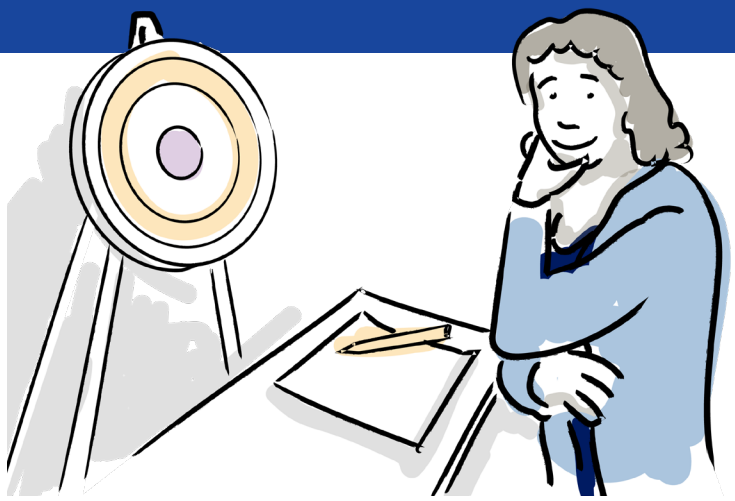
AO Education Institute

10 tips on writing learning objectives



Well-formulated learning objectives are the chain that links content, topic, and methods as well as the structure of your learning activity.

Based on Bloom (Bloom, 1956), there are six levels of performance-based learning objectives that allow you to demonstrate the depth of learning outcomes in three domains of educational activities: knowledge, skills, and attitude.

Learning objectives appear on different levels, such as the learning objectives of a whole educational event, eg, a course or at the beginning of a lecture, small group discussion, or practical exercise. They should always be written with the leaner in mind, ie, what the learner should learn (based on their needs) and not what I as a faculty member would like to teach.

Knowledge

This domain involves knowledge and the development of theoretical skills. This includes the recall or recognition of specific facts, procedural patterns, and concepts that serve in the development of theoretical abilities and skills. There are six major categories, which are listed in order below, starting from the simplest behavior to the most complex. The categories can be thought of as degrees of difficulties. That is, the first one must be mastered before the next one can take place. The higher the level (which AO encourages) the more rigorous the cognitive demand.

Skills

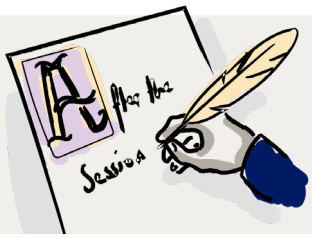
The skills domain includes physical movement, coordination, and use of motor-skills. Development of these skills requires practice and is measured in terms of speed, precision, distance, procedures, or techniques in execution.

Attitudes

This domain includes the way we deal with things emotionally, such as feelings, values, appreciation, enthusiasm, motivation, and attitudes.

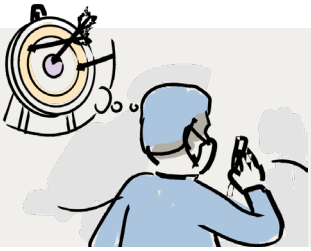
1 Start with the sentence:

After the session/lecture/webinar/etc, the learner will be able to...
then use a measurable verb followed by a description of the action that the learner will take.



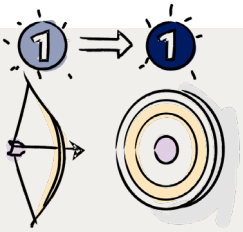
2 Use measurable terms; please refer to the list below.

DO NOT USE verbs that cannot be measured such as: understand, know, be familiar with, comprehend, learn, appreciate, etc.



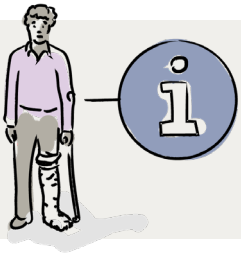
3 Describe an observable action that you expect the learner to do after completing the learning activity.

