Student Success in a Learner-Centered Environment

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Helping Our Students Succeed in College and Beyond

"Today most colleges and universities emphasize teaching thinking as one of their goals, and this activity is related to a major change in beliefs about the mission of higher education. When I began teaching, a common assumption was that some students were simply not suited for higher education. Many public universities used the first year to weed out those who did not belong. The attitude persisted in math and science up until the last few years. The first-year chemistry, physics, and math courses often were designed to discourage those who presumably weren't able to do science, often women." (p. 41)

"A large part of our job as teachers is to teach our students how to learn and think and to be motivated to continue learning. This is a task for teachers in all disciplines." (p. 42)

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Wilbert J. McKeachie (2003). William James's *Talks to Teachers* (1899) and McKeachie's *Teaching Tips* (1999). *Teaching of Psychology, 30(1),* 40-43.

Contents

Exercise

You meet two faculty (A and B) who teach junior-level developmental psychology courses, and you ask them about their courses. Here are their responses:

A. My developmental psychology course covers changes in cognition, personality, and motor skills from birth to early adulthood.

B. Students who complete my developmental psychology course should be able to:
   - Describe changes in cognition, personality, and motor skills from birth to early adulthood.
   - Use developmental theories to explain these changes.
   - Recognize when children's development requires intervention.
   - Apply what they learn to parenting, education, and public policy issues related to children and families.

Form an image of these two courses.

1. What happens in the classroom?

2. What do students do outside of the classroom?

3. How are students graded?

4. How does the faculty member assess the quality of this course?

Teaching-Centered vs. Learning-Centered Instruction

Concept	Teaching-Centered	Learning-Centered
Teaching Goals	• Cover the discipline	Students learn: • How to use the discipline • How to integrate the disciplines to solve complex problems • An array of core learning objectives, such as communication and information literacy skills
Curriculum	• Courses in catalog	• Cohesive program with systematically-created opportunities to synthesize, practice, and develop increasingly complex ideas, skills, and values
Course Structure	• Faculty "cover" topics	• Students master learning objectives
How Students Learn	• Listening • Reading • Independent learning, often in competition for grades	• Students construct knowledge by integrating new learning into what they already know. • Learning as a cognitive and social act
Pedagogy	• Based on delivery of information	• Based on engagement of students
Course Delivery	• Lecture • Assignments and exams for summative purposes	• Active learning • Assignments for formative purposes • Collaborative learning • Community service learning • Cooperative learning • Online, asynchronous, self-directed learning • Problem-based learning
Faculty Role	• Sage on the stage	• Designer of learning environments
Great Teaching	• Teach (present information) well and those who can will learn.	• Engage students in their learning. • Seek ways to help all students master learning objectives. • Use classroom assessment – identify objectives, routinely examine student progress, and make necessary adjustments. • Scholarship of teaching
Course Grading	• Faculty as gate keepers • Normal distribution expected	• Grades indicate mastery of learning objectives
Assessment	• Reliance on grades, registration and course completion data, etc.	• Faculty use classroom assessment to improve learning in day-to-day courses. • Faculty use program assessment to improve learning throughout the curriculum.

What Do We Want Our Students to Learn?

Possible Institution-Wide Goals	Possible Discipline-Specific Goals
• Civic Responsibility, Values, and Ethics • Communication Skills • Computer Skills • Critical Thinking Skills and Habits • Global Awareness • Historic and Aesthetic Sensitivity • Information Literacy • Intellectual Flexibility • Interpersonal and Teamwork Skills • Knowledge Integration • Lifelong Learning Skills • Multicultural Understanding • Problem-Solving Skills • Quantitative Reasoning and Skills	• Understanding the theories, concepts, and research findings of the discipline • Using appropriate methodologies to develop knowledge and to examine questions within the discipline • Applying what has been learned to relevant phenomena • Being aware of major ethical issues and standards within the discipline • Being aware of and adopting major values that professionals within the discipline share

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The Cohesive Curriculum

- Coherence
- Synthesizing Experiences
- Ongoing Practice of Learned Skills
- Systematically Created Opportunities to Develop Increasing Sophistication and Apply What Is Learned

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Curriculum Alignment Matrix: Is this curriculum cohesive?

