

Effective Adult Learning

A Toolkit for Teaching Adults

Developed by



Northwest Center for Public Health Practice
School of Public Health, University of Washington

in partnership with The Network for Public Health Law



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Effective Adult Learning

A Toolkit for Teaching Adults

This toolkit is to help you put together effective learning for adults. Intermediate- or advanced-level users may choose to scan the sidebars as reminders to use when developing instruction, rather than reading the full text. This toolkit contains four sections:

- 1. Adult Learning Overview** **page 2**
 - A. Getting Started **page 2**

Defining your audience, purpose, learning objectives, methods for delivery, and class size.
 - B. Developing Training Content **page 6**

Common questions and answers about materials, choosing instructional methods, and how to put it all together.
 - C. Delivering Your Training **page 10**

Background on using the Cone of Learning, tips on facilitating effectively, and 10 important lessons for presenters.

- 2. Learning Objectives In-Depth** **page 13**
 - A. Before and After Learning Objectives **page 13**

Examples of well written and poorly written objectives.
 - B. Writing Learning Objectives **page 15**

Details on how to write objectives and avoid common mistakes.

- 3. Tools & Templates** **page 21**

Tools and templates to help you create better trainings.

- 4. References** **page 27**

A short matrix of practical and classic theory references, with annotation.

Introduction

You don't need a degree in adult education to create excellent training courses. Follow the guidelines in this document, and you can develop trainings like a pro.

What's Different About Teaching Adults?

To be effective in teaching adults, it's important to know your audience and have a general understanding of how adults learn. Much has been written about the topic, and you can find suggestions for additional reading in Section 4: References.

To best reach adults, there are five key factors you should focus on in the development of your training:

1. The material presented should have immediate usefulness to the learners.
2. The material presented should be relevant to adult learners' lives.
3. The training environment should be welcoming so that all learners feel safe to participate.
4. The training presentation should be engaging.
5. The training should be presented in a respectful manner, where learners have an opportunity to share their experiences.

Following these key principles will help you determine what to include in your training and how to present it. Make your training relevant to the learner by recognizing the unique background and experience of people working in public health. To engage your audience, use examples or anecdotes showing how the material is relevant.

(Adapted from Knowles, M.L., The Adult Learner 6th ed., 2005)

How to Reach Adult Learners

You want to connect with your adult audience. Make sure your course is:

- immediately useful
- relevant
- welcoming
- engaging
- respectful

Make Connections

Stories, cases, and anecdotes help make connections.

Do you have a story related to your topic ready to share with your audience?

1. Adult Learning Overview

- A. Getting Started
- B. Developing Training Content
- C. Delivering Your Training

A. Getting Started

There are many ways to develop instruction, and educators have frequently debated which ways are the most effective. One practical approach that works well with adult learners shifts the thinking about developing instruction from “what will you teach,” to “what do the students need to learn?” This change of perspective will help the development process immensely.

To get started, you first need to be able to answer several key questions addressed in this section.

Who is my target audience, and what are their learning needs?

It is your responsibility as an instructor to find out who will be in the audience and what kind of training they have already received. It is also helpful to write a short description of your target audience. You can use this when disseminating information about your course.

Try to at least learn the answers to these three questions:

- **Who are you going to teach?** Get names and titles of your attendees, or at least the names of their places of employment.
- **What is their background?** If you can determine the students’ educational backgrounds, this will help in determining the depth of information to cover in your class.
- **Will some people need more training than others?** In cases where there are extreme differences in skill levels, you might consider holding several sessions at different levels of expertise—for frontline workers versus managers, for example.

Ideally, you should conduct a needs assessment prior to taking on a training project. This helps to identify gaps in learning and further targets the training for your audience. See Section 3: Tools and Templates, for a worksheet to help you do this.

Key Questions

- Who is my target audience, and what are their learning needs?
- What are the learning objectives for this training?
- What kind of training should I develop?
- How large should my class be?

Target Audience

Target audience descriptions do not need to be extensive, but they should be very specific.

For example, “The primary audience is governmental public health leadership and practitioners without formal legal training.”

What are the learning objectives for this training?

Your purpose should meld the key components of your audience, its training needs, its skill and knowledge deficits, and what you want to accomplish in your course. Think through what you want participants to learn as a result of your training. They should leave the training with new information and/or skills that they didn't possess prior to taking it.

Learning objectives serve as a type of contract with your audience and help put the purpose of your training in concrete, measurable terms. If participants know the objectives from the beginning, they know what they are expected to learn. Objectives also clearly focus on the desired outcomes.

Before you start developing your learning objectives, it's important to determine the kind of learning your students will be gaining. Identifying the type of learning—Knowledge, Skills or Attitudes (KSAs)—will help you develop more specific learning objectives.

