



INTRODUCTION

As part of the instructional design process, assessment provides an opportunity to check understanding and accomplishment of not only how well learners meet the instructional goals, but also as a measure of course and instructor effectiveness. These measurements can be made in a variety of ways throughout the training process.

This guide is designed to present an overview of assessment strategies and how they can be used in training programs.

The definition of assessment is the evaluation or estimation of the nature, quality, or ability of someone or something. In order to evaluate the identified someone or something, there must be an established standard to judge mastery.

Establishing a plan, or assessing specification will help to link assessment items or activities directly to learning outcomes and course content.

To assess properly, there must be a standard to judge mastery.

PART 1

LEARNING OUTCOMES: THE STANDARD FOR PERFORMANCE

In continuing education and training (CE/T), the standard for evaluation is determined as part of course planning.

During instructional design, the needs analysis should clearly identify a gap in knowledge and/or skill that the target audience needs to know but currently does not. Then some type of training intervention may be developed to close that gap.

Learning outcomes are created to address how or what should be measured to verify learning took place. Toward this end, the focus should be on what a learner will know or be able to do with the information or experience.

Learning outcomes become statements that predict what the learner will gain after the learning activity. Each intended learning outcome should describe the observable knowledge or skills that you expect learners to be able to demonstrate as a result of their work in the unit and should contain the following:

- A verb that is appropriate to the type of knowledge or skill required.

*For more on Bloom,
see the IACET's
Bloom's Taxonomy
Resource
Document.*

- A noun that describes the content that the verb is meant to address (excerpted from Writing Intended Learning Outcomes at <http://www.deakin.edu.au/itl/dso/strategies-teaching/tips/d2l-writing-ilo.php>).

When developing learning outcomes, it can be useful to consult a learning taxonomy to identify the kinds of learning you would like to foster in your course. Bloom's Taxonomy—developed by educational theorist Benjamin Bloom in the 1950s and revised by Krathwohl et al. in 2001—identifies three learning domains: Cognitive (knowledge), Affective (attitudes), and Psychomotor (skills).

The Cognitive domain highlights intellectual outcomes and is further divided into six specific categories or levels:

1. **Remembering:** Retrieving, recognizing and recalling relevant knowledge from long-term memory.
2. **Understanding:** Constructing meaning from oral, written and graphic messages through interpreting, exemplifying, classifying, summarizing, inferring, comparing and explaining.
3. **Applying:** Carrying out or using a procedure through executing or implementing.
4. **Analyzing:** Breaking material into constituent parts, determining how the parts relate to one another and to an overall structure or purpose through differentiating, organizing and attributing.
5. **Evaluating:** Making judgments based on criteria and standards through checking and critiquing.
6. **Creating:** Putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning or producing.

Bloom's taxonomy is a powerful tool to help develop learning objectives because it explains the learning process:

- Before you can **understand** a concept, you must **remember** it.
- To **apply** a concept, you must first **understand** it.
- In order to **evaluate** a process, you must have analyzed it.
- To **create** an accurate conclusion, you must have completed a thorough **evaluation**.

Assessments should be valid and reliable. Meaning assessments measure what they are supposed to and can do it reliably.

Note: See Bloom’s Revised Taxonomy

Learning outcomes must be observable, measurable and expressed to show what learners will do and what they will achieve.

PART 2: ASSESSMENT IN THE LEARNING PROCESS

Assessment is a critical step in the learning process. It determines whether the course's learning outcomes have been met, and it is a key component in the overall learning process. It is commonly used at three points in the learning process: before (placement), during (formative) and after (summative). In this regard, each type of assessment informs the instructor/facilitator.

- Placement assessment is used to determine what the audience knows about the content prior to the training intervention. This will help identify what the audience knows and the instruction’s focus.
- Formative assessment is used during the instruction to determine how learners are progressing through the instruction and provides information on whether additional instruction (remediation) is needed.
- Summative assessment is used at the end of the course to determine each student’s mastery level and to assign grades.