Course	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5
100	I				I
120		I			P
200	P		P		P
204					P
300	P		P		
329					P
400			P		D
480					
490	D		D		D

I = Introduced, P = Practiced, D = Demonstrated

Course Design: Intentional Teaching for Intentional Learning

Course Objective (What Students Will Learn)	**Activity** (How Students Will Learn)	**Assessment** (How We Know They Learned)
Students can write research reports in APA style.	• Students will work in groups to apply the APA style manual to a set of simulated research report sections created to include APA style violations. Whole class discussion will ensure that all violations have been identified. • Students will conduct a research project and will iterate drafts of the sections of their research reports, based on peer feedback collected on checklists specifying APA style requirements.	• Objective exam questions on the second quiz and the final will examine student knowledge of APA style guidelines. • Student research reports will be assessed for conformity to APA style.

Seven Principles for Good Practice in Undergraduate Education

These principles, first published in 1987, were developed by a team of educational leaders as guiding principles for faculty engaged in teaching and in educational reform. Most educational leaders agree that they are valid, but have not yet been widely implemented. The following summary is taken *verbatim* from Chickering and Gamson (see http://www.hcc.hawaii.edu/intranet/committees/FacDevCom/guidebk/teachtip/7princip.htm and http://home.capecod.net/~tpanitz/seven.html).

1. **Good Practice Encourages Contact Between Students and Faculty.** *Frequent student-faculty contact in and out of class is a most important factor in student motivation and involvement. Faculty concern helps students get through rough times and keep on working. Knowing a few faculty members well enhances students' intellectual commitment and encourages them to think about their own values and plans.*
2. **Good Practice Develops Reciprocity and Cooperation Among Students.** *Learning is enhanced when it is more like a team effort than a solo race. Good learning, like good work, is collaborative and social, not competitive and isolated. Working with others often increases involvement in learning. Sharing one's ideas and responding to others' improves thinking and deepens understanding.*
3. **Good Practice Uses Active Learning Techniques.** *Learning is not a spectator sport. Students do not learn much just sitting in classes listening to teachers. memorizing prepackaged assignments, and spitting out answers. They must talk about what they are learning, write reflectively about it, relate it to past experiences, and apply it to their daily lives. They must make what they learn part of themselves.*
4. **Good Practice Gives Prompt Feedback.** *Knowing what you know and don't know focuses your learning. In getting started, students need help in assessing their existing knowledge and competence. Then, in classes, students need frequent opportunities to perform and receive feedback on their performance. At various points during college, and at its end, students need chances to reflect on what they have learned, what they still need to know, and how they might assess themselves.*
5. **Good Practice Emphasizes Time on Task.** *Time plus energy equals learning. Learning to use one's time well is critical for students and professionals alike. Allocating realistic amounts of time means effective learning for students and effective teaching for faculty.*
6. **Good Practice Communicates High Expectations.** *Expect more and you will get it. High expectations are important for everyone -- for the poorly prepared, for those unwilling to exert themselves, and for the bright and well motivated. Expecting students to perform well becomes a self-fulfilling prophecy.*
7. **Good Practice Respects Diverse Talents and Ways of Learning.** *Many roads lead to learning. Different students bring different talents and styles to college. Brilliant students in a seminar might be all thumbs in a lab or studio; students rich in hand-on experience may not do so well with theory. Students need opportunities to show their talents and learn in ways that work for them. Then they can be pushed to learn in new ways that do not come so easily.*

Insights about Teaching and Learning

Peter Ewell, senior associate at the National Center for Higher Education, provides seven insights into higher level-level learning based on the last decade of "pathbreaking research in the field of cognitive science." The following is taken *verbatim* from Ewell, P. T. (December, 1997), Organizing for Learning: A New Imperative, *AAHE Bulletin*, pages 3-6.

