

A Primer on Learning Outcomes

Introduction

If you are an instructor, trainer, or educator, it is imperative that you have a thorough understanding of learning outcomes -- also known as behavioral outcomes, instructional outcomes, and performance outcomes.

Definition

A learning outcome can be defined as a clear and concise measurable statement of the behaviors (e.g., skills, knowledge, or attitudes) we expect our participants to demonstrate as a result of learning. Basically, it's what we want learners to be able to exhibit or demonstrate at the end of a course or unit of instruction.

Outcomes by Any Other Name

Behavioral outcomes, learning outcomes, instructional outcomes, and performance outcomes are terms that refer to descriptions of observable learner behaviors or performance that relate to learning. At some point, almost every teacher, instructor, and trainer must learn to write these types of outcomes. Acquiring this skill is something of a rite of passage in the process of becoming an instructor, yet it is a skill that requires practice, feedback, and experience.

Learning outcomes are about the learner and curriculum, not the instruction.

Learning outcomes specify what behavior(s) a learner must demonstrate or perform in order for an instructor to infer that learning took place. This "behavior" can take many forms and can be assessed or measured using both formal and informal assessment tools. Since learning cannot be seen directly, instructors must make inferences about learning from evidence they can observe and measure. Learning outcomes, if constructed properly, provide an ideal vehicle for making those inferences.

The purpose of a learning outcome is to communicate.

Therefore, a well-constructed outcome should leave little room for doubt about what is intended. A well-constructed outcome describes an expectation of intended learning from an audience and contains three parts, each of which alone means nothing, but when combined into a sentence or two, communicates the conditions under which the behavior is performed, a verb that defines the behavior itself, and the degree (criteria) to which a learner must perform the behavior. If any one of these three components are missing, the outcome cannot communicate accurately.

Therefore, the parts of a learning outcome are:

1. Conditions (a statement that describes the conditions under which the behavior is to be performed)
2. Behavioral Verb (an action word that connotes an observable learner behavior)
3. Criteria (a statement that specifies how well the learner must perform the behavior).

An outcome is the focal point of a lesson plan or presentation. It is a description of an intended learning achievement and serves as the basis for the rest of the lesson. It provides criteria for constructing an assessment for the lesson and for the instructional procedures the instructor designs to implement the lesson. Without a behavioral outcome, it is difficult if not impossible to determine exactly what a particular lesson and the intended learners are supposed to accomplish. Learning outcomes should provide uniform understanding of what will be achieved from a learning event.

In order to write behavioral outcomes, one should begin with an understanding of the particular content to which the outcomes will relate. Comprehensive understanding of the content to be learned should be a goal of instructors as well as learners. This implies that instructors or others who prepare outcomes as part of lesson plans or curriculum documents and guides should have more than just a superficial knowledge of the appropriate content. Writing a series of outcomes within a body of content that lack internal and external consistency with that body of content is not a productive use of time. However, the purpose of this is not to delve into the area of curriculum consistency, but rather present some pointers to help you write better outcomes. So, with that in mind, let's begin.

1. The Conditions

The condition part of an outcome specifies the circumstances, commands, materials, directions, etc., that the learner is given to initiate the behavior. All behavior relevant to intended learning outcomes can best be understood within a context of the conditions under which the behavior is to be performed or demonstrated. The condition part of an outcome usually begins with a simple declarative statement such as the following:

At the end of this lesson, the learner will be able to: (this means the learner is given an oral or written request to do something).

Given (some physical object), the learner will: (this means the learner is actually given something such as a map, a case study, a graph, etc., that relates to and is required for performing the intended behavior). Notice that in the examples above, there is no mention of the description of the instruction that precedes the initiation of the behavior. The instruction that leads to the behavior should never be included in the actual outcome; it is a separate issue. Here, we want to concentrate on just describing the conditions under which the desired learner behavior is to be performed.

2. The Verb

We all learned in elementary school that a verb is an action word. In a behavioral outcome, the verb is a special kind of action word. The verb in a behavioral outcome connotes an observable behavior. For example, although we as instructors all want our learners to appreciate one thing or another, it is impossible to see when a learner "appreciates" something. Understand is another noble word that connotes something we want our learners to do, but we cannot observe or physically see "understanding." The best we can do is to make inferences that a learner appreciates or understands something based on what that learner does or says in a controlled situation.

What then are appropriate verbs for behavioral outcomes? The answer is quite simple. A behavioral outcome verb is a word that denotes an observable action or the creation of an observable product. Verbs such as "identify", "name", "design", "prepare", and "describe" are behavioral because you can observe the actual act or final product of identifying, naming, designing, preparing, and describing.

3. Criterion Statements

The third component of a well written learning outcome is the criterion or desired standard for acceptable performance. A performance criterion statement describes the quality or quantity standards required for acceptable achievement during the training or education program. Criterion statements can also be referred to as "level of mastery" statements. A criterion should be measurable and may include specifications relating to time, speed, accuracy, or overall quality.

