Aid for Writing Learning Outcomes

# Learning Outcomes

Well-written course outcomes and lesson objectives are the critical foundation of a successful course. Course outcomes and lesson objectives are essential from a standards alignment standpoint, as well as for an overall quality measure of the course.

A learning outcome is a formal statement of what students are expected to learn. Learning outcome statements refer to specific knowledge, practical skills, areas of professional development, attitudes, higher-order thinking skills, etc. that faculty members expect students to develop, learn, or master during a course (Suskie, 2004). Learning outcomes are also often referred to as “expected learning outcomes”, “student learning outcomes”, or “learning outcome statements”.

Let’s differentiate between program level learning outcomes, course level learning outcomes and lesson objectives.

* **Program Level Learning Outcomes** describe the skills or competencies a student should have upon the completion of a program of study.
* **Course Level Learning Outcomes** describe the skills or competencies a student should have upon course completion.
* **Lesson Objectives** are lower-level objectives that support a given course outcome. A lesson objective has a narrower scope than a Course Outcome and describes the knowledge or skills a learner will need to have in order to successfully achieve the Course Outcome. Lesson Objectives are sometimes referred to as enabling objectives.

# The ABCD’s of Learning Outcomes

* Outcomes specify an action that is done by the *students/learners =* ***(A) audience*** *(rather than the faculty members)*
* Outcomes specify a ***(B) behaviour*** by the students/learners that is ***observable and measurable****,* e.g. accurately measure blood pressure;
* Outcomes specify a ***(C) context or condition****,* e.g. given a brief introduction; using a right cuff and right anatomical landmark
* Outcomes specify a ***(D) degree/criterion/level/standard****,* e.g. according to best practices; at an introductory level.

Effectively developed learning outcome statements should possess all four of these characteristics. When this is done, the learning outcomes for a course are designed so that they can be assessed (Suskie, 2004).

# Writing Effective Learning Outcome Statements

When stating learning outcomes, it is important to use verbs that describe exactly what the learner(s) will be able to do upon completion of the course. Examples of good action words to include in learning outcome statements:

*Compile, identify, create, plan, revise, analyze, design, select, apply, demonstrate, prepare, use, compute, discuss, explain, predict, assess, compare, critique, rate, outline or evaluate*

There are some verbs that are unclear in the context of a learning outcome statement *(e.g., know, be aware of, appreciate, learn, understand, comprehend, become familiar with)*. These words are often vague, have multiple interpretations, or are simply difficult to observe or measure (American Association of Law Libraries, 2005). As such, it is best to avoid using these terms when creating learning outcomes.

For example, please look at the following learning outcome statements:

*Upon successful completion of this course, the student will be able to:*

* Understand basic human development theory.
* Appreciate music from other cultures.

Both of these learning outcomes are stated in a manner that will make them difficult to assess.

Consider the following:

* How do you observe someone “understanding” a theory or “appreciating” other cultures?
* How easy will it be to measure “understanding” or “appreciation”?

These learning outcome statements are more effectively stated the following way:

*Upon successful completion of this course, the student* ***(A)*** *will be able to:*

* **(B)** Correctly describe the **(C)** three major theories of human development at an **(D)** introductory level.
* **(B)** Compare four characteristics of classical music **(C)** between North American culture and another culture (of the student’s choice) at a **(D)** first year university level.

The following list identifies verbs that should be avoided when crafting objectives. The words in the list have been identified as ambiguous in connotation and intent; they may create difficulties for learning assessment, or are otherwise problematic for use in well-written learning objectives. Please avoid use of the following when writing objectives:

* Learn
* Understand
* Discuss
* Clarify
* Explore
* Examine
* Investigate
* Research

# Introduction to Bloom’s Taxonomy of Educational Objectives

In writing sound course outcomes or lesson objectives, consider the cognitive level at which you want the student to demonstrate mastery. This section describes these levels in a common framework called “Bloom’s Taxonomy.”

In 1956, Benjamin Bloom headed a group of educational psychologists who developed a classification of levels of intellectual behavior important in learning. They went on to identify six levels within the cognitive domain, from the simple recall or recognition of facts, through increasingly more complex and abstract mental levels, to the highest order which was classified as evaluation. During the 1990's a new group of cognitive psychologists, lead by Lorin Anderson (a former student of Bloom's), updated the taxonomy reflecting relevance to 21st century work. The graphic is a representation of the NEW verbiage associated with the long familiar Bloom's Taxonomy. Note the change from Nouns to Verbs to describe the different levels of what has come to be known as Bloom’s Revised Taxonomy (see Figure 1).

Creating

Evaluating

Analyzing

Applying

Understanding

Remembering

*Figure 1: Bloom’s Revised Taxonomy*

Remembering: can the student recall or remember the information?

Understanding: can the student explain ideas or concepts?

Applying: can the student use the information in a new way?

Analyzing: can the student distinguish between the different parts?

Evaluating: can the student justify a stand or decision?

Creating: can the student create new product or point of view?

