

The A.B.C.D. Method of Writing Measurable Objectives

A well-written learning objective provides a clear picture of the performance you expect as a result of the lesson. Robert Mager argued that learning objectives should be specific, measurable objectives that both guide instructors and aid students in the learning process. Mager's ABCD model for learning objectives includes four elements: audience, behavior, condition, and degree of mastery needed. Educational psychologist Robert Gagne wrote in his book, *The Principles of Instructional Design*, that we should ask 'What will the learner be able to do after the instruction, that they couldn't (didn't) do before?' or 'How will the learner be different after the instruction?' The answers to these questions will be the foundation of the learning objectives and identify the desired outcome.

The following table illustrates Mager's ABCD Model for instructional objectives:

1. **Audience (A)** – Who? Who are your learners?
2. **Behavior (B)** – What? What do you expect them to be able to do? This should be an overt, observable behavior, even if the actual behavior is covert or mental in nature. If you can't see it, hear it, touch it, taste it, or smell it, you can't be sure your audience really learned it.
3. **Condition (C)** – How? Under what circumstances or context will the learning occur? What will the student be given or already be expected to know to accomplish the learning?
4. **Degree (D)** – How much? How much will be accomplished, how well will the behavior need to be performed, and to what level? Do you want total mastery (100%), do you want them to respond correctly 80% of the time, etc. A common (and totally non-scientific) setting is 80% of the time.

Examples of Well-Written Objectives

Below are some example objectives which include **Audience (A)**, **Behavior (B)**, **Condition (C)**, and **Degree of Mastery (D)**. Note that many objectives actually put the condition first.

Cognitive (comprehension level) -"C: **Given examples and non-examples of constructivist activities** A: **the student** B: **will be able to accurately identify the constructivist examples and explain why each example is or isn't a constructivist activity** D: **in 20 words or less.**"

Cognitive (application level) -"C: **Given a sentence written in the past or present tense**, A: **the student** B: **will be able to re-write the sentence in future tense** D: **with no errors in tense or tense contradiction** (i.e., I will see her yesterday.)."

Cognitive (problem solving/synthesis level) -"C: **Given two cartoon characters of the student's choice**, A: **the student** B: **will be able to list five major personality traits of each of the two characters, combine these traits (either by melding traits together, multiplying together complimentary traits, or negating opposing traits) into a composite character, and develop a short (no more than 20 frames) storyboard for a cartoon** D: **that illustrates three to five of the major personality traits of the composite character.**"

Psychomotor - "C: **Given a standard balance beam raised to a standard height**, A: **the student** C: **(attired in standard balance beam usage attire)** B: **will be able to walk the entire length of the balance beam (from one end to the other)** D: **steadily, without falling off, and within a six second time span.**"

Affective - "C: **Given the opportunity to work in a team with several people of different races**, A: **the student** B: **will demonstrate a positive increase in attitude towards non-discrimination of race**, D: **as measured by a checklist utilized/completed by non-team members.**"

Notes on Objective Writing

- choose correct key verbs (Revised Blooms Taxonomy) to express the desired behavior
- Avoid using language that is unclear or cannot be objectively measured.

Typical Problems Encountered When Writing Objectives

Objective Writing Problems with Solutions		
Problems	Error Types	Solutions
Too vast/complex	The objective is too broad in scope or is actually more than one objective.	Use the ABCD method to identify each desired behavior or skill in order to break objectives apart.
No behavior to evaluate	No true overt, observable performance listed. Many objectives using verbs like "comprehend" or "understand" may not include behaviors to observe.	Determine what actions a student should demonstrate in order for you to know of the material has been learned.
Only topics are listed	Describes instruction, not conditions. That is, the instructor may list the topic but not how he or she expects the students to use the information.	Determine how students should use the information presented. Should it be memorized? Used as background knowledge? Applied in a later project? What skills will students need?
Vague Assignment Outcomes	The objective does not list the correct behavior, condition, and/or degree, or they are missing. Students may not be sure of how to complete assignments because they are lacking specifics.	Determine parameters for your assignments and specify them for your students.