Level of Mastery Indicators

The level of mastery indicators usually follow the performance statement with such phrases as those listed below:

- ...Percent of the time
- ...Number out of number of times
- ...with percent of accuracy number out of number of attempts
- ...with less than number
- ...in (state amount) of time

Levels of mastery may be implied by using phrases that illustrate 100% accuracy, such as: "totally", "correctly", "accurately", "each", "all", "every", "corresponding", "successfully", and "without error."

The criteria are a set of descriptions that describe HOW WELL the behavior must be performed to satisfy the intent of the behavioral outcome verb. Usually, criteria are expressed in some minimum number or as what must be, as a minimum, included in a learner response. For example, an outcome might be: Given a list of twenty government agencies, the learner will identify (verb) the 13 member organizations of the National Foreign Intelligence Community (criteria).

Putting It All Together

Well-written behavioral outcomes are the heart of any lesson plan. If the outcomes you compose are "fuzzy" and difficult (if not impossible) to measure, the rest of the lesson plan that you create based on those outcomes is likely to be flawed.

Before you begin to write an outcome, spend a little time thinking about what you are describing and remember to make the learner behavior observable and measurable. You will find this process helps to clarify what you intend and you will be able to better communicate that intent to your learners, regardless of their skill level or background with the subject matter.

Any time you write a behavioral outcome, ask yourself the question, "Does this outcome clearly communicate and describe the intended learning outcome?" If you can find exceptions or loopholes as a way of meeting the outcome, then the outcome should be rewritten.

DO NOT use any of the following verbs or phrases in writing learning outcomes: "understand", "learn", "know", "look", "encourage", "be familiar with", "appreciate", "think about", "grasp", or "comprehend". Learning to write outcomes that describe what you want takes patience and practice. Make sure you get as much feedback as possible, especially from someone with a background in education.

Well-Written Learning Outcomes - Examples

Here are some examples of well-written learning outcomes:

Given an intelligence report, the learner will be able to accurately discuss two key points for determining the report's relevancy.

At the end of this lesson, the learner will be able to correctly identify three major intelligence disciplines.
At the end of this lesson, the learner will be able to create two corresponding strategies to build effective multinational relationships.

Given an intelligence scenario, the learner will be able to accurately recommend three viable solutions for an intelligence problem.

Given a MID article, the learner will be able to successfully critique the article in writing, utilizing the four criteria for review taught in this course.

Poorly Written Learning Outcomes

Here are some examples of poorly written learning outcomes:

Intelligence Community Organizations and policy.

Understand the nature of intelligence.

Gain insight into the nature of a terrorist threat.

Learn a systematic, organized approach to the acquisition of open source information.

Understand XXA's counter-intelligence reporting vehicles.

Writing Learning Outcomes

Learning outcomes can be written in a variety of styles and included in the specification of a performance outcome.

Three Characteristics of Learning Outcomes

Well-written learning outcomes have three characteristics. They:

1. State performance, or what the learner should be able to do, as close to the actual job performance as possible.
2. Specify the conditions under which the learner is to perform.

3. Specify the criteria for acceptable performance and the standards from which the degree of achievement can be measured or observed.

Learning outcomes are purposeful and an inherent part of the instructional planning process. Task or need analysis forms the foundation of the learning outcomes; therefore, the learning outcomes should tie directly back to the analysis.

Three Purposes of Learning Outcomes

Well-written learning outcomes have three purposes. They provide:

1. A sound basis for selection and design of instructional materials.
2. Standards for determining whether instructional outcomes have been achieved.
3. An established framework for performance.

Classifying Learning Outcomes: Domains and Bloom's Taxonomy

Learning outcomes form the foundation of any educational program. Before developing instructional materials, decisions must be made about what the learners are expected to do as a result of a lesson, course, or curriculum. The buzz of learning outcomes is not a new concept. Following the 1948 Convention of the American Psychological Association, Dr. Benjamin S. Bloom took a lead in formulating a classification of "the goals of the educational process."

Three "domains" of educational activities were identified. The first of these, named the Cognitive Domain, involves knowledge and the development of intellectual attitudes and skills. (The other domains are the Affective Domain and the Psychomotor Domain, but don't apply to our learning environment).

Eventually, Bloom and his co-workers established a hierarchy of educational outcomes, which is generally referred to as Bloom's Taxonomy, which attempts to divide cognitive outcomes into six subdivisions ranging from the simplest behavior to the most complex. It is important to realize that the divisions outlined above are not absolutes and other systems or hierarchies have been devised. However, Bloom's Taxonomy is easily understood and widely applied in the field of education and training.

Cognitive Learning Domain

Cognitive learning is demonstrated by knowledge recall and the intellectual skills: comprehending information, organizing ideas, analyzing and synthesizing data, applying knowledge, choosing among alternatives in problem solving, and evaluating ideas or actions. The cognitive domain focuses on the acquisition and use of knowledge and is predominant in the majority of courses.

