



How to Write Effective Learning Outcomes

Learning outcomes are... statements of what students are able to **DO** or **demonstrate** as a result of a course.

The purpose of learning outcomes is to...

- facilitate course development and consistency among sites and modalities by encouraging outcome-directed planning
- inform students of the standards and expectations of the course (which helps students learn more effectively and makes it clear what they can hope to gain from a course)
- clarify the intent of instruction and guide the formation of instructional activities (textbook selection, teaching resources, instructional methods, etc.)
- provide a framework for developing assessments to evaluate student learning
- serve as an implicit contract between instructor and students setting up a basis for mutual accountability
- drive curriculum planning (such as the development or revision of courses)
- create a framework for evaluating overall effectiveness of an educational program
- provide evidence of student learning for accreditation and other reporting

Effective learning outcomes...

- are **observable** or **measurable** (quantitatively or qualitatively)
- define or describe what **students** will be able to **do** specifically (one behavior, one verb)
- are stated clearly and concisely
- define **conditions** under which the student is expected to perform the task in terms of the situation, tools, time, space
- define the **criteria, standards or level of performance** evaluating student performance (i.e., degree of accuracy, quantity, quality, frequency...how well it must be performed)
- are realistic to achieve
- include complex or higher-order skills when they are appropriate

Avoid using verbs that are difficult to measure or observe, such as...

- appreciate
- be aware of
- be familiar with (familiarize)
- become acquainted with
- comprehend
- cover
- gain knowledge of
- know
- learn
- realize
- study
- understand

Examples of clear and unclear learning outcomes...

Many learning outcomes are unclear or represent elements of curriculum rather than some action the participants will demonstrate. Note the examples below. If you ask a simple question ("Can it be measured or observed?"), you see readily that the "Ineffective" learning outcomes have shortcomings. They are not measurable or observable. Changing the action verbs can modify the same outcomes. Learners now have a much better idea of what is expected of them.

Ineffective: Participants will understand the nine reasons for conducting a needs assessment.

Effective: Participants will list nine valid reasons for conducting a needs assessment in their own words.

Ineffective: Participants will develop an appreciation of cultural diversity in the workplace.

Effective: Participants will summarize in writing their feelings about cultural diversity in the workplace.

Other examples of effective learning outcomes

- Given 20 examples of incorrect verb tense usage, the student will identify and correct a minimum of 16 instances.
- Using the www.bellinghamherald.com website, the student will correctly identify and print out two examples each of a news article and an editorial regarding a topical news item.
- Given 4 works of short fiction of contrasting genres, the student will analyze and match each work with its correct genre.

The Three Learning Domains

Depending on the course goals, learning outcomes may fall into one of three domains: cognitive, psychomotor, or affective. Will the students be acquiring knowledge (cognitive), developing physical skills (psychomotor) or developing values, ethics, or attitudes (affective)? A college education addresses all of these domains, but various courses and programs are focused more on some domains than others. Examine what knowledge, skills, and attitudes are necessary and significant for the students to acquire during your course. Bloom's (1956) taxonomy of learning differentiates between the following three domains of learning:

- 1. The Cognitive Domain (mind/head):** targets knowledge and intellectual skills
- 2. The Affective Domain (spirit/heart):** targets attitudes, interests, feelings, values, and ethics
- 3. The Psychomotor Domain (body/hands):** targets physical and manipulation skills

The major categories of each domain are described briefly in order, from the simplest ability level to the most complex. Use this list to help select verbs to express distinct performance expectations you have of your students and to create learning outcomes.

1. The Cognitive Domain (mind)

Most courses in higher education focus on the cognitive domain (i.e., knowledge and the development of intellectual skills); thus it is important to examine various levels of cognitive understanding. This domain is broken-down into six categories: it begins with knowledge level learning and advances up the taxonomy to comprehension, application, and then the higher order skills involved in analysis, synthesis, and evaluation or problem solving. Generally, instructors will want to design learning outcomes to target a range of levels of student understanding. The phrasing of learning outcomes will help guide both instructional activities and assessment, thus instructors should carefully select the emphasis of learning and the relevant verb. The categories represent degrees of difficulty (i.e., the first one must be mastered before the next one can take place).

