have been formulated to focus on student learning. They describe what students should know, understand, or be able to do with their knowledge at the end of a course or program.

- Students will
  - organize ideas in a way that increases the effectiveness of a message.
  - analyze and interpret qualitative and quantitative social science research data.
  - work effectively on problem-solving teams.
  - make decisions consistent with moral and ethical principles.
  - develop interior design solutions using creative problem-solving techniques.
  - develop an erosion control policy based on plant, soil, water, and climate principles.

Intended learning outcomes focus on the learning resulting from an activity rather than on the activity itself

A learning outcome that reads, "Students will study at least one non-literary genre of art," describes a curricular experience that students will have, rather than the learning outcome that will result. We should ask, "If students study at least one non-literary genre of art, what will they know, what will they understand, and what will they be able to do with their knowledge?" Possible responses that would be appropriate can be found in two of the intended outcomes for the general education program at The College of St. Scholastica (The College of St. Scholastica, 1999).

- The student will arrive at an analytical and reasoned appreciation of a specific art form.
- The student will be able to communicate the appreciation to others either in written or verbal form or in the artistic medium itself.
Intended learning outcomes reflect the institution’s mission and the values it represents

Intended outcomes that we develop at the course, program, or institutional level should reflect our institutional mission. This assertion may seem surprising. Mission statements used to be tired documents, stored in file cabinets, pulled out and dusted off periodically for special occasions such as accreditation reviews. They were largely irrelevant to daily life at the institution, and as faculty, none of us would ever view our activities as being in any way circumscribed by the institutional mission.

Today, however, as the population of available students declines, institutions are struggling to attract students to their programs and to operate with declining resources. At virtually all institutions, this situation has forced a discussion about the institution’s “competitive edge,” what makes it unique, what makes it special. An increased emphasis on developing a clear and focused mission has resulted. Those things that the institution professes to achieve within its unique environment and with the particular resources it has available have important implications for educational programs and for the intended outcomes that faculty develop.

For example, the missions of The College of St. Scholastica, Babson College, Rutgers University, and Southern West Virginia Community and Technical College are shown in Figures 4-3, 4-4, 4-5, and 4-6, respectively. A review of the missions reveals that the institutions differ somewhat in focus. The College of St. Scholastica is a Catholic liberal arts institution; Babson College is an institution that prepares leaders for the business world; Rutgers is a state-sponsored land-grant research institution, and Southern West Virginia Community and Technical College is a two-year institution that provides vocational/technical programs. Although all these institutions focus on common aspects of students’ intellectual development (e.g., communication skills, critical thinking), their missions reveal differences in educational values, and these differences are reflected in their learning outcomes.

Mission

The College of St. Scholastica is an independent, coeducational, comprehensive college with programs in the liberal arts and sciences and professional career fields. Founded in the Catholic intellectual tradition and shaped by the Benedictine heritage, the College stresses intellectual and moral preparation for responsible living and meaningful work. The curriculum serves the Mission of the College by providing undergraduate and graduate education that is grounded in the liberal arts and sciences. The entire College is committed to an educational process requiring students to meet rigorous academic standards, to broaden the scope of their knowledge, and to be accountable to both self and society. The College has a special commitment to bring its Mission to the people in the region through programs and services.

General Education

The General Education program at the College seeks to broaden students’ grasp of the accumulated wisdom of the past so that the challenges of the present—racism, global conflict, injustice, dehumanization, spiritual emptiness—may be met with wisdom, faith and imagination. Integrated with their professional studies, General Education courses remind students that their professional lives will be touched, complicated, even shaped by these larger issues. The mission of General Education at The College of St. Scholastica is to help students envision the connection between the practice of their profession and the practice of their humanity.

General Education Outcomes

1. Outcome: Problem solving

   Problem solving is a process that incorporates the ability to analyze a situation; select, find, and evaluate appropriate information; and create one or more possible solutions to improve/correct the situation. It requires observation, information gathering, critical thinking, and communication skills. Problem solving is required in all academic disciplines and employment situations a student will face. A general education will provide students the opportunity to analyze and improve their problem solving skills.

   The student will:
   A. analyze a situation (either real or hypothetical) to identify a problem;
   B. use multiple resources to gain additional information regarding the problem;
   C. develop a procedure to solve the problem using a sufficient knowledge base;
   D. propose and critique a viable solution to the problem;
   E. communicate the problem statement, the solution steps and the eventual outcomes.

