Defining Learning Outcomes

Ideally, upon completion their course of study, our students should have developed a set of effective skills they can readily apply in the workplace. Objectives and competences allow us to define the expected set of knowledge skills, attitudes, and habits that our students should develop to be successful in their professional lives.

An objective measurement of what students know and are able to do is critical to any competency-based educational program. Traditionally, objectives include a precise observable behavior, the conditions under which this behavior needs to be performed, and a minimum acceptable standard of performance. (W. D. Pierce & M. A. Lorber, 1977, *Objectives & Methods for Secondary Teaching*).

**Good objectives:**

- Provide an instructional roadmap.
- Provide clarity about the educational program to learners, instructors and external stakeholders.
- Encourage higher order learning.
- Determine the assessment method.

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**Lower Order Thinking Skills (LOTS)**

- **Remembering** - Recognizing, listing, describing, identifying, retrieving, naming, locating, finding.
- **Understanding** - Interpreting, summarizing, inferring, paraphrasing, classifying, comparing, explaining, exemplifying.
- **Applying** - Implementing, carrying out, using, executing.
- **Analyzing** - Comparing, organizing, deconstructing, attributing, outlining, finding, structuring, integrating.
- **Evaluating** - Checking, hypothesizing, critiquing, experimenting, judging, testing, detecting, monitoring.
- **Creating** - Designing, constructing, planning, producing, inventing, devising, making.

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**Higher Order Thinking Skills (HOTS)**
Using Bloom’s Taxonomy

How NOT to Write Objectives or Competencies

Consider the following objectives to analyze the flaws (and how the Bloom verbs are used):

- **Observe** the interference of waves in a ripple tank.
  As long as the students have vision, they should be able to observe the interference phenomenon. By standing near a wave tank watching waves, they have satisfied the criterion of this objective.

- **Discuss** the principle of superposition.
  Students can discuss superposition, but that doesn't mean that they know anything about it. Discussion does not usually lend itself to formal assessment unless we are looking at one-on-one oral examinations which I doubt the teacher has in mind. Students merely talking about how "stupid" they feel the superposition principle is would satisfy the criterion of this objective.

- **Student should be able to understand** the thin lens formula.
  Is ability to understand is being assessed here? As long as the student has an IQ of, say, 90, the student will be able to understand. Is the teacher intending to judge IQ with this objective? Probably not. Understanding is hard to assess. What sort of observable performance is expected of the student?

Writing Acceptable Performance-Based Objectives

To begin preparing appropriate performance-based objectives for students, teachers should create a brief list of things that students should know and be able to do at the end of instruction. All of these need to be translated into observable terminal behaviors that can then be used to formally assess student knowledge and skill. Below is a table showing a poorly worded objective adjacent to one that is much better written.
Poor Objectives:

- The student will know the Democratic Ideal upon which the ISU Teacher Education program is based.
- The student will understand the distinction between distance and displacement.
- The student knows how to solve algebraic physics problems.

Better Objectives:

- The student will write an essay identifying and explaining each of the moral and intellectual virtues of the ISU Democratic Ideal.
- The student will provide physical examples when asked to show the difference between displacement and distance.
- The student will, when given formulas, parameters, and quantities associated with variables, will describe relationship between the variable as well as inferential relationships.

And, what is the relationship of an objective to a competency?

Since a competency is the capability to apply or use a set of related knowledge, skills, and abilities required to successfully perform “critical work functions” or tasks in a defined work setting. Competencies often serve as the basis for skill standards that specify the level of knowledge, skills, and abilities required for success in the workplace as well as potential measurement criteria for assessing competency attainment. On the other hand, objective states what is ought to be learned in a course. Competencies and objectives need to be aligned if a program is to be successful in preparing students.

References


Churches, A. 2007, Educational Origami, Bloom's and ICT Tools
