AO Foundation

# Guidelines for writing Learning Outcomes

*The purpose of this document is to better assist you as AO faculty in writing performance-based learning outcomes. In order to improve quality education learning outcomes must be observable, measurable, and focused on the learner. Learning outcomes are important in that they clearly communicate the direction of the curricular content, define faculty and learner responsibilities, and enable the evaluation of the learners and the curriculum. Please follow the provided guidelines in the development of performance-based learning outcomes for your presentations, small group discussions, and practical exercises. Please note that the terms learning outcomes and learning objectives are used interchangeably in this document.*

## Goal of a performance-based learning objective

Describe the behavior in measurable terms that you, a faculty member, would expect to observe of the learner upon completion of this learning activity.

| Do | Don't |
|---|---|
| Describe the **observable** action that you would expect to see the learner "doing" upon completion of the learning activity. | Do not describe the **instruction** that you, the faculty member, will perform in order to teach the learner. |
| Use **measurable terms** to describe the actions of the learner. | Do not use **unmeasurable terms** such as understand, know, be familiar with, comprehend, learn, or appreciate |
| Describe **only one** action in each objective. | Combine **more than one** action using "and." |
| Write learning outcomes that are **supported by the content** of the learning activity. | Do not write a learning objective **based on content that is insufficiently addressed**. |

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## Verb Selection Guide to Writing Performance-Based Learning Outcomes

The following is a quick tool for faculty to use when writing learning outcomes that allow the participant to demonstrate the depth to which they can apply their new knowledge. The higher the level, the more rigorous the cognitive demand, so we encourage high level outcomes.

The associated verbs provided below are a partial list and do not constitute an official AAFP list. They are meant to provide examples for those unfamiliar with either taxonomy

# BLOOM'S

### Bloom's Level 2
## Knowledge

**BRIEF EXAMPLE:**

- Recall elements and details of a diagnosis.
- Conduct calculations.
- List typical symptoms.
- Identify scientific concepts/relationships.
- Perform routine procedures.
- Describe treatment options.

**ASSOCIATED VERBS**

Arrange
Calculate
Define
Describe
Identify
Label
List
Match
Match
Measure
Memorize
Name
Quote
Recall
Recite
Recognize
Repeat
Report
Review
State
Tabulate
Tell
Use

### Bloom's Level 2
## Comprehension

### Bloom's Level 3
## Application

**BRIEF EXAMPLE:**

- Summarize a patient's history.
- Solve routine multiple-step problems.
- Relate the cause and effect of a particular event.
- Identify patterns in behavior.
- Interpret data.

**ASSOCIATED VERBS**

Categorize
Cause/Effect
Classify
Collect
Compare
Construct
Determine
Display
Distinguish
Estimate
Graph
Identify Patterns
Infer
Interpret
Make Observations
Modify
Organize
Perform
Predict
Relate
Separate
Show
Summarize

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**Tips** (verb samples on last page)

1. Start with a measurable verb followed by a description of the action that the learner will take.
2. When necessary, for the sake of clarity, a learning objective may also need to specify the conditions in which the action will occur (eg, specific information to clarify clinical focus and/or patient characteristics).
3. Use the top four levels of Bloom's Taxonomy to aid in the selection of appropriate verbiage.
4. Be careful when using verbs such as *describe, explain, review, discuss,* or *summarize*. They imply that the learner will communicate verbally with someone. These verbs should be used in the context of communicating with the patient, and not used to describe something that a faculty member would do (ie, explain a concept at a live CME activity).

# TAXONOMIE

## Bloom's Level 4
## Analysis

**BRIEF EXAMPLE:**

- Support ideas with details and examples.
- Develop a scientific model for a complex situation.
- Assess by exam.
- Determine a patient's motivation for treatment and describe how it affects the interpretation of a diagnosis.

**ASSOCIATED VERBS**

Apprise
Assess
Cite Evidence
Construct
Coordinate Care
Critique
Develop a Diagnosis
Diagnose
Differentiate
Draw Conclusions
Explain Concepts
Formulate
Hypothesize
Improve
Investigate
Prescribe
Revise
Solve a Problem
Use Concepts to

## Blooms' Level 5
## Synthesis

**BRIEF EXAMPLE:**

- Apply new concepts to a current problem or situation.
- Analyze and synthesize information from multiple sources.
- Design resource tools to inform patients and solve practical or abstract problems.
- Critique literature and formulate an opinion.
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**ASSOCIATED VERBS**

Analyze
Apply Concepts
Connect
Choose
Confirm
Counsel
Create
Critique
Design
Determine
Establish
Evaluate
Integrate
Manage
Prove
Rate
Recommend
Select
Synthesize
Validate
Verify

## Bloom's Level 6
## Evaluation

Reference:
Bloom, Benjamin S. & David R. Krathwohl. (1956). Taxonomy of educational outcomes: The classification of educational goals, by a committee of college and university examiners. Handbook 1: Cognitive domain. New York , Longmans.
http://www.nova.edu/hpdtesting/ctl/forms/bloomstaxonomy.pdf

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## Examples

| Poor Wording | Better Wording | *Why?* |
|---|---|---|
| Understand how to modulate pain therapy by addressing psychological and personality issues. | Modulate pain therapy by addressing psychological and personality issues in patients with chronic pain. | *The term "understand" is not measurable; and context regarding the patient's condition is absent.* |
| Explain the benefits of various exercise modalities for an elderly person. | Determine the most appropriate exercise modality for health maintenance in the patient who is elderly. | *The learning objective described the instructional method used by the faculty member—the faculty member did the explaining.* |
| Become familiar with common eye problems. | Screen for eye conditions commonly associated with type 2 diabetes. | *The objective is unmeasurable, does not describe the action that the learner should be able to take, and does not describe the context regarding the patient's condition.* |
| Formulate a diagnosis and management plan for each of the above. | Formulate a sequential diagnosis procedure for the patients with medical complications of pregnancy. Develop a management plan for commonly diagnosed medical complications of pregnancy. | *Assume this learning objective is the third of four. It refers to previously stated outcomes and combines two separate actions: diagnosis and management. Each objective must stand alone without reference to other outcomes.* |
| List types of abnormal pulmonary functions. | Given the calculated results of tests compared with predicted normal values, determine the presence or absence of abnormal pulmonary function and classify it as to type and severity. | *The verb "list" is too low of mental function for adult learners, let alone physicians.* |

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