2. Outcome: Value-based decision making

   Broadly conceived, values have to do with ideas, motives, and standards that a society considers good and essential for sustaining life. Making decisions based on values involves developing analytical skills and moral reasoning, understanding the...
sources of our personal and community value assumptions, and fostering the
disposition and capacity to learn from the insights and experiences of others who
perceive the world differently. Ultimately it involves making decisions to act based
on values which are well suited to achieving well-being for the individual and
the community and the environments on which they depend.

The student will:

A. understand his/her own value system and how these values have been influ-
enenced by his/her personal experiences and decisions;
B. differentiate between his/her personal values and the value systems of
others;
C. appraise personal and communal values in the light of new knowledge, recent
experience, and insight;
D. defend value-based decisions as ultimately serving the common good.

3. Outcome: Social responsibility

As a Catholic and Benedictine institution, the college has a particular obligation
to share with students why it believes in the worth and dignity of all persons, why it
places importance on exhibiting hospitality toward those in need, and why it works
for peace and justice. Equally important is helping students to be better informed
citizens who take the responsibility of citizenship seriously, for a democratic society
is dependent upon the active participation of all of its people.

The student will:

A. identify specific issues that call for social responsibility;
B. evaluate the complexity of social justice issues;
C. evaluate differing points of view on social responsibility;
D. evaluate the moral and social obligations to respond to injustice and to work for
social change;
E. understand the responsibilities of citizenship;
F. demonstrate a beginning commitment to active citizenship.

4. Outcome: Effective Communication . . .

5. Outcome: Disciplinary Understanding . . .


7. Outcome: Living with Diversity . . .

(The College of St. Scholastica, 1999)

FIGURE 4-3 (Continued)

For example, The College of St. Scholastica purports to stress “intellectual
and moral preparation for responsible living and meaningful work . . . . The
entire College is committed to . . . requiring students to meet rigorous aca-
demic standards, to broaden the scope of their knowledge, and to be ac-
countable to both self and society.” The general education outcomes of The
College of St. Scholastica address learning in seven areas: problem solving,
value-based decision making, social responsibility, effective communication,

Mission

Babson’s mission is to educate innovative leaders capable of anticipating, initiating,
and managing change. The undergraduate program carries out this mission by
developing responsible and effective professionals who are broadly educated, think
creatively and analytically, and take entrepreneurial initiative.

(Babson College, 1996, p. 27)

Competencies

- Rhetoric—The ability to communicate effectively in speech and writing is essen-
tial in the business world.
- Numeracy—Effectiveness in quantitative work is vital in nearly all areas of busi-
ness, and helps improve the ability to think creatively and analytically.
- Ethics and social responsibility—Awareness and development of ethics is a
foundation for a successful business career. Volunteer work and giving back to
the community are key to personal development.
- International and multicultural perspectives—Exposure to different cultures is
important in an increasingly global world of business and personal relationships.
- Leadership/teamwork/creativity—Learning to lead within the structure of a
team is a crucial element of success in business today, as is creative entrepre-
neurial thinking.

(Babson College, 1998, p. 4)

FIGURE 4-4 Babson College Mission and Competencies

disciplinary understanding, the aesthetic response, and living with diversity.
Some of these areas are those that all baccalaureate degree-granting institu-
tions have in common (e.g., problem solving and communication). However,
other areas in the general education outcomes (e.g., value-based decision
making and social responsibility) focus on aspects of personal development
related to morality and responsibility. Figure 4-3 presents the college’s learn-
ing outcomes in the areas of problem solving, value-based decision making,
and social responsibility.

Alternatively, Babson College (Figure 4-4) focuses on leadership develop-
ment in a changing world with a particular emphasis on “entrepreneurial
initiative.” As a result, Babson College’s competency areas include leader-
ship, teamwork, and creativity.

