Tips on How to Write Learning Objectives

Learning Objectives

- What Are Learning Objectives?

- Writing Learning Objectives

- Examples of Learning Objectives

- Learning Objectives and Measurable Outcomes

What Are Learning Objectives?

It may be best to start with what learning objectives aren't: They aren't simply a list of the topics to be covered in the course. Certainly, there will be a body of knowledge that students should know and understand by the time the course is complete. But if the goals for what students should achieve stops there, there may be many missed opportunities for providing them with a more productive learning experience.

A learning objective should describe what students should know or be able to do at the end of the course that they couldn't do before. Learning objectives should be about student performance. Good learning objectives shouldn't be too abstract ("the students will understand what good literature is"); too narrow ("the students will know what a ground is"); or be restricted to lower-level cognitive skills ("the students will be able to name the countries in Africa.").

Each individual learning objective should support the overarching goal of the course, that is, *the thread that unites all the topics that will be covered and all the skills students should have mastered by the end of the semester. Best practice dictates that learning objectives be kept to no more than half a dozen.*

Writing Learning Objectives

Experts often talk about using the acronym S—K—A to frame learning objectives. SKA stands for:

Skills   What students should be able to do by the time the course is completed.

Knowledge   What students should know and understand by the time the course is completed.

Attitudes   What the students' opinions will be about the subject matter of the course by the time it is completed.

It is best to identify the skills, knowledge, and attitudes the students should gain throughout the course by writing sentences that begin:
By the time the students finish the course, they should be able to . . .
and then supplying a strong, action verb.   Examples of verbs that define student performance in a particular area include:

- explain
- list
- describe

- demonstrate
- calculate
- report

- compare
- analyze

After your objective is written, drop the **boldface** phrase above to simply begin the objective with the strong, action verb.

Some instructors use well-defined learning taxonomies to create their course objectives. Learning taxonomies, the most well-known of which is Bloom's *Taxonomy of Objectives for the Cognitive Domain* (1956), categorize cognitive tasks, usually in increasingly sophisticated order. A group of educators, led by Benjamin Bloom, identified a hierarchy of six categories of cognitive skills: *knowledge, comprehension, application, analysis, synthesis* and *evaluation*. As students learn, they start with the *knowledge* level and progress through the hierarchy. Thus, advanced courses should include skills at a higher level than introductory or basic skills courses. On the next page you will find a list of measurable verbs to assist you in writing course objectives.

Examples of Learning Objectives

The following are examples of learning objectives drawn from several courses at MIT (course numbers are in parentheses):

From a physics course on electromagnetism (8.02T)
> The overall goal is to be able to **explain** the enormous variety of electromagnetic phenomena in terms of a few relatively simple laws.

From the introductory course in the department of Aeronautics and Astronautics (16.01-16.04)
> Students will be able to **demonstrate** an understanding of the fundamental properties of linear systems, by explaining the properties to others.

From a course in managerial communication (15.279)
> By the time you complete 15.279, you should be able to **formulate** an effective communication strategy by selecting appropriate content, organizational structure, and media.

Learning Objectives and Measurable Outcomes

Ideally, learning objectives should be accompanied by measurable outcomes, which describe ways in which students will be asked to demonstrate that they have achieved the learning objectives. Methods of assessment of student learning can take many forms—exams (written or oral), papers, oral presentations, team projects. Criteria for success (often called rubrics) should be developed so that students understand what is expected of them, and so that they can use feedback to see where they need to strengthen their performance.

List of Measurable Verbs Used to Assess Learning Outcomes

Knowledge Level: The successful student will recognize or recall learned information.

list	record	underline
state	define	arrange
name	relate	describe
tell	recall	memorize
recall	repeat	recognize
label	select	reproduce

Comprehension Level: The successful student will restate or interpret information in their own words.

explain	describe	report
translate	express	summarize
identify	classify	discuss
restate	locate	compare
discuss	review	illustrate
tell	critique	estimate
reference	interpret	reiterate

Application Level: The successful student will use or apply the learned information.

apply	sketch	perform
use	solve	respond
practice	construct	role-play
demonstrate	conduct	execute
complete	dramatize	employ

Analysis Level: The successful student will examine the learned information critically.

analyze	inspect	test
distinguish	categorize	critique
differentiate	catalogue	diagnose
appraise	quantify	extrapolate
calculate	measure	theorize
experiment	relate	debate

Synthesis Level: The successful student will create new models using the learned information.

develop	revise	compose
plan	formulate	collect
build	propose	construct
create	establish	prepare
design	integrate	devise
organize	modify	manage

Evaluation Level: The successful student will assess or judge the value of learned information.

review	appraise	choose
justify	argue	conclude
assess	rate	compare
defend	score	evaluate
report on	select	interpret
investigate	measure	support