# Verbs Mapped to Bloom’s Levels

The following table identifies learning categories and key verbs for each of Bloom’s levels. The learning categories will help determine assessment types and course content options, and the verbs listed can help you write course outcomes and lesson objectives at the appropriate Bloom’s level.

| **Bloom’s Level** | **Verb Category** | **Verbs** |
| --- | --- | --- |
| 1: RememberRetrieve relevant information from long-term memory. (Anderson & Krathwohl, 2001, p. 66). | Recognizing | Define, duplicate, find, identify, list, locate, match, recognize |
| Recalling | Draw, label, name, recall, recite, repeat, reproduce, retrieve, state, tell, write |
| 2: UnderstandConstruct meaning from instructional messages. (Ibid, p. 70). | Interpreting | Indicate, interpret, locate, paraphrase, represent, select, translate,  |
| Exemplifying | Chart, diagram, exemplify, illustrate, |
| Classifying | Categorize, classify, convert, relate |
| Summarizing | Describe, generalize, summarize, report, restate, rewrite, trace |
| Inferring | Associate, conclude, extrapolate, infer, predict |
| Comparing | Compare, contrast, describe map, outline |
| Explaining | Articulate, explain, express, model |
| 3: ApplyUse procedures to perform exercises or solve problems. (ibid, p. 77). | Executing  | Demonstrate, dramatize, employ, execute, install, produce, operate, schedule, sketch, show, solve, use, write,  |
| Implementing | Administer, apply, complete, compute, conduct, implement, perform, practice, run, use |
| 4: AnalyzeBreak materials into its constituent parts and determine how the parts are related to each other and to an overall structure. (ibid, p. 79). | Differentiating | Appraise, contrast, detect, differentiate, distinguish, explain, find, question, research, select, test |
| Organizing | Compare, connect, contrast, correlate, categorize, classify, find, integrate, organize, outline, separate, sort, structure |
| Attributing | Attribute, determine, deconstruct, deduce, identify, infer |
| 5: EvaluateMake judgments based on criteria and standards. (ibid, p. 83). | Checking | Check, coordinate, detect, estimate, monitor, test, verify |
| Critiquing | Appraise, argue, assess, challenge, choose, critique, debate, defend, determine, dispute, endorse, evaluate, grade, judge, justify, persuade, prioritize, rate, recommend, select, weigh |
| 6: CreatePut elements together to form a coherent or functional whole. (ibid, p. 84). | Generating | Generate, hypothesize, invent, predict  |
| Planning | Design, devise, forecast, plan, propose |
| Producing | Assemble, build, compose, combine, construct, create, develop, formulate, make, produce, write  |

Anderson, L. W., & Krathwohl, D. R. *A Taxonomy for Learning, Teaching, and Assessing.* New York: Addison, Wesley,

 Longman, Inc, 2001.

# Tips and Strategies for Designing Effective Learning Outcomes

**Avoid Course Outcomes or Lesson Objectives with More than One Verb**

It is never appropriate to use two verbs in a course outcome or lesson objective. Consider the following scenarios:

Objectives with two verbs at different Bloom’s Levels

Bad Example

Consider the objective:

*Define what a food web is and give examples*.

Good Example

“Defining” is at Bloom’s Level 1 (Knowledge). “Giving an example” is at Bloom’s Level 2 (Comprehension). Comprehension is the higher cognitive action, so the lower verb should be eliminated from the objective (if you can give examples, you obviously know what a food web is).

* Correct the objective above with more precise and concise wording:

*Give an example of a food web*.

Compound objectives where two separate concepts are lumped together

Bad Example

Consider the objective:

*Explain how criminal law operates as a remedy and distinguish between three types of nonjudicial remedies.*

Good Example

This objective is really two discrete objectives. Correct it by breaking it into two separate objectives:

*Explain how the criminal law operates as a remedy.*

*Distinguish between three types of nonjudicial remedies.*

**Don’t Confuse Course Outcomes or Lesson Objectives with Assessments or Other Instructional Activities**

Course outcomes or lesson objectives should focus on what skills and abilities the student is to achieve. They should not focus on the content of an assignment or information that will be covered during class.

Bad Example #1

Consider the objective:

*Label a timeline with significant historical events related to the Agricultural Revolution.*

Good Example #1

The preceding objectiveis actually more of an assignment. Correct the preceding objective by being less specific:

*Identify the chronology of significant events related to the Agricultural Revolution.*

A well-written learning objective generally allows alternative forms of assessment—if the assessment itself seems to be included in the objective, the objective probably needs rethinking.

**Eliminate Redundancies and Overlap Between Course Outcomes and Lesson Objectives**

Review all course outcomes and lesson objectives when you finish writing a lesson and/or a course, and ensure that they all address distinct areas of learning and are not redundant or overlapping.

*Please note*: Redundancies are allowed between a course outcome and a lesson objective, but not when two objectives are the same type (say, two course outcome or two lesson objectives).

Bad Example

Consider these two course outcomes:

*Describe memory and the different types of memory.*

*Discuss the role of the different memory systems.*

Good Example

The preceding outcomes are similar enough that you don’t need both of them—if you describe the different types of memory, the roles of the different memory systems (such as short-term memory) are probably covered in the description. Correct the outcome above by streamlining them into one outcome:

*Differentiate between the types of memory.*

**Review Related Courses for Course Outcomes Gaps or Overlaps**

For progressive courses that address the same subject matter, but at different levels, it is important to make sure that the course outcomes have a logical flow, that they don’t overlap or have gaps, and that the course outcomes are appropriate for the level of the course.

Example

Consider courses that are part of a series like:

*Communications 1*

*Communication 2*

Alternatively, consider courses that are in the same content area, but at different levels like:

*PSY 100: Intro to Psychology*

*PSY 200: Cognitive Psychology*

*PSY 450: Cognitive Psychology and Learning.*

You should pull out all course outcomes for the series of courses and look at them as one long list, confirming that they logically follow one another and are not redundant. You don’t want to see much, if any, repetition or concept gaps. Also, you should ensure that the Bloom’s Levels of the course outcomes generally go from lower-level to higher-level as the courses progress in level. You don’t want to see more in-depth thinking required in a first semester course than in the fourth semester course!