Rutgers (Figure 4-5) seeks to prepare students to be responsible citizens
and productive contributors to society. Because it is a comprehensive, multi-
campus, state university with a wide variety of majors, the institution has
adopted learning outcomes that are broadly stated goals defining “common
curricular ground” uniting the university. They are grouped in three areas: in-
tellectual and communication skills; understanding human behavior, society,
and the natural environment; and responsibilities of the individual in society.
Mission

As the sole comprehensive public research university in the New Jersey system of higher education and the state's land-grant institution, Rutgers University has the mission of instruction, research, and service. Among the principles the university recognizes in carrying out this three-fold mission are the following:

- Rutgers has the prime responsibility in the state to conduct fundamental and applied research; to train scholars, researchers, and professionals; and to make knowledge available to students, scholars, and the general public.
- Rutgers should maintain its traditional strength in the arts and sciences, while at the same time developing such new professional and career-oriented programs as are warranted by public interest, social need, and employment opportunities.
- Rutgers will continually seek to make its educational programs accessible to an appropriately broad student body.
- Rutgers is committed to extending its resources and knowledge to a variety of publics, and bringing special expertise and competence to bear on the solution of public problems.

(Rutgers University, 1998, p. 1.10)

University-Wide Learning Goals

The goals define the common curricular ground that unites the university. They are purposefully broad so that the various campuses, colleges, and schools can continue to develop their unique identities through varying ways in which the goals are met, given the mission of the academic unit. They allow for the multiple creative implementation methods that can be tailored to different types of student and faculty strengths and interests.

The goals define the skills and knowledge that all Rutgers students will acquire to support their development as responsible citizens and as productive contributors to society in their workplaces and in their intellectual, cultural, and social endeavors. The goals are grouped in three areas. Intellectual and communication skills are the basic skills necessary for acquisition, analysis, and communication of information. These skills include critical thinking, communication skills, mathematical reasoning analysis, scientific inquiry, and information and computer literacy. Goals in the area of understanding human behavior, society, and the natural environment focus on the major areas of knowledge necessary to function effectively in our society. These include historical understanding, multicultural and international understanding, understanding of literary and artistic expression, understanding the bases of individual and social behavior, and understanding of the physical and biological world. Goals in the area of responsibilities of the individual in society address the skills and knowledge essential to effective citizenship in a democratic society and to ethical social functioning.

These include citizenship education and social and ethical awareness.

(Rutgers University, 1998, p. 3.9)

FIGURE 4-5 Rutgers University Mission and University-Wide Learning Goals

Finally, Southern West Virginia Community and Technical College prepares students for further education or for work and career experiences. Its general education goals are similar to those of the baccalaureate degree-granting institutions above. However, in each of its divisions, the general education goals are interpreted as intended student learning outcomes that reflect the emphasis of the division. As Figure 4-6 shows, students enrolled

Mission

Southern West Virginia Community and Technical College is a comprehensive community college located in a rural environment. The College strives to fulfill current and future higher educational and vocational/technical needs of southern West Virginia, its service area, and beyond. Our College emphasizes student-oriented, transferable learning, enabling students to achieve work, career, and personal success.

Our College provides high quality, affordable, student-friendly, and easily accessible educational services. We are highly effective and flexible in responding to state and community demands, and in adapting to a global socio-economic system.

(Southern West Virginia Community and Technical College, 1998a)

General Education Goals

Southern West Virginia Community and Technical College is committed to providing a general education program that helps students develop the qualities and skills associated with college-educated adults. Southern's general education program promotes the development of independent, critical, and conceptual thinking skills and those skills necessary for the effective communication of one's thoughts. Southern's general education program provides students with an integrated view of knowledge and prepares them for their role as productive and responsible members of society.

Students who have completed the general education requirements of an associate degree will gain the competencies to understand, be effective, aware and have sufficient knowledge in the following:

Critical Thinking Skills
Oral and Written Communication Skills
Mathematical Skills/Competencies
Informational Access/Literacy Skills
Scientific Inquiry and Research Skills
A Cultural, Artistic and Global Perspective

(Southern West Virginia Community and Technical College, 1998b, p. 4)

FIGURE 4-6 Southern West Virginia Community and Technical College Mission and Learning Outcomes

Continued
Intended Student Learning Outcomes in the Division of Allied Health

The Division of Allied Health is committed to delivering the highest quality education using state of the art technology to all students enrolled in allied health programs. Students pursuing an associate degree or certificate will maintain the high standards set forth by their chosen profession. Primary to the success of the student is the ability to think critically and apply decision making skills appropriately. Analysis, synthesis, and evaluation of knowledge obtained in specific allied health programs is a vital link in the future success of the student.

