

Writing Instructional Objectives¹

R. Kirby Barrick and Andrew C. Thoron²

Introduction

Regardless of the teaching and learning theory we use or the content we teach, good teaching begins with well-written instructional (or learning or performance) objectives. These objectives identify the knowledge, skills, and abilities that students will possess upon successfully learning the criterion material. Instructional objectives outline what the student will know or be able to do and are different from teaching strategies, which outline what the instructor will do to help students learn. Clear instructional objectives lead to how student learning will be assessed and hopefully make it easier to assess student learning.

What is an objective?

A behavioral (performance) objective is “an intent communicated by a statement describing a proposed change in a learner – a statement of what the learner is to be like when he/she has successfully completed a learning experience” (Mager, 1975). Or, a behavioral (performance) objective is a statement of an observable behavior that the learner is to exhibit at the close of a program, course, or learning session. Stated in another way, a behavioral (performance) objective is a description of a proposed behavioral change the teacher wants to bring about in a learner—change in either the cognitive, psychomotor, or affective domain of learning. The objectives for the lesson are typically shared with the learners so they know what is expected of them.

A performance objective is a three-part statement of what, in measurable terms, the learner must do to master a behavior (performance). A true performance objective has three identifiable parts: (1) a description of the behavior (performance); (2) the conditions under which the behavior (performance) will be measured; and (3) the criterion which states how well the behavior must be performed to be considered mastered.

Three Types of Objectives

Another dimension of writing performance objectives relates to the different types of performances that can be specified. These performances include **knowing certain information** (classified as the cognitive domain), **performing certain physical activities** (classified as the psychomotor domain), and **exhibiting certain personal qualities or attitudes** (classified as the affective domain).

The **cognitive domain** includes those performances that require knowledge of specific information; e.g., the principles, concepts, and generalizations necessary for problem solving.

The **psychomotor domain** measures the skill performance of the learner and, therefore, the performance required involves the manipulation of objects, tools, supplies, or equipment.

1. This document is AEC583, one of a series of the Agricultural Education and Communication Department, UF/IFAS Extension. Original publication date January 2016. Visit the EDIS website at <http://edis.ifas.ufl.edu>.

2. R. Kirby Barrick, professor; and Andrew C. Thoron, assistant professor, Agricultural Education and Communication Department; UF/IFAS Extension, Gainesville, FL 32611.

In the **affective domain** the performance required involves the demonstration of feelings, attitudes, or sensitivities toward other people, ideas, or things.

Writing Performance Objectives

A performance objective is a statement which describes what the learner must do to demonstrate mastery of a task. All performance objectives include three basic components: (1) condition, (2) performance, and (3) criterion.

Condition

The condition component of an objective informs the learners of what conditions or restrictions will be imposed when they are demonstrating mastery. The condition component of an objective can describe what equipment, tools, supplies, or resources the learner will be given to work with; any items the learner will not have access to; the environment or setting where the competency must be performed; and/or what information the learner may be provided that will direct the action in a certain way. Some examples of condition statements are:

1. Given a set of blueprints...
2. Without the aid of a calculator...
3. Using a case study provided by the instructor...
4. Given a malfunctioning one-cylinder gasoline engine...

Performance

The performance component of an objective is a statement of the actual competency. This statement identifies the performance or behavior that a student will be required to demonstrate. The “behavior” component of a performance objective should be precise, observable, and measurable. One of the easiest ways to ensure that a performance is well-stated is to use an action verb: *The learner will be able to [action verb]*. A list of potential verbs to be used in writing objectives is included at the end of this document (Crunkilton & Krebs, 1982).

Criterion

The third component of an objective is called the criterion or standard. The criterion tells learners the quantity and quality of how they are expected to perform the competency. There are several ways in which the criterion can be established, including (1) specification of tolerance limits, (2) speed, (3) maximum number of permissible errors, (4) reference to other materials that specify standards,

(5) degree of excellence, or (6) any combination of the above. Each criterion should be based on the actual performance level needed, including “to the satisfaction of the instructor.”

Example Objectives

- Given a set of blueprints, calculate the square feet in each of the rooms, within two percent of the actual.
- Without the aid of a calculator, accurately compute the amount of 16-4-8 fertilizer to apply to achieve one pound of nitrogen per 1,000 square feet of a St. Augustine lawn.
- Using a case study provided by the instructor, recommend the steps that need to be taken to increase poinsettia productivity, to the satisfaction of the greenhouse manager.
- Given a malfunctioning one-cylinder gasoline engine, identify and correct the malfunction for normal operating output.

