

Brief #1: Writing Learning Outcomes

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The following document, based on the *Ontario Universities Council on Quality Assurance. Writing Learning Outcomes* webinar (Goff, 2010), provides a brief overview of strategies for writing learning outcomes.

What are Learning Outcomes?

A learning outcome can be defined as a statement of what a student is expected to know and be able to demonstrate as a result of learning. Learning outcomes can be written at the lesson, unit, course or program levels.

The terms *learning objectives* and *learning outcomes* are often used interchangeably in the educational literature. In outcome-based education however, the *objective* specifies the desired or intended results, such as one would find on a course syllabus, while the *outcome* refers to the results achieved by the student and is written from the student perspective (Goff, 2010). Depending on the educational paradigm however, objectives can also be written from a student perspective, leading to confusion about the meaning and usage of the two terms. As a result, the term outcome is preferred because it focuses explicitly on student learning: “The same goals addressed by learning objectives can be equally addressed by learning outcomes, but by focusing on the application and integration of the course content from the perspective of the student, learning outcomes can more explicitly and directly address expectations for student learning” (University of Toronto, n.d.).

Teacher- Versus Learner-Centered Approaches to Education

Teacher- and learner-centered approaches to education employ different instructional strategies and assessments. In a teacher-centered approach to education, instructional design is content-driven. The instructor decides how to organize the content and how the students will demonstrate mastery or knowledge of it. A common instructional strategy in this approach is the lecture, in which students passively receive the content transmitted by the instructor.

In a student-centered approach however, the focus is on the intended learning outcomes, or what the student will be able to do at the end of the lesson or course. Students and instructors work together to construct knowledge, making students active

participants in the learning process. Assessments are meaningful and authentic, allowing students to apply the skills and knowledge they have gained to solve real problems. Authentic assessments are "...engaging and worthy problems or questions of importance, in which students must use knowledge to fashion performances effectively and creatively. The tasks are either replicas of or analogous to the kinds of problems faced by adult citizens and consumers or professionals in the field" (Wiggins, 1993, p. 229).

Writing Learning Outcomes

A common tool used to assist with the writing of learning outcomes is a *Taxonomy of Educational Objectives* (Bloom, Englehart, Furst, Hill, & Krathwohl, 1956). Bloom et al. propose that cognitive knowledge—the “thinking” domain—can be classified according to six hierarchical levels: (1) knowledge, (2) comprehension, (3) application, (4) analysis, (5) synthesis, and (6) evaluation.

In Bloom’s taxonomy, cognitive processes are organized from simple to increasingly complex. The lower level processes build on, and include, those at the higher levels, i.e. synthesis requires application. In addition, “a particular simple behavior may become integrated with other equally simple behaviors to form a more complex behavior” (Bloom et. al, 1956, p. 18). These are commonly represented as shown in Figure 1. *A Taxonomy of Educational Objectives*.



Figure 1. A Taxonomy of Educational Objectives. Adapted from Bloom, B.S. (Ed.), Englehart, M.D., Furst, E.J., Hill, W.H., & Krathwohl, D.R. (1956)

In 2001, Anderson et al. issued a revision to Bloom’s taxonomy. In this new framework, knowledge is classified into four “dimensions”: (a) factual knowledge, (b) conceptual knowledge, (c) procedural knowledge, and (d) metacognitive knowledge. Bloom’s

original six levels of knowledge are redefined as: (1) remember, (2) understand, (3) apply, (4) analyze, (5) evaluate, and (6) create. The taxonomy is presented as a two-dimensional table that plots the “knowledge dimension” against the “cognitive process dimension”, as shown in Table 1. *Taxonomy Table*.

Table 1.						
<i>Taxonomy Table</i> (Anderson et al., 2001, p. 28)						
The Knowledge Dimension	The Cognitive Process Dimension					
	1. Remember	2. Understand	3. Apply	4. Analyze	5. Evaluate	6. Create
A. Factual Knowledge						
B. Conceptual Knowledge						
C. Procedural Knowledge						
D. Meta-cognitive Knowledge						

Regardless of which taxonomy one prefers, both are useful tools because they provide a hierarchical list of verbs to use when writing learning outcomes. A commonly used formula for constructing learning outcomes is to use:

- an action word or verb that identifies the performance to be demonstrated;
- a learning statement that specifies what learning will be demonstrated in the performance; and
- a broad statement of the criteria or minimum standards for acceptable performance. (University of Guelph, 2003)

For example,

At the end of the lesson, students will be able to identify five different kinds of assistive technologies used to enhance learning.

Behavioural outcomes can also be written using the “ABCD” mnemonic (**A**udience, **B**ehaviour, **C**ondition, **D**egree) as shown below:

At the end of the lesson [C], students [A] will be able to identify five [D] different kinds of assistive technologies used to enhance learning [B].

In summary, the following guidelines are commonly offered for writing student-centered learning outcomes:

- Begin each learning outcome with an active verb.
- Use only one verb per learning outcome. This helps to make learning outcomes specific.
- Learning outcomes should be observable and measurable. Avoid vague terms such as “understand” and “know” because they are difficult to measure.
- When writing learning outcomes, consider how they will be assessed, i.e. how will you know the student has achieved them? This may help in determining whether or not the outcomes are too broad or too narrow.
- Ensure that the learning outcomes for different units of instruction “map” on to each other, or are well aligned. For example, do the learning outcomes for the class relate to the learning outcomes for the course? For the program?

These criteria can also be represented by the SMART acronym, which helps to verify if the learning outcomes are:

- **S**pecific;
- **M**easurable;
- **A**ction-oriented, i.e. are written using a verb;
- **R**esults-oriented, i.e. they describe what the students should be able to do at the end of the learning; and
- **T**imely and **t**angible, i.e. they can be reasonably accomplished, and demonstrated by the student, within the allotted timeframe (e.g., lesson, unit, course, etc.).

Learning Outcomes and Curriculum Design

Learning outcomes figure prominently in the “backwards design” approach to curriculum development advocated by Wiggins and McTighe (2005). In this approach, one begins by identifying the desired results, or the *intended learning outcomes*. Next, one determines what type of assessments would provide acceptable evidence that the intended learning outcomes had been met. Finally, one plans teaching and learning activities that will enable student to meet the intended outcomes.

Conclusion

In this document and the accompanying webinar, *Ontario Universities Council on Quality Assurance. Writing learning outcomes* (Goff, 2010), we have presented suggestions for writing learning outcomes. Additional information on writing learning outcomes can be found in the resources listed below.

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