All students enrolled in allied health courses will be required to possess excellent communication skills, both written and oral. Students will be able to effectively communicate with peers, faculty, members of the health care community, patients and their families. Additionally, communication and research through the use of modern technology is essential to success in a global society. Scientific inquiry and research skills are integral components of all allied health professions.

Students will be cognizant of diverse cultures and populations both locally and abroad.

A strong belief in life-long education will be instilled in the student from the first class throughout the program. Qualities of the allied health professional include staying abreast of current trends and changes through continued education.

(Southern West Virginia Community and Technical College, 1998b, pp. 10-11)

FIGURE 4-6 (Continued)

Intended learning outcomes are in alignment at the course, academic program, and institutional levels

The intended learning outcomes of a program or course should be compatible with the institution’s intended outcomes—if they exist. The faculty and administration at all institutions expect that students will know more and be more skilled when they leave the institution than when they entered. However, not all institutions have formulated institution-wide learner-centered outcomes that describe what graduates should know and be able to do. As reflected in the previous section, the process of formulating institution-wide outcomes has taken place intentionally and with broad faculty input at some institutions. Typically, these intended outcomes address the outcomes of the general education portion of the institutional program because this is the component of the curriculum that all students experience in common.

Not all institutions have formulated learner-centered outcomes or have even considered doing so. But as discussed in Chapter 1, external forces such as legislatures and accrediting associations have prompted this approach by requiring institutions to conduct assessments of student learning. All institutions have missions, a developing sense of uniqueness, and some form of a general education program. These factors should be taken into account when formulating program and course outcomes.

Just as institutional faculty should consider the appropriateness of developing common learner-centered outcomes for all students, so academic program faculty should consider developing discipline-related goals or intended learning outcomes for the students in their program. Intended learning outcomes at the program level should reflect the type of knowledge and skills expected in members of the program’s discipline, but they should be compatible with and support institutional outcomes. The intended outcomes of courses should be compatible with academic program and institutional outcomes.

This relationship is displayed in Figure 4-7 which is an offshoot of the early work of Spady (W. Spady, personal communication, October 28, 1998). In designing course outcomes, we start first with the broad outcomes expected of all students in the institution. We then work backward to design academic program outcomes that are in harmony with them. Finally, we design course outcomes that will lead to the achievement of both program and institutional outcomes.

On the other hand, when the program is delivered, students experience the system in reverse. They first participate in experiences that address lesson outcomes. The learning that results from these experiences accumulates as students proceed through the courses and other experiences in the program. When the curriculum is designed so that it provides a coherent set of experiences leading to the development of desired knowledge and skills,

Reflections

As you create your own meaning from the ideas in this section, begin to think about . . .

• When was the last time my colleagues and I reviewed our institution’s mission?

• What values does the mission represent?

• What implications do those values have for our program and courses?
Horticulture. It addresses student learning in the area of biotic and abiotic stresses and their relationship to plant development, and it also focuses on sensitivity to environmental concerns when reducing stresses. This is a culminating learning outcome of a major program, and more than one course in the curriculum would contribute to the achievement of this learning outcome.

The final outcome in Figure 4–8 addresses one aspect of the learning that might take place in a Horticulture course on Environmental Issues, that of the responsibility of the individual in the sustainable management of energy, soil, water, and plants. The learning outcome is narrowly focused, but it is compatible with both the academic program outcome and the institution-wide outcome. For Horticulture students, achieving this course outcome contributes to the achievement of program and institution-wide outcomes as well.

A program's outcomes should also address the general abilities and skills which are used in all academic disciplines, and they should reflect the unique ways in which they are applied in the program. For example, communication skills are desired in all students, but the way in which physicists communicate in their discipline is somewhat different from the way in which teacher education students communicate in theirs. Students in the arts will learn to communicate somewhat differently from students in engineering. This is illustrated in Figure 4–9.

Figure 4–9 presents an institution-wide outcome in the area of oral and written communication skills, followed by program outcomes in the area of

**Institutional Outcome**

Students will understand the physical and biological properties of the environment and how these properties are interconnected within ecological systems.

**Academic Program Outcome (Horticulture)**

Students will recognize common biotic and abiotic stresses, their potential effects on plants at various stages of plant development, and options for reduction of stresses with minimal disturbance to the environment and human beings (Department of Horticulture, 1996).