Classification of Educational Objectives

Bloom (1956) served as editor of the taxonomy of educational objectives in the cognitive domain. While additional authors have edited or refined Bloom’s work over the years (Anderson & Krathwohl, 2001), the initial system of defining six levels of cognition are still useful in preparing instruction objectives. These levels are described as follows (Bloom, 1956; Cruickshank, Bainer, & Metcalf, 1995).

- I. Knowledge: Learners have knowledge and the ability to recall or recognize information.
 - A. Knowledge of specifics (terminology and facts)
 - B. Knowledge of ways and means of dealing with specifics
 1. Characteristic way of presenting ideas and phenomena
 2. Processes and directions
 3. Classes, sets, and divisions fundamental to a subject field
 4. Criteria by which facts, principles, and conduct are tested
 5. Methods of inquiry, techniques, and procedures employed in a subject field in investigating problems
 - C. Knowledge of universals and abstractions

1. Principles and generalizations
 2. Theories and structures
- II. Comprehension: Learners understand and can explain knowledge in their own words.
- A. Translation—accuracy with which the communication is paraphrased from one language to form another
 - B. Interpretation—explanation or summarization of a communication
 - C. Extrapolation—extension of trends beyond given data to determine implications
- III. Application: Learners apply knowledge and are able to use it in practical situations.
- A. Use of abstractions in particular and concrete situations
 - B. Abstractions may be general ideas, rules of procedure, technical principles, and theories
- IV. Analysis: Learners are able to break down complex concepts into simpler, related parts.
- A. Analysis of elements—recognize unstated assumptions; distinguish facts from hypotheses
 - B. Analysis of relationships—comprehending interrelationships
 - C. Analysis of organizational principles—systematic arrangement and structure
- V. Synthesis: Learners are able to combine elements to form a new, original entity.
- A. Production of a unique communication
 - B. Production of a plan or proposed set of operations
 - C. Derivation of a set of abstract relations
 1. Abstract relations to classify or explain data or phenomena or formulate hypotheses
 2. Deduction of propositions and relations
- VI. Evaluation: Learners are able to make quantitative and qualitative judgments about the extent to which material and methods satisfy criteria.

- A. Judgments in terms of internal evidence—logical accuracy; consistency
- B. Judgments in terms of external criteria—evaluation with reference to selected or remembered criteria

To assist instructors in identifying the knowledge, skills, and abilities that are desired in their students, a list of action verbs can be useful. By beginning each instructional objective with “Upon successful completion, the student will be able to...” followed by an action verb, the teacher will ensure that each objective clearly states the performance and is student-focused rather than teacher-centered. The following list of Action Verbs for Writing Objectives can assist in ensuring that a performance is always stated in the objective.

Summary

When teaching starts with a set of appropriate instructional objectives, the teaching strategies and the assessment of student performance usually becomes obvious. Clear teaching, centered on performance objectives, leads to student success.

References

- Anderson, L.W. (Ed.), Krathwohl, D.R. (Ed.), Airasian, P.W., Cruickshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J., & Wittrock, M.C. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of Educational Objectives* (Complete edition). New York, NY: Longman.
- Bloom, B. S. (Ed.) (1956). *Taxonomy of educational objectives, Handbook I: Cognitive domain*. New York, NY: David McKay.
- Cruickshank, D. R., Bainer, D. L., & Metcalf, K. K. (1995). *The act of teaching*. New York, NY: Mc-Graw-Hill.
- Crunkilton, J. R., & Krebs, A. H. (1982). *Teaching agriculture through problem solving*. Danville, IL: Interstate Printers & Publishers.
- Mager, R. F. (1984). *Preparing instructional objectives* (2nd ed.). Belmont, CA: David S. Lake.

Table 1. Action verbs for writing objectives in six levels of the cognitive domain.

Knowledge	Analysis	Comprehension	Synthesis	Application	Evaluation
acquire	analyze	associate	arrange	apply	appraise
count	construct	classify	categorize	calculate	assess
define	detect	compare	combine	change	compare
draw	diagram	compute	construct	classify	critique
identify	differentiate	contrast	create	complete	determine
indicate	explain	convert	design	demonstrate	evaluate
label	infer	describe	develop	discover	grade
list	outline	differentiate	explain	employ	judge
match	separate	discuss	formulate	examine	justify
name	subdivide	distinguish	generate	illustrate	measure
outline	summarize	estimate	generalize	manipulate	rank
point		explain	integrate	operate	rate
quote		extrapolate	organize	practice	recommend
read		interpret	plan	prepare	select
recall		interpolate	prepare	produce	support
recite		predict	prescribe	relate	test
recognize		rewrite	produce	solve	
record		translate	propose	use	
repeat			rearrange	utilize	
state			reconstruct		
tabulate			specify		
trace			summarize		
write					