1. **The learner is not a "receptacle" of knowledge, but rather creates his or her learning actively and uniquely.**
   Learning is an essentially creative act. Its proof lies in the learner's ability to go beyond the simple "reproduction" of knowledge to engage in fundamentally new forms of understanding. ...
2. **Learning is about making meaning for each individual learner by establishing and reworking patterns, relationships, and connections.**
   Cognitive science tells us that individual brains "learn to make themselves work" actively and individually by establishing new patterns of synaptic connection. The result is a unique set of "mental models" that each of us uses to make meaning out of specific situations. ...
3. **Every student learns all the time, both with us and despite us.**
   Synaptic connection making occurs constantly and not just in formal "learning" situations. ...
4. **Direct experience decisively shapes individual understanding.**
   Cognitive science also tells us that the brain's activity is in direct proportion to its engagement with actively stimulating environments. ... this insight certainly lends credence to our efforts to create active student engagement in any teaching situation. ...
5. **Learning occurs best in the context of a compelling "presenting problem."**
   Maximum learning tends to occur when people are confronted with specific, identifiable problems that they want to solve and that are within their capacity to do so. ...
6. **Beyond stimulation, learning requires reflection.**
   Brain research tells us that high challenge produces major surges in short-term neural activity (termed "beta-level" activity). But building lasting cognitive connections requires considerable periods of reflective ("alpha-level") activity as well. ...
7. **Learning occurs best in a cultural context that provides both enjoyable interaction and substantial personal support.**
   Finally, new insights into the traditional cultures gain and transmit knowledge ... remind us that effective learning is social and interactive. Key features ... are direct personal support for manageable risk taking ... and frequent opportunities for peer interaction and feedback. ...

Ewell suggests that faculty use and develop:

1. Approaches that emphasize application and experience.
2. Approaches in which faculty constructively model the learning process.
3. Approaches that emphasize linking established concepts to new situations.
4. Approaches that emphasize interpersonal collaboration.
5. Approaches that emphasize rich and frequent feedback on performance.
6. Curricula that consistently develop a limited set of clearly identified, cross-disciplinary skills that are publicly held to be important.

Active Learning

General Principles

1. Learning is an active process. Learners construct their own knowledge by making sense of information and by linking new concepts to what is already known.
2. Talking and writing help students clarify, defend, develop, and explain their thinking and communicate their ideas to others. Listening and reading help students learn to understand others' thinking. Group work helps students collaboratively build new ideas that take alternative perspectives into account. Independent learning and reflection help students become lifelong learners. Communication, collaboration, interpersonal skills, and lifelong learning skills are important learning objectives.
3. The use of case studies, problem-based learning, role playing, community service learning, and other fieldwork activities help students connect academic coursework to the real world.
4. Less is more. The goal is to develop thinking skills rather than transmit information. This entails more in-class time devoted to active processing and less in-class time devoted to traditional lecturing. Content exposure more often occurs outside of the classroom, perhaps encouraged by the integration of readings into classroom activities and the use of assignments that promote engagement, such as learning journals.
5. Students learn in different ways. Not all of our students learn as we do.
6. There is more than one way to teach well.
7. Active learning exercises are created to help students develop specific learning objectives. Students *learn*, not just *do* something.

"Students learn what they care about and remember what they understand."
(Eriksen, 1984, p. 51)

"It is astonishing what one can believe for a period of time without discussing it with others."
(Barbara Mossberg, 1995)

"One must learn by doing the thing, for though you think you know it—you have no certainty, until you try."
(Sophicles)

"Learning is not so much an additive process, with new learning simply piling up on top of existing knowledge, as it is an active, dynamic process in which the connections are constantly changing and the structure is reformatted."
(K. Patricia Cross)

Advice for Terry

Terry teaches a survey course that generally enrolls about 100 students. This course usually is scheduled three days a week as a "lecture" class. What are some ways that Terry can actively engage students in this course?