**Course Outcome (Environmental Issues)**

Students will be able to articulate the responsibility of the individual in the sustainable management of energy, soil, water, and plants.

**FIGURE 4–8 Relationship Among Institutional, Program, and Course Outcomes: Example 1**
Institutional Outcome
Students will be able to speak and write effectively.

<table>
<thead>
<tr>
<th>Academic Program Outcome</th>
<th>Academic Program Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Political Science</strong></td>
<td><strong>Psychology</strong></td>
</tr>
<tr>
<td>Students can articulate principles and concepts of the discipline of political science (Department of Political Science, 1996).</td>
<td>Students can speak and write effectively in the discourse of psychology (Department of Psychology, 1996).</td>
</tr>
</tbody>
</table>

Course Outcome

<table>
<thead>
<tr>
<th>Course Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current Issues in U.S. Foreign Policy</strong></td>
</tr>
<tr>
<td>Students can make an accurate and engaging oral presentation analyzing one current issue in American foreign policy.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Psychological Measurement</strong></td>
</tr>
<tr>
<td>Students can prepare a written summary and interpretation of standardized test results.</td>
</tr>
</tbody>
</table>

**FIGURE 4-9** Relationship Among Institutional, Program, and Course Outcomes: Example 2

Communication for the majors of Political Science and Psychology. Notice that one focuses on using communication skills to express the ideas of the discipline, whereas the other focuses on communicating in the manner of the discipline.

The course outcomes in Figure 4-9 list the type of communication that might be typical for professionals in each field. The course outcome for Political Science addresses the ability to make an accurate and engaging oral presentation on a current issue, whereas the course outcome for Psychology addresses the development of an understandable and useful written report of standardized test results. It is clear that members of both disciplines need excellent communication skills, but the content and sometimes the format of their communication will differ.

When the intended course outcomes in an academic program are compatible with institutional and program outcomes, those of us who teach the courses—individually and collectively—are at the heart of a system that intentionally and effectively helps students develop desired characteristics. This system becomes more effective when, at the program level, we examine program and course outcomes to decide how to best deliver the curriculum, including who will teach which courses and how.

For example, we may wish to structure experiences in the curriculum in order to intentionally help students integrate general skills with discipline-related knowledge in the program. We should sequence courses and establish appropriate prerequisites in such a way that student learning develops in a planned fashion.

In accomplishing this, it would be helpful for all of us to reflect on our individual strengths and weaknesses and determine the ways in which we are best able to contribute to the development of student learning. Those of us who are good communicators may take (or be given) the responsibility for emphasizing communication skills in the courses we teach in the discipline. Others may emphasize critical thinking and problem solving. This may be done informally, or it could be formalized by designating certain courses as "communication intensive" or "problem-solving intensive" (Green & Mullen, 1993).

Attending to the development of general skills and abilities may also cause us to design new organizational structures. At Alverno College, a faculty member is not only a member of an academic department, but he/she is also a member of an interdisciplinary group focused on one of the eight abilities the institution seeks to have students develop (Alverno College Faculty, 1992; Hakel, 1997). In a system with clearly formulated learning outcomes, each course and each faculty member can be envisioned in terms of their role in a curricular system of experiences that are interrelated and outcome-oriented.

It is possible for us to pursue learner-centered instruction without consideration of program and institutional outcomes, and we might be quite effective in helping students develop certain skills and abilities. However, as Chapters 1 and 3 point out, the ability of higher education institutions to reflect society implies that faculty work in concert, developing a common vision of the desired qualities that our graduates should possess and a coherent curriculum to help students achieve them.

**Reflections**

As you create your own meaning from the ideas in this section, begin to think about...

- Have faculty at my institution formulated intended learning outcomes for all students?
- If so, what implications do they have for the outcomes in my program or courses?
- How would the intended learning outcomes of our program and courses differ if my faculty colleagues and I designed them backward, starting with institutional outcomes?
- As we deliver the curriculum forward, how are our courses helping students reach important institutional or program learning goals?
**Intended learning outcomes focus on important, non-trivial aspects of learning that are credible to the public**

One pitfall to avoid in formulating intended outcomes is focusing on easy-to-measure, but relatively unimportant outcomes like, “Students will recall the stages of mitosis.” This can happen when we develop learning outcomes by carving up the content of the discipline into ever smaller pieces. Recalling the stages of mitosis may be important for some students, but it is probably more appropriate as an intended outcome of a class period than it is as a course or program outcome.