PART 3: ASSESSMENT METHODS

Not every assessment method is universally valid for every type of learning outcome. For example, if an intended outcome for a computer programming course is to be able to design and develop web-enabled software components using Java, you cannot measure this outcome by asking the student to write an essay. Similarly, most generic outcomes, with the exception of language competencies, cannot be assessed by objective tests. To align assessment with a particular type of learning outcome, you need to select an appropriate assessment method.

Examples of assessment methods

*Assessments
should be designed
around the learning
event outcomes.*

- Objective Tests (multiple choice, fill in the blank, True/False, Matching etc.
- Case Studies
- Essay Questions
- Projects
- End-of-Chapter Type Problems
- Seminar Presentation
- Practicum and Clinical
- Portfolios or other types of authentic assessment
- Journal Articles and Critical Incidents
- Examinations
- Peer and Self-assessment

PART IV: ASSESSMENT PLANNING

When designing a new assessment or revising an old one, the most important component is to ensure a match exists between the outcomes of the learning event being assessed, the teaching/learning activities used and the assessment tool. When designing an assessment ask the following questions:

- What are the outcomes of the learning event that are being assessed?
- What level from Bloom's taxonomy is being assessed: knowledge, comprehension, application, analysis, synthesis and/or evaluation? Is the level appropriate given the outcomes of the learning event?
- Is the assessment at a level appropriate to the level of the learning event (first year, apprentice, journeyman, graduate etc.)?
- How well does the content of the assessment match the objectives being assessed?
- How well does the content of the assessment match the learning opportunities presented in the unit/lesson/course/event (i.e., does the assessment assess what was taught)?

- Is the assessment organized in such a way as to aid clarity and understanding of its requirements?

PART 5: ASSESSMENT PLANNING GETTING STARTED

Create a table to help align your assessment with your course outcomes.

This table can have a column for each of the following:

- Learning to be measured (course outcomes).
- Weighting (relative importance).
- Level, Bloom's cognitive domain
- Time Boundedness

Regarding IACET Accreditation, an assessment planning tool like the one mentioned above is often included within or a byproduct of a learning event design document.

Reviewing Your Assessment

When reviewing your assessments, these questions are recommended;

- Can the assessment be completed in the time provided?
- Are there clear directions and an indication of its relevance?
- Does the assessment require any skills, knowledge or vocabulary that wasn't central to the course content? Are you assessing something you haven't taught?
- Does the assessment mirror examples or exercises used in the learning event?
- Do problems graduate in difficulty, going from simplest to most difficult?
- Do the problems create a potentially frustrating situation in which the solution to one problem depends on the successful completion of another? Review how the assessment will be graded.
- Is each question clear and unambiguous?
- Is there only one possible correct answer for each question?

- Have any partially correct answers been identified?
- Does each question test at the desired level of knowledge, skill or attitude?

Choosing the Right Assessment Format

Each assessment format has its own strengths and weaknesses and is best used to assess different kinds of learning and skills. Assessments can be either subjective or objective.

Objective Assessments

Objective assessments require learners to choose a response. These assessments include multiple choice, true/false or matching questions. It can be more time consuming to develop effective objective assessments; however, they are easier to score.

Subjective Assessments

Subjective assessments require learners to construct a response. These types of assessments include essays, short and long answer questions, case studies, projects or demonstrations. It can be easier to develop a subjective assessment than an objective assessment; however, they are harder to score.

HELPFUL RESOURCES

- Association of American Colleges and Universities – Assessment Resources: <http://www.aacu.org/resources/assessment/>
- Learning Outcomes Assessment Planning Guide (Cal Poly): <http://www.academicprograms.calpoly.edu/assessment/assesplanguide.htm>
- National Institute for Learning Outcomes Assessment: <http://www.learningoutcomeassessment.org/>