Six Levels within the Cognitive Domain

Bloom identified six levels within the Cognitive Domain, from the simple recall or recognition of facts, as the lowest level, through increasingly more complex and abstract mental levels, to the highest order, which is classified as evaluation. A definition of each of the six levels follows :

The six levels (from lowest to higher levels of learning) along with verb examples that represent intellectual activity on each level are listed in the table below.

Level	Type of Activity of Question	Verbs Used for Learning Outcomes
LOWEST LEVEL Level 1	Knowledge Remembering of previously learned material. This may involve the recall of a wide range of material, from specific facts to complete theories, but all that is required is the bringing to mind of the appropriate information. Knowledge represents the lowest level of learning outcomes in the cognitive domain.	Arrange, cite, collect, define, duplicate, enumerate, label, list, match, memorize, name, order, recognize, record, relate, recall, repeat, identify, recite, recount, reproduce, specify, state.
Level 2	Comprehension Grasping the meaning of material. This may be shown by translating material from one form to another (words to numbers), by interpreting material (explaining or summarizing), and by estimating future trends (predicting consequences or effects). These learning outcomes go one step beyond the simple remembering of material, and represent the lowest level of understanding.	Classify, describe, differentiate, discuss, explain, express, identify, indicate, locate, recognize, report, restate, retell, review, paraphrase, select, summarize, translate.
Level 3	Application Using learned material in new and concrete situations. This may include the application of such things as rules, methods, concepts, principles, laws, and theories. Learning outcomes in this area require a higher level of understanding than those under comprehension.	Apply, calculate, choose, demonstrate, dramatize, employ, exhibit, illustrate, interpret, interview, manipulate, operate, practice, schedule, show, simulate, sketch, solve, use, write.
HIGHER LEVELS Level 4	Analysis Breaking down material into its component parts so that its organizational structure may be understood. This may include the identification of parts, analysis of the relationship between parts, and recognition of the organizational principles involved. Learning outcomes here represent a higher intellectual level than comprehension and application because they require an understanding of both the content and the structural form of the material.	Analyze, appraise, arrange, calculate, categorize, chart, classify, compare, contrast, critique, detect, diagram, differentiate, discriminate, discover, dissect, distinguish, examine, experiment, group, interpret, Investigate, inspect, organize, probe, questions, scrutinize, survey, test.

<p>Level 5</p>	<p>Synthesis Putting parts together to form a new whole. This may involve the production of a unique communication (theme or speech), a plan of operations (research proposal), or a set of abstract relations (scheme for classifying information). Learning outcomes in this area stress creative behaviors, with major emphasis on the formulation of new patterns or structures.</p>	<p>Arrange, assemble, collect, compose, construct, create, design, develop, formulate, imagine, invent, manage, organize, originate, plan, predict, prepare, produce, propose, set up, write.</p>
<p>Level 6</p>	<p>Evaluation Judging the value of material (statement, novel, poem, research report) for a given purpose. The judgements are to be based on definite criteria. These may be internal criteria (organization) or external criteria (relevance to the purpose) and the learner may determine the criteria or be given them. Learning outcomes in this area are highest in the cognitive hierarchy because they contain elements of all the other categories, plus conscious value judgments based on clearly defines criteria.</p>	<p>Appraise, argue, assess, attach, choose, compare, conclude, critique, decide, deduce, defend, determine, estimate, evaluate, judge, measure, predict, rate, recommend, revise, select, score, support, test, value.</p>

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VERBS FOR USE IN WRITING LEARNING OBJECTIVES

KNOWLEDGE <i>Recall of information</i>	COMPREHENSION <i>Interpret information in one's own words</i>	APPLICATION <i>Use knowledge or generalization in a new situation</i>	ANALYSIS <i>Break down knowledge into parts and show relationships among parts</i>	SYNTHESIS <i>Bring together parts of knowledge to form a whole and build relationships for new situations</i>	EVALUATION <i>Make judgments on basis of given criteria</i>
Define List Recall Name Recognize State Repeat Record Label Arrange Duplicate Match Memorize Order Relate Reproduce	Discuss Describe Explain Identify Translate Restate Recognize Express Locate Report Tell Convert Distinguish Estimate Indicate Select Sort	Compute Demonstrate Illustrate Operate Perform Interpret Apply Employ Use Practice Schedule Sketch Prepare Modify Predict Extrapolate Manage Choose Solve	Distinguish Analyze Differentiate Compare Contrast Categorize Appraise Calculate Test Diagram Inspect Question Relate Solve Examine Classify Deduce Outline Inventory Experiment Discriminate	Diagnose Propose Design Manage Hypothesize Summarize Compose Plan Formulate Arrange Assemble Collect Construct Create Organize Prepare Modify Invent Generate Set up Synthesize Write	Evaluate Assess Justify Appraise Rate Revise Score Select Choose Estimate Measure Argue Decide Criticize Attack Defend Judge Predict Support Value