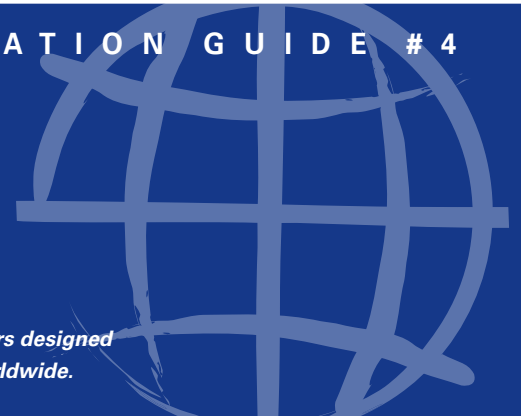


Writing Good Learning Objectives



I-TECH's Technical Implementation Guides are a series of practical and instructional papers designed to support staff and partners in their efforts to create and maintain quality programs worldwide.

What Is a Learning Objective?

A learning objective is a statement of what the learner will know, understand, or be able to do as a result of engaging in a learning activity. Well-written learning objectives are essential to building a strong foundation in the development of training materials. Learning objectives:

- Provide clarity about the purpose of the course.
- Guide the development of appropriate content, methods, and materials by the curriculum developer in order to facilitate learning and meet training goals.
- Establish accountability between the learner and the instructor.
- Help trainers articulate exactly what they want participants to do by the end of the training.

Objectives Vs. Goals

Learning objectives differ from overall training objectives or goals. Goals define the overall purpose of the training in broad, general terms and do not usually provide guidance on how to achieve them. Learning objectives are predictive statements describing the specific outcomes that a training session is intended to achieve; they are a benchmark by which to measure progress towards the achievement of larger goals. Learning objectives are learner-centered, and are written for an individual unit of study or module.

Example of a training goal: "Increase awareness of the importance of providing voluntary counseling and testing (VCT) services to pregnant women."

Example of a learning objective: "By the end of this training session, participants will be able to list three barriers to implementing effective voluntary counseling and testing (VCT) services in antenatal clinics."

Why Are Learning Objectives Important?

Developing learning objectives is one of the most critical steps in the training development process. Well-constructed learning objectives enable trainers to know what they will teach, participants to know what they will learn, and supporting organizations and funders to know what will be accomplished in the training programs. Learning objectives help all stakeholders involved to share a uniform understanding of what will be achieved through the training programs.

Time invested formulating solid learning objectives at the beginning of the training design process is time well spent. Clear, measurable learning objectives:

- Provide a framework for organizing the training.
- Help trainers focus on "need to know" content and eliminate unnecessary content.
- Inform participants about what new information or skills they will be learning. Participants can take more responsibility for their own learning when they know what they are expected to achieve.
- Guide trainers in choosing appropriate methods and materials to enhance participants' learning.
- Assist trainers in designing appropriate assessment and evaluation tools that accurately reflect the curriculum, and inform whether or not outcomes have been achieved.
- Support meaningful review of curricula, leading to more balanced and well-sequenced training products.
- Ensure that the desired program goals and objectives are achieved.

How to Write Learning Objectives

Once the goals and scope of the overall training package have been defined, trainers can identify specific knowledge, information, attitudes, and skills that participants are expected to gain from the training sessions. These will become the basis for the learning objectives for each individual session. At this stage, you should consider what exactly you would like participants to be able to do by the end of each training session.

Components of Learning Objectives

Educational theorist Robert Mager created a clear framework for developing learning objectives, in which they are constructed around four main components: **audience, behavior, standard, and condition.**

Audience: Specify the intended audience. In most cases, this will be the intended participants of the training. For example: “Participants/nurse supervisors/lab technicians will...”

