

# **Writing Learning Outcomes**

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## What are Learning Outcomes?

Learning outcomes are statements that describe the desired qualities of students at the completion of a learning experience. Whether the learning experience is a single activity, a class session, a course or a set of courses, learning outcomes provide guidance in how to measure whether students achieved the intended learning. For this reason, it is important that they be written in a way that they may be easily measured.

## Constructing Outcomes

To construct outcomes, you can follow the A-B-C and sometimes D formula:

- A** Audience
- B** Behavior
- C** Condition
- D** Degree

Here is an example of an outcome written using this formula:

the student	<b>A</b> udience	
will apply appropriate techniques for addressing a policy decision problem	<b>B</b> ehavior	
when given one,	<b>C</b> ondition	
90% of the time.	<b>D</b> egree	

As implied above, not all outcomes will state a degree. In fact, it is more likely they will not. Note also that the order of the A-B-C and sometimes D parts is not important. We could have written the objective this way:

Given a policy decision problem,	<b>C</b> ondition	
the student	<b>A</b> udience	
will apply appropriate techniques for addressing it	<b>B</b> ehavior	
90% of the time.	<b>D</b> egree	

Here are other examples of learning outcomes:

1. For a given decision, students can predict channel-wide costs (effects on other parts of the channel).
2. Given information about successful business ventures, students will identify the organizational factors that contributed to their success.
3. Given pricing information about spot and forward markets, students will use arbitrage arguments to identify mispricings.

Notice that they are all easily measurable; as you read them, you can easily imagine test questions, projects or problems that would reveal whether (and the degree to which) the objectives have been met.

## A Word About Verbs

As you can see in the above examples, it is important to use an **action** verb. Consider the following statement:

The student will *understand* the considerations involved in managing a venture portfolio.

How is this to be measured? Does it mean that students should be able to list the considerations? Does it mean that the student should apply the considerations in an analysis? The word “understand” is simply not descriptive enough to lead to good measurement.

It’s important to be specific. That specificity also lets you think about the level of the outcome.

## About Outcome Levels

Educators recognize that there is a taxonomy of learning outcomes. How students in one course interact with knowledge content in one course may be at a different level than the way student in another course interact with that same knowledge content. Most researchers and developers ascribe to the taxonomy defined by Benjamin Bloom:

<b>Evaluation</b>	The student is expected to critically assess theories and presentations and make reasoned decisions based on valid evidence.
<b>Synthesis</b>	The student is expected to combine and/or modify different methods, concepts and theories to create new ones.
<b>Analysis</b>	Students are expected to identify components and organize or recombine them. This level also covers pattern identification.
<b>Application</b>	Students are expected to use methods, concepts and theories in new situations.
<b>Comprehension</b>	Students are expected to interpret, compare and contrast information.
<b>Knowledge</b>	Students are expected to recognize and recall facts like dates or terminology. This level also covers basic knowledge of concepts and procedures.

As you are thinking about outcomes, it is a good idea to identify where they fit within this taxonomy. While the ultimate goal of education is to get students functioning at the upper levels of this taxonomy, this level may not be appropriate for *your* students. Remember that we need to learn how to walk before we run; it is not realistic to expect students to jump straight to the top of the taxonomy.

Once you have identified the level for the outcome, make sure your choice of verb corresponds. Here is a list of verbs, categorized by level:

**KNOWLEDGE: THE ABILITY TO RECALL INFORMATION.**

arrange	list	name	recall
define	match	order	repeat
duplicate	memorize	recognize	reproduce
label			

**COMPREHENSION: INTERPRETING INFORMATION IN ONE'S OWN WORDS.**

classify	express	recognize	select
describe	identify	report	sort
discuss	indicate	restate	tell
explain	locate	review	translate

**APPLICATION: USING KNOWLEDGE IN A NOVEL SITUATION.**

apply	employ	prepare	sketch
choose	illustrate	practice	solve
demonstrate	interpret	schedule	use
dramatize	operate		

**ANALYSIS: BREAKING DOWN KNOWLEDGE INTO PARTS AND SHOWING INTERRELATIONSHIPS.**

analyze	contrast	discriminate	inventory
appraise	criticize	distinguish	question
calculate	diagram	examine	test
compare	differentiate	experiment	

**SYNTHESIS: BRINGING TOGETHER PARTS OF KNOWLEDGE TO FORM A WHOLE AND SOLVE A PROBLEM.**

arrange	construct	manage	propose
assemble	create	organize	set up
collect	design	plan	synthesize
compose	formulate	prepare	write

**EVALUATION: MAKING JUDGMENTS ON THE BASIS OF CRITERIA.**

appraise	choose	evaluate	score
argue	compare	judge	select
assess	defend	predict	support
attack	estimate	rate	value

**Affective Domain**

Sometimes we are concerned with how students *feel*, rather than how they're *thinking*. Educational researchers refer to this as the affective (v. the cognitive) domain. If you have outcomes for this domain, you may find the following list of verbs helpful in describing the outcomes in measurable terms.

**OBSERVABLE VERBS IN THE AFFECTIVE DOMAIN**

agree	avoid	engage in	praise
argue	challenge	help	resist
assume	cooperate	join	share
attempt	defend	offer	volunteer
attend to	disagree	participate	