Advice for Chris

Chris teaches a course that generally enrolls about 20-30 students. This course usually is scheduled three days a week as a "lecture/discussion" class. What are some ways that Chris can actively engage students in this course?

Student Characteristics

Students vary in many ways, for example:

- writing and mathematics skills
- English fluency
- computer literacy
- cultural background
- world and work experiences
- learning styles

Some Teaching and Learning Styles

Three Perceptual Modalities

Linda Moore
So What's Your Style?
Paper presented at 1998 POD Conference, Snowbird, Utah

Visual: Sight; emphasis on seeing, watching, viewing, drawing.
Auditory: Words; emphasis on listening and speaking.
Kinesthetic: Movement and action; emphasis on doing, direct involvement, demonstrating, showing.

You are strong in the **visual** channel if you:

1. Like to keep written records
2. Typically read billboards while driving or riding
3. Put models together using written directions
4. Stay focused in a conversation by looking at the person
5. Are able to visualize pictures mentally
6. Commit a zip code to memory by writing it
7. Take lots of notes
8. Need quiet for concentration
9. "See" the textbook page when taking a test
10. Need to write down a great idea in order to remember it
11. Consider yourself a bookworm
12. Plan the upcoming week by making a list
13. Like reading/writing games, like Boggle, Scrabble, Pictionary
14. Prefer to get a map and find your way around
15. Prefer written directions to spoken directions

You are strong in the **auditory** channel if you:

1. Prefer to have someone else read instructions when making something
2. Review for a test by reading notes aloud or talking with others
3. Prefer listening to a cassette over reading the same material
4. Commit a zip code to memory by saying it
5. Talk to yourself when working a problem
6. Plan the upcoming week by talking it through with someone
7. Like to stop at a service station for directions
8. Are able to concentrate well on what someone is saying
9. Use free time for talking with others
10. Read aloud or listen to the words in your head when reading
11. Find it difficult to picture ideas mentally
12. Discuss ideas to understand them
13. Prefer oral directions from an employer
14. Prefer listening/talking games
15. Remember what people say rather than what they look like
16. Can follow a lecture even with your head down on the table

You are a strong in the **kinesthetic** channel if you:

1. Like to build things
2. Use your sense of touch to put a model together
3. Can distinguish items by touch when blindfolded
4. Move with music
5. Doodle and draw on any available paper
6. Move/pace while talking on the phone
7. Like the texture or feel of fabrics, clothes, etc.
8. Prefer movement games to games in which you sit
9. Are an outdoors person
10. Are well-coordinated
11. Use free time for physical activities
12. Don't like to read or listen to directions – would rather just start
13. Daydream in class
14. Take notes, but rarely go back to read them
15. Use your fingers to count and move your lips when you read

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Learner's Modality	Teacher Should …	Learner Should …
Visual	• Write on the board or an overhead. • Use chart paper. • Use videos, slides, and other visual material. • Look at students while talking. • Encourage note taking. • Use color. • Preview chapters by showing pictures, bold-faced print, etc. • Use demonstrations. • Provide a quiet environment in which students can work alone.	• Write things down. • Look at people when they talk. • Study alone in a quiet place. • Take lots of notes. • Re-copy class notes. • Use color to highlight main ideas. • Preview a chapter by looking at it first. • Sit near the front of the class. • Write vocabulary words in color on cards. • Use lined paper. • Visualize or use pictures to reinforce vocabulary and concepts.
Auditory	• Give verbal directions. • Talk students through a task or process. • Test verbally. • Allow students to talk about subjects. • Encourage study groups. • Read to students. • Use cassettes and encourage students to use them, too. • Use music as a background when appropriate. • Preview a book by talking about what it will cover.	• Study with a partner or in groups. • Recite information. • Tape lectures and listen to them. • Read aloud. • Have music in the background. • Tape yourself explaining concepts. • Preview a book by saying out loud what you think it will cover.
Kinesthetic	• Let students manipulate materials before theories are explained. • Allow break time. • Allow students to write on the board. • Allow movement. • Use role-play and dramatization. • Encourage note taking. • Do "labs." • Go on field trips.	• Take breaks. • Move/pace when learning. • Use role-play as a learning tool. • Try studying stretched out rather than sitting in a chair. • Use a bright piece of paper in a favorite color as a desk blotter for color grounding. • Try "tracing" difficult information (in the air, on paper, etc.) • Try reading while pedaling a stationary bike. • Take notes.