4 Describe only one action per learning objective.



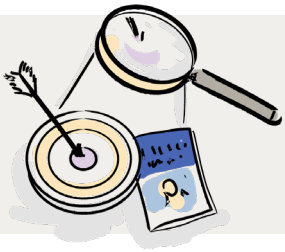
5 When using verbs such as describe, explain, review, discuss, or summarize it implies the learner will communicate verbally with someone.

6 Ensure the learning objectives are supported by the content of the learning activity.



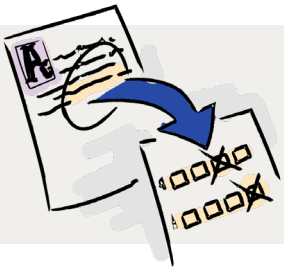
7 Specify the conditions in which the action will occur (eg, specific information to clarify clinical focus and/or patient characteristics).

8 Make sure the learning objectives are expressed from the learner's perspective.



9 Check that the learning objectives are distinct and specific to the educational activity.

10 Does the learning objective contain a criterion on which the learners are to be evaluated?



Verb selection guide to writing performance-based learning objectives—adapted from Bloom's taxonomy

Knowledge

Bloom's Level 1
Knowledge: Exhibits previously learned material by recalling facts, terms, basic concepts and answers.

Application

Bloom's Level 3
Application: Solving problems by applying acquired knowledge, facts, techniques, and rules in a different way.

Analysis

Bloom's Level 4
Analysis: Examining and breaking information into parts by identifying motives or causes; making inferences and finding evidence to support generalizations.

Synthesis

Blooms' Level 5
Synthesis: Compiling information together in a different way by combining elements in a new pattern or proposing alternative solutions.

Comprehension

Bloom's Level 2
Comprehension: Demonstrating understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions and stating main ideas.

Evaluation

Bloom's Level 6
Evaluation: Presenting and defending opinions by making judgments about information, validity of ideas or quality of work based on a set of criteria.

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

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

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

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

Examples from clinical divisions

AO Trauma

Basic Principles of Fracture Management Course: Course objectives

At the end of this course participants will be able to:

- Discuss the concepts of stability, their influence on bone healing, and how to apply implants to achieve appropriate stability
- Plan a treatment based on assessment, imaging, classification, and decision making
- Apply reduction techniques in fracture management with attention to the importance of the soft-tissue
- Treat diaphyseal and simple (peri)articular fractures using different application techniques
- Evaluate and recognize the special problems related to: fractures in the immature skeleton, pelvic injuries, osteoporotic fractures, postoperative infection, and delayed union and/or nonunion
- Plan the initial treatment of the polytraumatized patient

AO Spine

Competency: Analyze the history and physical examination of the patient presenting with spinal deformity

Learning objectives: After the educational event, the learner will be able to:

- Describe the classification systems for scoliosis, kyphosis, spondylolisthesis, and craniocervical deformities (knowledge)
- Identify conditions and patient factors that are likely to cause progressive deformity (knowledge)
- Recognize the physical features of an underlying condition (knowledge)
- Examine for signs of spinal imbalance (knowledge)
- Perform a full neurological examination (skill)

AO VET

Standard Curriculum Advanced Course

After the educational event, the learner will be able to:

- Evaluate small animal patients with complex diaphyseal, juxtaarticular, articular, and pelvic fractures
- Assess mechanical, biological, and clinical factors affecting bone healing
- Plan appropriate treatment using different implants and systems
- Perform operative procedures and techniques to treat complex fractures
- Formulate plans for postoperative care
- Anticipate, recognize, and manage complications

AO webinar learning objectives

Postoperative Mobilization in Older Adults Webinar

After the webinar the learner will be able to:

- Describe specific strategies to avoid immobility in older adults
- Recognize the common complications related to immobility
- Discuss specific difficulties related to postoperative mobilization in different anatomical regions

Reference

Bloom BS, Krathwohl DR. Taxonomy of educational outcomes: the classification of educational goals, by a committee of college and university examiners. In: *Handbook 1: Cognitive Domain*. New York: Longmans; 1956.

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