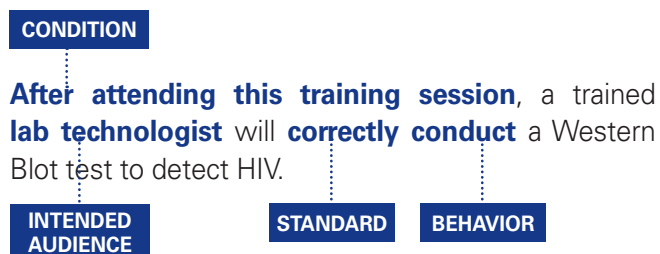
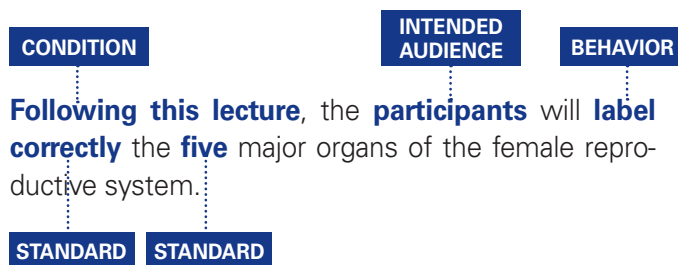
Behavior (observable action verb): Choose an action verb that best describes the type of behavior that the participant needs to display after the training. Action verbs state the specific behaviors the participant is expected to perform after attending the training session. These might include “list,” “explain,” or “identify.” The action verb is the most important component of the learning objective because it indicates what will be accomplished through the training. Try to avoid verbs such as “understand,” “know,” or “increase awareness of,” as these are not easily measurable. For example, it is preferable to have an objective that says, “Participants will be able to list the criteria for initiating ART,” rather than “Participants will understand the criteria for initiating ART.”

Standard: Determine to what standards the task must be performed. Standards describe the level of proficiency to be elicited by the training—in other words, how the learner will be able to perform in terms of quantity, quality, and time limitations. It will answer a question such as “How many?” “How fast?” or “How well?” Examples of standards include “Within a given time period,” “In compliance with criteria presented by instructor,” “90% of responses.”

Condition: Determine under what conditions the task must be performed. The actual conditions under which the task will occur or be observed speak to time and place. For example, “By the end of the workshop, participants will be able to list three criteria for initiating ART.” The condition might also identify tools, procedures, materials, aids, or facilities to be used in performing the task, for example, “without reference to a manual” or “by checking a chart.”

When you combine these elements, you get effective learning objectives.

Examples of Learning Objectives



Making Learning Objectives “SMART”

Effective learning objectives are SMART: **S**pecific, **M**easurable, **A**ction-oriented, **R**easonable, and **T**ime-bound. Rather than trying to develop learning objectives based on these criteria, use SMART as a checklist to help ensure that you have considered each item in formulating learning objectives.

- **Specific** means that the learning objective describes the knowledge, attitudes, or skills that a learner should be able to demonstrate following exposure to a teaching strategy or learning activity.

- **Measurable** means that achievement of learning objectives can be measured by test items, observation, problem-solving exercises, or other evaluation methods during or after the session.
- **Action-oriented** means that the objective includes an action verb that demonstrates change or acquisition of knowledge, attitudes, or behaviors.
- **Reasonable** means that the objective reflects realistic expectations of knowledge, attitude, or behavior acquisition/change given the conditions for instruction (e.g., time and size of group, scope of training).
- **Time-bound** means that the objective specifies a time frame in which learners are expected to achieve the learning objective(s)—usually by the end of the session.

Examples of SMART objectives

- Following this session (*time-bound*), participants will describe (*action-oriented*) four factors (*specific, measurable, reasonable*) that increase the risk of HIV transmission in women.
- After attending the lecture and studying the assigned handouts (*time-bound, reasonable*), participants will list (*action-oriented*) three types of tests (*specific, measurable*) performed in India to detect HIV.
- Participants will be able to demonstrate (*action-oriented*) correct WHO staging of HIV-positive patients (*specific, measurable, reasonable*) in their clinical practice one month after the training (*time-bound*).

Examples of poorly written objectives (not SMART)

- To have adequate knowledge of PMTCT interventions.
This objective is not time-bound, which makes it difficult to determine if it is reasonable or not. The action verb is "have," which is not specific. Simply stating "adequate knowledge" is not specific enough to measure.
- To understand risk reduction strategies used for counseling patients.
This objective is not time-bound, which makes it difficult to determine if it is reasonable or

not. The verb, "understand," is not an action verb and is not easy to measure. Although we could try to measure understanding through a test or demonstration of some kind, there are more specific verbs to use in place of understand, which will be illustrated next.