Statements of intended outcomes that “decompose” the content of the discipline into smaller parts are referred to by Erwin (1991) as “subject matter objectives” (p. 37). They tend to result from traditional, behavioral approaches to formulating learning goals and objectives that were advocated in the 1950s and 1960s. At that time, Bloom (1956) and others (Krathwohl, Bloom, & Masia, 1964; Mager, 1962) developed taxonomies of educational objectives and guidelines for developing them that encouraged teachers to think about student learning in terms of its cognitive, affective, and psychomotor components. The cognitive component focuses on the development of the intellect and related intellectual skills. The affective component focuses on the development of values and attitudes. The psychomotor area refers to the development of muscular skills and neuromuscular coordination.

Although it is helpful to think about these aspects of learning separately, it is important to remember that when students are engaged in learning the cognitive, affective, and psychomotor aspects of their learning are inseparable (King & Baxter Magolda, 1996). All learning—even the acquisition of a new fact—requires the integration of new material with existing knowledge and is achieved through complex mental processes (Resnick & Resnick, 1992). Learning is influenced by feelings and attitudes, and in some cases, it involves feedback from muscular coordination. Thus, statements of intended outcomes at the course, program, and institutional levels should focus on desired outcomes with all of their complexities. They should address the integrated skills and abilities that are valued by educated people (Sizer, 1992; Wiggins, 1989).

This means that statements of desired outcomes should focus on the way the outcomes of the general education component of a student’s program intersect with those in the major discipline. In general education, faculty help students to develop their skills and abilities in areas like communication and critical thinking. However, such abilities cannot develop in isolation from disciplinary content. One can learn effective communication and critical thinking skills only if one has something to communicate and think critically about. Furthermore, faculty should be helping students to communicate and think critically as members of their discipline. Process outcomes and content outcomes must be developed together, and the focus should be on using content effectively, not memorizing it. [See Chapter 7 for a discussion of Kurfiss’s (1988) distinction between declarative knowledge and procedural knowledge.]

Marzano, Pickering, and McTighe (1992) have identified five types of learning outcomes that comprise the processes they believe will promote lifelong learning. The first category is that of complex thinking standards and includes students’ ability to use various reasoning strategies and to translate “issues and situations into manageable tasks that have a clear purpose” (p. 19). The second is the area of information processing. Outcomes to be addressed in this area include using information-gathering techniques and resources, interpreting and synthesizing information, assessing the value of information, and knowing how and where additional information is needed. The third category is that of effective communication and includes communicating with diverse audiences in a variety of ways for different purposes. The fourth category addresses collaboration/cooperation outcomes, including effective performance in group situations, using interpersonal skills.

The final category, habits of mind, is concerned with students’ ability to control their own thought processes and behavior. Marzano et al. (1993) include three types of outcomes in this category.

**Self-Regulation**
- a. Is aware of own thinking.
- b. Makes effective plans.
- c. Is aware of and uses necessary resources.
- d. Is sensitive to feedback.
- e. Evaluates the effectiveness of own actions.

**Critical Thinking**
- f. Is accurate and seeks accuracy.
- g. Is clear and seeks clarity.
- h. Is open-minded.
- i. Restrains impulsivity.
- j. Takes a position when the situation warrants it.
- k. Is sensitive to the feelings and level of knowledge of others.

**Creative Thinking**
- l. Engages intensely in tasks even when answers or solutions are not immediately apparent.
- m. Pushes the limits of own knowledge and abilities.
n. Generates, trusts, and maintains own standards of evaluation.
 o. Generates new ways of viewing a situation outside the boundaries of standard conventions (pp. 23-24).

King and Baxter Magolda (1996) support the importance of developing habits of mind in the college curriculum.

"Developing thinking skills is only one aspect of achieving educational success in college. . . . For example, effective problem-solving requires such attributes as awareness of the problem, the ability to gather and interpret relevant information, a willingness to try overcoming obstacles by making the best decision, and the personal "wherewithal" to implement the desired solution (p. 167)."

Do students have the self-discipline to exert the appropriate amount of "time on task," the perseverance to see a problem or project through to completion, and the personal maturity to take responsibility for completing projects in a timely fashion. . . . The affective or personal development dimensions that affect student learning are painfully clear when the answer to questions like these is "no" (p. 168).