Level I: Knowledge—the student recognizes and recalls facts and specifics (e.g., *Students will list the seasons in order*; also, dates, events, places, vocabulary, key ideas, parts of diagram)

Level II: Comprehension—the student interprets, translates, summarizes, or paraphrases given information. Requires knowledge in order to demonstrate comprehension (e.g., *Students will define "justice" in their own words*; also, find meaning, transfer, interpret facts, infer cause and consequence, give examples)

Level III: Application—the student uses information in a situation different from the original learning context. Requires comprehension of information to be able to apply in a new situation (e.g., *Students will use a math formula to solve a problem*)

Level IV: Analysis—the student separates the whole into its parts, until relationships among elements are clear; requires the ability to apply information in order to analyze (e.g., *Students will reorder the sentences to form a proper paragraph*; also, recognize and explain patterns / meaning)

Level V: Synthesis— the student combines elements to form new entities from the original one. Requires analysis in order to synthesize (e.g., *Students will construct an hypothesis that explains the observed phenomenon*; also, discuss "what if" situations, create new ideas, predict and draw conclusions)

Level VI: Evaluation—the student is involved in acts of decision-making, problem-solving, judging, or selecting based on criteria and rationale; requires synthesis in order to evaluate (e.g., *Students will critique a poem using accepted criteria*; also, make recommendations, assess value and make choices)

List of verbs for the cognitive domain

<u>Knowledge</u>	<u>Comprehension</u>	<u>Application</u>	<u>Analysis</u>	<u>Synthesis</u>	<u>Evaluation</u>
arrange	associate	add	analyze	categorize	appraise
choose	characterize	administer	appraise	combine	arbitrate
complete	classify	apply	arrange	compile	argue
count	complete	calculate	breakdown	compose	assess
define	compute	change	categorize	consolidate	award
describe	convert	choose	combine	construct	compare
draw	defend	classify	compare	create	conclude
duplicate	depict	complete	contrast	design	contrast
identify	describe	compute	critique	devise	criticize
indicate	discuss	conduct	design	drive	critique
know	distinguish	demonstrate	detect	explain	decide
label	establish	discover	develop	formulate	defend
list	estimate	divide	diagram	generate	determine
match	explain	dramatize	differentiate	group	envision
memorize	express	employ	discriminate	hypothesize	estimate
name	extend	examine	distinguish	integrate	evaluate
order	extrapolate	graph	examine	merge	examine
outline	generalize	implement	experiment	modify	grade
point	give example	interpolate	explore	order	inspect
quote	identify	interpret	illustrate	organize	interpret
read	illustrate	manipulate	infer	plan	judge
recall	infer	modify	inventory	prescribe	justify
recite	locate	operate	investigate	propose	measure
recognize	paraphrase	perform	outline	rearrange	prioritize
record	predict	practice	point out	reconstruct	rank
repeat	recognize	prepare	question	relate	rate
reproduce	relate	prescribe	relate	reorganize	recommend
restate	report	produce	research	revise	referee
retain	review	role play	select	rewrite	review
select	rewrite	show	separate	specify	support
state	sort	sketch	subdivide	summarize	test
write	summarize	solve	test	synthesize	value
	translate	subtract	utilize	systematize	
		translate		theorize	
		use		transform	
				unite	
				write	

2. The Affective Domain (heart/spirit)

This domain includes the manner in which students deal with things emotionally, such as feelings, values, appreciation, enthusiasms, motivations, and attitudes. The five major categories listed in order are...