SMART Objectives

Specific: *precisely states what the learner will be able to do*

Measurable: *can be observed or counted during or after the training session*

Action-oriented: *uses an active verb that represents a behavior change or acquisition*

Reasonable: *is appropriate to the time and scope*

Time-bound: *can be achieved by the end of the training*

Categories of Learning and Learning Objectives

Learning and mastery of a subject require more than simply acquiring new knowledge or facts. Educators often classify learning into three domains or categories based on a classification system created by Bloom at the University of Chicago (1956). These include cognitive, affective, and psychomotor; each domain includes subcategories that move from simple to more complex processes. Many trainers may be familiar with the categorization of learning according to the categories of "knowledge," "attitudes," and "practice." Bloom's categorization is similar, though in Bloom's system, knowledge is a subcategory within the cognitive domain.

When designing a training, it is important to think about these three domains of learning and their subcategories, and to develop objectives for the training that address each domain. This will lead to activities that engage the different domains of learning, and will result in a more holistic and comprehensive training.

The three domains of learning and their subcategories are explained below; note that the subcategories are organized by order of difficulty, with the most complex learning activities at the bottom.

The Cognitive Domain

What It Is

The cognitive domain relates to knowledge and intellectual skills such as understanding, organizing ideas, analyzing and synthesizing information, applying knowledge, choosing among alternatives in problem solving, and evaluating ideas or actions. Subcategories in the cognitive domain, described in the table below, move from simple cognitive processes — such as the basic recall of information — to more complex cognitive processes — such as the analysis and application of knowledge. The idea is that these levels reflect the process through which the learner moves in this domain, mastering the lower-level subcategories necessary to proceed to the next level.

Why It Is Important

The cognitive domain and its subcategories are important to consider when developing a training. The type of activities used to impart knowledge may be very different from the type of activities used to foster cognitive skills, such as synthesis, application, and evaluation. When developing objectives, think carefully about the cognitive subcategories, and consider developing objectives that enable participants to progress through this learning process.

COGNITIVE DOMAIN	ACTION VERBS for OBJECTIVES	EXAMPLE
Knowledge: recall; the ability to remember information	Describe, define, identify, list, name, recognize, reproduce, state	Identify the three primary modes of HIV transmission
Comprehension: understanding; the ability to interpret and explain information	Articulate, distinguish, estimate, explain, generalize, infer, interpret, paraphrase, rewrite, summarize, translate	Explain the difference between HIV and AIDS
Application: the ability to use information in a new situation, to use knowledge and skills acquired in the classroom to solve problems and create new approaches	Apply, change, construct, demonstrate, modify, operate, predict, prepare, produce, show, solve, use	Use WHO clinical staging definitions to assist in clinical decision making
Analysis: the ability to break down information to understand its structure, to categorize, and to recognize patterns	Analyze, categorize, compare, contrast, differentiate, identify, illustrate, infer, outline, relate, select, separate	Outline effective strategies for managing nutrition complications in HIV-infected patients
Synthesis: the ability to bring together sets of information to create or invent solutions to problems, to illustrate relationships between parts of a whole	Compile, create, design, diagnose, diagram, discriminate, explain, generate, modify, organize, plan, relate, reorganize, separate, summarize, write	Design an HIV-prevention counseling program based on the Ministry of Health's counseling standards and guidelines
Evaluation: the ability to make a judgment based upon evidence	Appraise, assess, compare, conclude, contrast, criticize, critique, describe, evaluate, explain, interpret, justify, summarize, support	Evaluate the risk faced by health care workers of contracting HIV on the job

The Affective Domain

What It Is

The affective domain relates to the emotional component of learning, and is concerned with changes or growth in interest, attitudes, and values. It emphasizes feeling, tone, emotion, or degree of acceptance or rejection. Learning in this domain can be demonstrated by behaviors indicating awareness, empathy, interest, attention, concern, responsibility, and ability to listen and respond. Subcategories, described in the table

below, move from more simple affective components — such as receiving and responding to new information — to more complex ones — such as organizing and internalizing values.

Why It Is Important

The affective domain is important to address when training health care providers, as the providers' values, emotions, attitudes, and beliefs can have a great impact on the type of care provided.