Personality Types:
Introversion-Extraversion

Which column describes you better?

Extraversion	Introversion
Likes action and variety.	Likes quiet and time to consider things.
Likes to do mental work by talking to people.	Likes to do mental work privately.
Acts quickly, sometimes without much reflection.	May be slow to try something without understanding it first. Likes to think a lot before acting.
Likes to see how other people do a job, and to see their results.	Likes to understand the idea of a job and to work alone or with just a few people.
Wants to know what other people expect of him or her.	Wants to set his or her own standards.
Loves a party.	Prefers quiet get-togethers with fewer people.
More interested in the world of action, people, and things.	More interested in the inner world of ideas and private things.
Sociable, people person.	More quiet and shy, especially around strangers.
Energized by people and activities.	Needs private time away from people and activities.
Confident in new situations.	Cautious in new situations.
Tends to be faster and to dislike complicated procedures.	Tends to be careful with details and to dislike sweeping statements.
Is good at greeting and remembering people.	Has trouble remembering names and faces.
Is often impatient with long, slow jobs.	Tends not to mind working on one project for a long time without interruption.
Is interested in the results of his/her job and in getting it done.	Is interested in the idea behind his/her job.
Doesn't mind interruptions.	Dislikes interruptions while working.
Likes to have people around.	Can work contentedly alone.

Teaching to their style:

Extraverts	Introverts
• Encourage activity. • Provide variety of experiences. • Provide opportunity to work with others. • Encourage thinking out loud.	• Encourage private reflection. • Provide quiet time for concentration. • Permit private work. • Provide opportunity to work alone.

Personality Types:
Sensing-Intuition

Which column describes you better?

Sensing	Intuition
Pays more attention to experience as it is.	Pays more attention to the meanings of facts and how they fit together.
Likes to use eyes and ears and other senses to find out what's happening.	Likes to use imagination to come up with new ways to do things and new possibilities.
Dislikes new problems unless there are standard ways to solve them.	Likes solving new problems and dislikes doing the same thing repeatedly.
Enjoys using skills already learned more than learning new ones.	Likes using new skills more than practicing old ones.
Is patient with details, but impatient when the details get complicated.	Is impatient with details, but doesn't mind complicated situations.
Pays more attention to the facts that come from personal experiences.	Pays more attention to the "meanings" behind the personal experiences.
Can easily see details.	Can easily see the "big picture."
Loves competition with others.	Competes with him or herself.
Likes hands-on activities with a solution.	Likes open-ended problems with many solutions.
Wants results immediately; product-oriented.	More interested in the process than the product.
Works more steadily, with realistic ideas of how long things will take.	Works in bursts of energy powered by enthusiasm, with slack periods in between.
Reaches conclusions step by step.	Reaches conclusions quickly.
Is impatient when details get complicated.	Is patient in complicated situations.
Is not often "inspired," and doesn't trust the inspiration when it occurs.	Follows inspirations.
Seldom makes errors of fact.	Frequently makes errors of fact.
Tends to be good at precise work.	Dislikes taking time for precision.

Teaching to their style:

Sensors	Intuitors
• Provide a variety of activities. • Give specific, active responsibilities. • Engage the senses. • Use practical applications. • Praise project completion.	• Encourage creativity in projects. • Give intellectual challenges. • Talk about their interests; encourage others to value their ideas. • Provide "thinking time" and breathing space.