Some people react negatively to the suggestion that learning outcomes should focus on general abilities, "habits of mind," or attitudinal aspects of learning. They fear that a "process" focus will minimize the amount of content that students learn. However, these individuals may be confusing the amount of content that students are exposed to with the amount that they actually internalize. In traditional teaching, students are exposed to a great deal of content by professors, but the typical lament of professors is that students don't seem to understand or retain it. In courses in which students are expected to use content in meaningful ways, the amount of content internalized and recalled should actually increase.

Furthermore, students with little knowledge of the discipline will not be effective when they attempt to employ general abilities like communication, reasoning, and so forth. As Resnick and Resnick (1992) point out, the ability of individuals to think, reason, and make judgments like experts in the discipline depends on the amount of content they possess. Students who have mastered more content will be better able to think like members of their discipline. Thus, the focus is not on less content but rather on what students can do with the content they have learned. Recall from Chapter 2 the problem of "inert knowledge" (Whitehead, 1929), stemming from the difficulty individuals have in knowing when, how, and where to use the information they acquire. When formulating intended learning outcomes, we should integrate the knowledge of essential facts and concepts with the development of habits of mind that will require their use.

This approach is compatible with a holistic model of college student development, one that blurs distinctions between cognitive and affective achievements (Ewell, 1994). Outcomes that integrate content and thinking processes, as well as cognitive and affective components of learning, are referred to by Erwin (1991) as "developmental objectives" (p. 39). As Ewell points out, the conceptual foundations for an integrated developmental approach have been well established in the student development theories of Perry (1970), Chickering (1969), and Kohlberg (1981). The integrated developmental approach is becoming increasingly characteristic of curricular objectives on college campuses (Erwin, 1991).

The following intended outcomes are examples of learning outcomes that integrate intellectual skills and the use of disciplinary content.

- Students will reason using simplified economic models such as supply and demand, marginal analysis, benefit-cost analysis, and comparative advantage (Department of Economics, 1996).
- The student will be able to design and conduct original and independent biological research (Department of Biology, 1998).
- The student will be able to identify and present the implications of the various ethical and legal decisions facing Human Resources professionals and substantiate points of view with credible reasoning (Department of Human Resources Management, 1998).

These outcomes integrate intellectual and affective elements.

- Students will have greater respect for different races and cultures as their knowledge about them increases.
- As team members, students will reveal their commitment to the team through the effective use of group problem-solving techniques.

Reflections

As you create your own meaning from the ideas in this section, begin to think about . . .

- If a panel of educated people were to review the intended learning outcomes that my faculty colleagues and I have developed for our program and courses, which ones would they agree are important?
- How do my colleagues and I focus on using knowledge rather than simply acquiring it?
- Which of our intended learning outcomes reflect an understanding that students are whole persons and not just minds?
Intended learning outcomes focus on skills and abilities central to the discipline and based on professional standards of excellence

Intended learning outcomes should be credible to members of the profession in which they are formulated. Many professors in disciplines like the arts perceive that an outcomes approach to assessment is a reductionistic attempt to “quantify” the elusive and important qualities they seek to develop in students. They feel that the “special quality” that makes a painting, a sculpture, or a landscape artistic is difficult to describe in observable terms, let alone quantify.

It is true that there is no need to quantitate the unquantifiable in assessment. On the other hand, if faculty in the arts are going to participate in assessment that promotes learning, they must attempt to describe and measure the quality or qualities that make a work artistic, and their description should be convincing to members of their disciplines. Even though it is difficult to articulate and assess what is really central in the arts, it is critically important to do so. It doesn’t make sense to simply “count” superficial aspects of artistic endeavor just to fulfill a requirement to assess.

Intended learning outcomes should be compatible with the best thinking in the discipline in terms of what is important to know and how information in the discipline should be taught. Most disciplines have developed standards for student learning. The National Council of Teachers of Mathematics is a notable example. In recent years, this organization has developed standards that focus on conceptual understanding, problem solving, and the use of mathematics in the context of application rather than simply on the acquisition of procedural information leading to right answers. We should all consider turning to our professional associations for guidance in developing learner outcomes.