AFFECTIVE DOMAIN	ACTION VERBS for OBJECTIVES	EXAMPLE
Receiving (willing to listen): awareness, attention to new information	Ask, choose, describe, give, identify, locate, select	Ask open-ended questions to elicit information during a counseling session
Responding (willing to participate): active pursuit of an interest, willingness to respond, motivation	Answer, assist, discuss, greet, help, participate, present, read, report, select, tell	Present clients with risk-reduction strategies appropriate to their needs
Valuing (willing to be involved): the worth or value a person attaches to a particular object, situation, or behavior; reflects internalization of a set of values	Complete, demonstrate, differentiate, explain, follow, initiate, join, justify, propose, read, share	Demonstrate ability to provide a client with an HIV-positive test result in a compassionate and supportive manner
Organization (willing to be an advocate): the ability to prioritize and organize values	Adhere, alter, arrange, combine, compare, defend, explain, integrate, modify	Integrate professional standards of patient confidentiality into personal life
Internalizing values (willing to change one's behavior): the ability to act consistently and predictably according to a value system or consistent philosophy	Act, display, influence, listen, modify, perform, propose, question, serve, solve, verify	Act objectively when solving problems

The Psychomotor Domain

What It Is

The psychomotor domain (developed by Rothwell and Kazanas in 1989) relates to the physical skills and/or the performance of motor tasks according to a standard of accuracy, rapidity, or smoothness. Subcategories progress from observation to performance of a procedure to mastery of a physical skill. Learning is demonstrated by the learner performing the skill to a designated standard or level of proficiency.

Why It Is Important

In clinical training, this domain might include performance of a laboratory test or demonstration of a clinical procedure. Note that cognitive knowledge underlying the skill is generally necessary.

PSYCHOMOTOR DOMAIN	ACTION VERBS for OBJECTIVES	EXAMPLE
Perception: observation of behaviors involved in completing a task	Observe, attend to, ask, describe, participate, answer	Observe correct technique for conducting a pelvic exam
Set: becoming mentally prepared to perform the task	Question, explore, consider outcomes, participate, tell, give examples, express confidence	Describe the steps involved in conducting a rapid HIV test
Guided response: the early stage in learning a complex skill that includes imitation, performing a task with assistance, and trial and error; adequacy of performance is achieved by practicing	Complete, demonstrate, replicate, share, point out, break down, put together	Demonstrate an IV insertion procedure safely and correctly on multiple patients under supervision
Mechanism: the intermediate stage in learning a complex skill; learned responses have become habitual, and the movements can be performed with some confidence and proficiency (acting without assistance)	Arrange, choose, conduct, construct, design, integrate, organize, perform, modify, refine, respond, vary	Draw blood using universal precautions
Complex overt response: performing automatically with facility and habitually; fine tuning and perfection of the skill or technique	Arrange, choose, conduct, construct, design, integrate, organize, perform, modify, refine	Conducts a thorough physical examination

Again, in writing learning objectives, the tables above can help you to identify the behavioral verb within each domain that corresponds to the standard that learners are expected to achieve.

As mentioned earlier, the tables are organized by order of difficulty, with the most complex learning activities at the bottom. For example, within the cognitive domain, being able to criticize a process (a verb that falls into the evaluation level of learning) shows a much more complex behavior than simply being able to identify a process (a verb that falls into the more simple knowledge level of learning). Knowledge must be mastered before criticizing can take place. Identifying the domain and desired level of learning will dictate the methodologies and types of activities utilized in the training.

Example

The following is an illustrative set of objectives for a prevention of mother-to-child transmission of HIV and AIDS (PMTCT) workshop; the learning domain and subcategory are indicated after the objective:

By the end of the workshop, participants will be able to:

1. List and describe specific interventions to prevent HIV transmission to infants (cognitive — knowledge).
2. Correctly identify and describe prophylactic treatment regimens in five case studies of HIV-positive pregnant women (cognitive — application).
3. Develop a plan to integrate PMTCT into antenatal care (cognitive — synthesis).
4. Explore and reflect on personal attitudes and values related to pregnancy in HIV-positive women (affective — receiving, responding).
5. Demonstrate correct use of personal protective equipment (psychomotor — guided response).

How Do You Know if Learning Objectives Are Being Met?