Personality Types:
Thinking-Feeling

Which column describes you better?

Thinking	Feeling
Likes to decide things logically. Likes detailed, factual information.	Likes to decide things with personal feelings and human values, even if they aren't logical.
Wants to be treated with justice and fair play.	Likes praise, and likes to please people, even in unimportant things.
May neglect and hurt other people's feelings without knowing it.	Is aware of other people's feelings.
Gives more attention to ideas or things than to human relationships.	Can predict how others will feel.
Doesn't need harmony.	Gets upset by arguments and conflicts; values harmony and fair play.
Makes decisions by examining data, staying impersonal and cool.	Makes decisions by paying attention to personal values and feelings.
Does not show emotion readily and often is uncomfortable dealing with people's feelings.	Tends to be aware of people's feelings.
Likes analysis and ordering things logically.	Efficiency can be disturbed by conflicts with others.
Tends to decide impersonally, sometimes paying insufficient attention to people's wishes.	Often lets decisions be influenced by his/her own or other's personal likes and wishes.
Needs to be treated fairly.	Needs occasional praise.
Can reprimand people.	Dislikes telling people unpleasant things.
Tends to be firm-minded.	Tends to be sympathetic.

Teaching to their style:

Thinkers	Feelers
• Point out structure and logic of your position. • Remove time tensions; let them set their own schedules. • Set specific expectations; provide structure and logical organization. • Allow them to plan and organize details. • Give regular feedback and reassurance.	• Allow them opportunities to help others. • Share your "person," get to know their "person." • Allow frequent group work. • Encourage humor. • Emphasize work with value to others.

Personality Types:
Judging-Perceiving

Which column describes you better?

Judgment	Perception
Likes to have a plan, to have things settled and decided ahead.	Likes to stay flexible and avoid fixed plans.
Tries to make things come out the way they "ought to be."	Deals easily with unplanned and unexpected happenings.
Likes to finish one project before starting another.	Likes to start many projects, but may have trouble finishing all of them.
Usually has mind made up.	Usually is looking for more information.
May decide things too quickly.	May decide things too slowly.
Wants to be right.	Wants to miss nothing.
Lives by standards and schedules that are not easily changed.	Lives by making changes to deal with problems as they come along.
Likes established routines.	Likes to "go with the flow."
Uneasy with unplanned happenings.	Values and needs flexibility.
Planner; self-organizer.	Spontaneous, adaptable, open-minded.
Works best when there is a plan.	Adapts well to changing situations.
Likes to get things settled and finished.	Does not mind leaving things open for alterations.
May dislike interrupting projects for a more urgent one.	May start too many projects and have difficulty finishing them.
Wants only the essentials needed to begin his/her work.	Wants to know all about a job.
May not notice new things that need to be done.	May postpone unpleasant jobs.
Tends to be satisfied once he/she has reached a conclusion.	Tends to be curious and to welcome new light on old topics.

Teaching to their style:

Judgers	Perceivers
• Provide clear directions and expectations. • Provide specific timelines and guidelines. • Follow established routines. • Give immediate feedback.	• Capitalize on the person's interests and curiosity. • Let them set their own timeline for projects. • Permit flexibility in schedules and routines. • Give open-ended tasks.

Based on Lawrence, G. D., 1979, 1982. *People Types and Tiger Stripe*s, Center for Applications of Psychological Type, Inc., Gainesville, FL.

More Advice for Terry and Chris

Terry teaches a large lecture class and Chris teaches a smaller lecture/discussion class. What are some ways that Terry or Chris could teach all their students?

Depth of Processing: Bloom's Taxonomy

Bloom's taxonomy is a well-known description of levels of educational objectives. It may be useful to consider this taxonomy when defining program and course objectives.