Level I: Receiving—students show awareness of the benefits of a particular value, attitude or interest; receiving is concerned with holding and directing the student's attention (e.g., *the student listens attentively*)

- accept differences of
- acknowledge
- ask
- attend closely to
- choose
- describe
- follow
- give
- identify
- listen attentively
- reply
- show sensitivity
- tolerate

Level II: Responding—refers to active participation on the part of the student (e.g., *the student willingly answers questions*)

- agree (to)
- answer
- ask
- assist
- communicate
- complete assignments
- comply
- conform
- consent
- contribute
- cooperate
- discuss
- enjoy helping others
- exhibit
- follow-up
- greet
- help
- indicate
- inquire
- label
- obey rules
- participate in discussions
- pursue
- question
- react
- read
- reply
- report
- request
- respond
- seek
- select
- show interest in
- show preference
- visit
- volunteer for

Level III: Valuing—the student sees personal worth in a value, belief, attitude, or interest (assignment); displays behavior in situations where s/he is not forced to comply or obey (e.g., *the student expresses strong opinions on issues under discussion*)

- accept
- adhere to
- adopt
- approve
- choose
- commit
- complete
- demonstrate belief in or commitment to
- demonstrate problem-solving attitude
- describe
- desire
- differentiate
- display
- endorse
- exhibit
- explain
- express
- form
- initiate
- integrate
- invite
- join
- justify
- prefer
- propose
- read
- report
- sanction
- select
- share
- show concern for
- work

Level IV: Organizing—the student is committed to building a set of values as displayed by behavior (e.g., *the student criticizes arguments and positions presented in class*)

- accept responsibility for
- adapt
- adhere
- alter
- arrange
- categorize
- classify
- combine
- compare
- complete
- defend
- establish
- explain
- formulate a plan
- generalize
- group
- identify
- integrate
- modify
- order
- organize
- perform
- prepare
- rank
- rate
- recognize the need for / role of
- relate
- resolve
- solve
- synthesize
- systemize
- weigh alternatives

Level V: Internalizing—the student's total behavior is consistent with internalized values (e.g., *the student demonstrates self-reliance in working independently*)

- act
- advocate
- behave
- characterize
- conform
- continue
- defend
- demonstrate industry,
- punctuality, self-discipline, and self-reliance
- devote
- disclose
- discriminate
- display
- encourage
- endure
- exemplify
- function
- incorporate
- influence
- justify
- listen
- maintain
- modify
- pattern
- perform
- practice co-operation in
- preserve
- propose
- qualify
- question
- retain
- revise
- serve
- support
- uphold
- use objective approach in problem solving

3. The Psychomotor Domain (body)

The psychomotor domain includes physical movement, coordination, and use of the motor-skill areas. Development of these skills requires practice and is measured in terms of speed, precision, distance, procedures, or techniques in execution. The major categories listed in order are...

Level I: Imitation—The student observes skills and attempts to repeat them.

- assemble
- attempt
- carry out
- copy
- calibrate
- construct
- dissect
- duplicate
- follow
- mimic
- move
- practice
- proceed
- repeat
- reproduce
- respond
- organize
- sketch
- start
- try
- volunteer

Level II: Manipulation—The student continues to practice a particular skill or sequence until it becomes habitual and the action can be performed with some confidence and proficiency. The response is more complex than at the previous level, but the learner still is not sure of him/herself.

- same as level I
- acquire
- assemble
- complete
- conduct
- do
- execute
- improve
- maintain
- make
- manipulate
- operate
- pace
- perform
- produce
- progress
- use

Level III: Precision—The student reproduces a skill with accuracy, proportion, and exactness, requiring a minimum of energy; usually performed without hesitation.

- same as level I and II
- achieve
- accomplish
- advance
- automatize
- exceed
- excel
- master
- reach
- refine
- succeed
- surpass
- transcend

Level IV: Articulation—involves an even higher level of precision. The skills are so well developed that the student can modify movement patterns to fit special requirements or to meet a problem situation.

- adapt
- alter
- change
- excel
- rearrange
- reorganize
- revise
- surpass
- transcend

Level V: Naturalization—The student's response is automatic. The student begins to experiment, creating new motor acts or ways of manipulating materials out of understandings, abilities, and skills developed. The student acts "without thinking" (e.g., *the student will develop a new and comprehensive training programming or create a new gymnastics routine*).

- arrange
- combine
- compose
- construct
- create
- design
- refine
- originate
- transcend