Learning objectives describe the desired outcomes of a learning experience by specifying the expected results. Assessment of the learner's mastery of the objectives thus provides a measure of the effectiveness of a

course. Some of the most common evaluation methods are questionnaires, surveys, interviews, observations, tests, and participant portfolios of ongoing work. Evaluation strategies should be incorporated into a learning experience so that both trainers and participants know if the learning objectives have been met.

Just as good learning objectives guide training content and methods, they also guide the methods and tools used to assess the achievement of those objectives. **Cognitive** domain evaluation questions focus on *"What knowledge was gained, and how well can participants apply it?"* **Affective** domain evaluation questions focus on *"Did attitudes change, and in what way?"* **Psychomotor** domain evaluation questions focus on *"What skills were developed or enhanced?"* Whenever possible, choose evaluation methods that most accurately reflect both the domain and the level of learning described in the learning objective.

For example, imagine a learning objective that says, "Participants will be able to accurately perform rapid HIV tests." An evaluation activity in which instructors observe participants performing rapid HIV tests would provide a stronger indication that the learning objective had been achieved than a written exam in which participants describe how to conduct a rapid HIV test. If the learning objective was "Identify how provider bias might affect interactions with HIV patients," a short self-reflective essay or a discussion following a role play would probably be a better evaluation activity than a true/false test.

In addition to providing information about what participants learned, evaluation methods should provide information about the levels of understanding and expertise that participants have obtained. For example, asking students to list five common opportunistic infections is a good measurement of knowledge at the level of recall. Asking students to read a case study of an HIV patient, identify the opportunistic infections, and recommend appropriate treatment calls upon students to demonstrate more complex cognitive skills, involving both analysis and synthesis. If course learning objectives are targeted at achieving higher-level skills and expertise, the evaluation questions and activities should be designed to reflect this.

Evaluation activities can be conducted at any time during the learning experience. By observing class discussions or question-and-answer sessions during the course, instructors can see whether participants seem to be on track. This kind of ongoing assessment enables trainers to clarify any incorrect information with which participants are operating. It can also provide trainers with an opportunity to encourage participants to advance into more complex and sophisticated learning processes. More formal evaluations are usually conducted at the end of a training course to see whether or not the learning objectives have been achieved. In some instances, where learning objectives assume participants will need time back on the job to practice certain skills or implement certain strategies, it may make more sense to evaluate the achievement of learning objectives several months after the formal course instruction ends.

Resource List

- American Public Health Association. Guidelines for Writing Learning Objectives. Available at: <http://apha.confex.com/apha/learningobjectives.htm>.
- Bloom, B. S. (Ed.) Taxonomy of Educational Objectives: The Classification of Educational Goals. Susan Fauer Company, Inc. 1956.
- Clark, Don. Instructional System in Design: Design Phase. 1995. Available at: <http://www.nwlink.com/~donclark/hrd/sat3.html>.
- Clark, Don. Instructional System in Design: Learning Domains or Bloom's Taxonomy. Available at: <http://www.nwlink.com/~donclark/hrd/bloom.html>.
- Donovan, M. Suzanne, John D. Bransford, James W. Pellegrino, (Eds.) Brain, Mind, Experience, and School. National Research Council, 2000.
- Dynamic Flight, Inc. The Learning Process. 2003. Available at: http://www.dynamicflight.com/avcfibook/learning_process/.
- Kruse, Kevin. How to Write Great Learning Objectives. Available at: http://www.e-learningguru.com/articles/art3_4.htm.
- Piskurich, George M. Rapid Instructional Design: Learning ID Fast and Right. San Francisco: Jossey-Bass, 2000.
- Reproline: Reproductive Health Online. Training Works! Designing Training. Available at: <http://www.reproline.jhu.edu/english/6read/6training/Tngworks/designing.htm>.
- Teaching and Learning with Technology. Psychomotor Domain Taxonomy. Pennsylvania State University. Available at: http://tlt.its.psu.edu/suggestions/research/Psychomotor_Taxonomy.shtml
- Vella, Jane, Paula Berardinelli, Jim Burrow. How Do They Know They Know?: Evaluating Adult Learning. San Francisco: Jossey-Bass, 1998.
- Vinson, Cindy. Learning Domains and Delivery of Instruction. Available at: http://pixel.fhda.edu/id/learning_domain.html.