Tips on How to Write Learning Objectives

Learning Objectives

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

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

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

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

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

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

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

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

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

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

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