Intended learning outcomes are general enough to capture important learning but clear and specific enough to be measurable

Attaining an appropriate level of generality or specificity is often a difficult challenge when we begin formulating intended outcomes. As a basic principle, institution-wide outcomes will be more general than academic program outcomes. Academic program outcomes will be more general than individual course outcomes, and within a course, we may formulate day-to-day intended outcomes that are more specific than the course outcomes they support. If a professor’s course outcome is that teacher education students will learn to use instructional media effectively, the specific outcome for today or this week may be that students will learn to make and use transparencies that enhance the effectiveness of instruction.

Even though program and institutional outcomes will be stated more generally than course or lesson outcomes, they should still be framed in measurable terms. For example, the outcome, “Students will be able to solve problems,” gives little guidance for assessment. On the other hand, considerable direction for assessment is provided when the outcome is phrased in the following manner:

Students will work effectively with others on complex, issue-laden problems requiring holistic problem-solving approaches (College of Agriculture Curriculum Committee, 1994).

This outcome can be assessed by developing assessments that require teams of students to develop solutions to complex, issue-laden problems, as defined by the discipline. They can be judged on the effectiveness of their team skills, the quality of their solution, and their ability to use holistic problem-solving approaches. Chapter 6 discusses the development of rubrics, tools that can be used to describe and judge student work in important areas like team skills, areas that many have considered too subjective to be measured validly.

Intended learning outcomes focus on aspects of learning that will develop and endure but that can be assessed in some form now

Another issue that can arise has to do with the point at which learners are expected to achieve intended outcomes. Many faculty claim that the goals of an education are not really achieved until many years after graduation when individuals have the opportunity to use their knowledge and apply their skills in the context of their adult life and professional development.

This is probably true; however, it does not justify postponing the assessment of student learning until after graduation. We have a responsibility to gauge the extent of learning that can reasonably be expected to occur before students leave the institution. We also have the responsibility to assess whether or not it has occurred and how programs can be changed to make learning more effective.
Reflections
As you create your own meaning from the ideas in the previous sections, begin to think about . . .

- How do our intended learning outcomes reflect current thinking in our discipline?
- How would leaders in our discipline react to our intended learning outcomes?
- Do my colleagues and I have a clear idea of how we would measure the learning represented in our intended learning outcomes?
- How could we rephrase our learning outcomes to represent the type of learning that we have in mind?
- What aspects of our intended learning outcomes could be measured while students are still at the institution?
- What aspects can only be assessed later in students’ lives?

LOOKING AHEAD
Once we have written learning outcomes that form the basis for assessment at all levels in the institution, provide direction for all instructional activity, and inform students about our intentions, it is important that we collect data about whether or not we are helping students achieve them. Classroom assessment techniques and continuous improvement activities provide us with numerous ways to gather feedback for the purpose of improving learning and teaching.

Chapter 5 explains several techniques commonly used by professors who are committed to assessing learning and continually improving. These techniques help teachers collect feedback to understand how students are progressing and to help them make adjustments to remove barriers to learning. Equally important is the need to communicate back to students about progress in learning and changes that will be made in order to create a feedback loop. This loop or system of continuous feedback helps create a learner-centered environment in which teaching and learning are inseparable activities that reinforce one another.

TRY SOMETHING NEW
1. Write five intended learning outcomes, and evaluate them according to the criteria discussed in this chapter and listed in Figure 4–2.
2. Write a set of intended learning outcomes for one of your courses and discuss them with students.

3. With a group of colleagues, formulate intended learning outcomes for your program and discuss how your courses help students reach them.

REFERENCES
Using Feedback from Students to Improve Learning

If you are serious about quality, everybody has to know how they’re doing (Marchese, 1991, p. 5).

You don’t get good at anything without feedback—not feedback in the sense that an expert translates things for you, but feedback in the sense of watching the ball, where it goes and where it doesn’t go, and realizing what the result means for your next actions (Wiggins, 1997, pp. 31–32).

Feedback is not praise or blame. It’s what you did and did not do, whether you realized it or intended it. Assessment should make its chief business the confronting of performers with the effect of their work, including performers called teachers. And then performers must do something about the effect, either to explain it, to justify it, or correct it (Wiggins, 1997, p. 39).

Making Connections

As you begin to read the chapter, think about the ideas and experiences you’ve already had that are related to gathering feedback from students to improve learning . . .

- How do you collect feedback from your students to help you improve your teaching and their learning?

Continued