Knowledge	To know specific facts, terms, concepts, principles, or theories
Comprehension	To understand, interpret, compare and contrast, explain
Application	To apply knowledge to new situations, to solve problems
Analysis	To identify the organizational structure of something; to identify parts, relationships, and organizing principles
Synthesis	To create something, to integrate ideas into a solution, to propose an action plan, to formulate a new classification scheme
Evaluation	To judge the quality of something based on its adequacy, value, logic, or use

Relevant Verbs [Gronlund, N. E. (1991). *How to write and use instructional objectives* (4th ed.). New York: Macmillan Publishing Co.]

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
cite	arrange	apply	analyze	arrange	appraise
define	classify	change	appraise	assemble	assess
describe	convert	compute	break down	categorize	choose
identify	describe	construct	calculate	collect	compare
indicate	defend	demonstrate	categorize	combine	conclude
know	diagram	discover	compare	compile	contrast
label	discuss	dramatize	contrast	compose	criticize
list	distinguish	employ	criticize	construct	decide
match	estimate	illustrate	debate	create	discriminate
memorize	explain	interpret	determine	design	estimate
name	extend	investigate	diagram	devise	evaluate
outline	generalize	manipulate	differentiate	explain	explain
recall	give examples	modify	discriminate	formulate	grade
recognize	infer	operate	distinguish	generate	judge
record	locate	organize	examine	manage	justify
relate	outline	practice	experiment	modify	interpret
repeat	paraphrase	predict	identify	organize	measure
reproduce	predict	prepare	illustrate	perform	rate
select	report	produce	infer	plan	relate
state	restate	schedule	inspect	prepare	revise
underline	review	shop	inventory	produce	score
	suggest	sketch	outline	propose	select
	summarize	solve	question	rearrange	summarize
	translate	translate	relate	reconstruct	support
		use	select	relate	value
			solve	reorganize	
			test	revise	

Examples of Program Learning Objectives

Level	Learning Objective
Knowledge	Students can *list* the major theoretical approaches of the discipline.
Comprehension	Students can *describe* the key theories, concepts, and issues for each of the major theoretical approaches.
Application	Students can *apply* theoretical principles to solve real-world problems.
Analysis	Students can *analyze* the strengths and weaknesses of each of the major theoretical approaches for understanding specific phenomena.
Synthesis	Students can *combine* theoretical approaches to explain complex phenomena.
Evaluation	Students can *select* the theoretical approach that is most applicable to a phenomenon and *explain* why they have selected that perspective.

Examples of Course Learning Objectives

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

- Critically analyze the methodology of a research study published in a Sociology journal.
- Design a Web site using HTML and JavaScript.
- Describe the contributions of women to American history.
- Facilitate a group to achieve agreed-upon goals.
- Develop an individual learning plan for a child with a learning disability.
- Analyze blood samples using equipment at local community hospitals.
- Produce a strategic plan for a small manufacturing business.
- Analyze a character's motivation and portray that character before an audience.
- Translate a Spanish newspaper article to English using a dictionary.
- Differentiate among five major approaches to analyzing literature.
- Describe the major ethical issues one must consider when planning a human-subjects study.
- List and describe the functions of the major components of the human nervous system.
- Analyze a tennis player's game and provide effective feedback and training.
- Apply social psychological principles to suggest solutions to contemporary social problems.

Alignment of Course Components and Learning Objectives

Students are more likely to develop deep learning if we give them opportunities to practice and learn at this depth, and if our assignments and grading provide effective formative feedback and motivation. We can't teach and test at the *Knowledge* level and expect students to learn at the *Comprehension, Application, Analysis, Synthesis,* or *Evaluation* level. A cohesive curriculum encourages increasing sophistication as students progress through it, and it helps them to connect learning from specific courses to approach complex problems which require the synthesis and integration of what has been learned.

Give It a Try!

Write one learning objective for a course you teach, and summarize how students will learn it and how you will know they've learned it. Try to define your learning objective using a verb that indicates the desired depth of processing and be sure that the activity and assessment align with this level.

Course Objective (What Students Will Learn)	**Activity** (How Students Will Learn)	**Assessment** (How You Know They Learned)