For example, if your students' learning involves knowledge retention and the development of intellectual skills, it is considered knowledge-based. If your students' learning involves physical movement, coordination, and motor skills, it is considered skill-based. If your students' learning deals with motivation and values, it is considered attitudes-based.

Training Purpose

The purpose of your training should be anchored in:

- training needs
- skill, knowledge deficits
- what participants should know

Types of Learning

Types of learning fall into three categories:

Knowledge: specific facts, patterns, concepts

Skills: practical abilities measured in speed, precision

Attitudes: realizing feelings, values, motivation

How do I develop learning objectives?

Developing effective objectives that get to the purpose of your training is not easy. But you can do it by following a few simple steps. Objectives should be written from the participants' point of view. They should emphasize what you want students to value, understand, or do with the information or skills being taught.

According to Robert Mager, a world-renowned expert in instructional design, the simplest way to start writing learning objectives is by answering three questions:

1. What will participants be able to do as a result of the course, training, or class?
2. What are the conditions or circumstances where the participants will perform this activity, and what knowledge or materials does he/she need to do this effectively?
3. What level of proficiency is needed to perform the task or skill successfully or apply this information?

There are several different models that have been created to help in designing learning objectives. For developing practical objectives, you might consider the SMART Model. For considering objectives that may relate more to behavior change, you might consider the A-B-C-D Model.

See Section 2: Learning Objectives In-Depth, for more detail on how to write effective objectives and to see “before” and “after” examples.

Learning Objective Tips

SMART Model

This model is used to build practical objectives.

S is for Specific; specify what to achieve.

M is for Measurable.

A is for Achievable.

R is for Relevant.

T is for Time-bound.

A-B-C-D Model

This model is often used to build behavioral objectives.

A is for Audience. State the learning audience within the objective.

B is for Behavior. State the behavior you wish to see exhibited.

C is for Condition. State the conditions where the behavior will occur.

D is for Degree. To what degree will the learner be enabled?

What kind of training should I develop?

Will it be a one-time course or a series? Will it be face-to-face, online, or blended? How intensive, basic, or elaborate your training will be depends on determining the following:

- What resources are available?
- What are some potential challenges to this training (for example, format, class size, minimal resources)?
- What content needs to be created?
- What evaluation instruments need to be created?

The content and activities appropriate for your course should be tied directly to the learning needs and objectives that you have defined. To be most effective, they should be tailored to your audience.

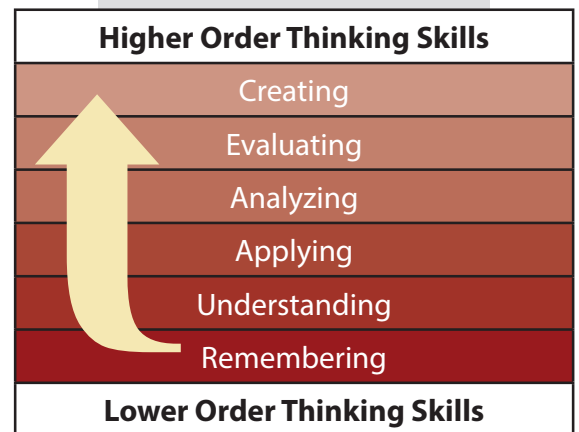
How large should my class be?

Based on current literature, the best class size estimate is approximately 15 students per classroom if you are teaching face-to-face, although debate still rages around a specific number. Smaller class sizes make it easier to break into groups or work on activities and use other learning methods besides lecture.

Higher order thinking skills tend to be learned most effectively by creating, evaluating, and analyzing content. Keep in mind that the more complex your material, the more time and activities you may need to provide your students, so they have plenty of opportunities to grasp the complexities. However, if you are faced with a larger group, you can still make the learning more interactive. Try breaking up your lecture session by having students discuss key concepts with those sitting around them or break into small groups to work on specific activities. These are common methods to improve learning in large group settings.

Class Size and Thinking Skills

Higher order thinking skills, like creating, evaluating, and analyzing, can be attained more easily in smaller classes with group activities.



Lower order thinking skills, like memorizing and remembering, need less interaction. Thus, they aren't as tied to class size.

(Courtesy: Churches, A. Educator's eZine, April 2008)

B. Developing Training Content

How do I develop training materials?

Developing training materials involves writing, creating learning exercises, and working with content experts and trainers. It is the most time-consuming phase, but it is also key to making sure your training is successful. Well designed, direct materials help drive your training and reinforce your learning objectives and outcomes.

You may have your draft materials reviewed by several people, and they may go through a number of revisions. Make sure the materials match the learning outcomes you identified, based on your assessment of the needs of your learners.

A basic way to pull together materials and/or related activities is to use your own experience as a learner. Complete the process below for each of your learning objectives for the course or training:

1. Identify one of your clearly stated learning objectives.
2. Determine what kind of learning domain the outcome involves (knowledge, skill, or attitude).
3. Choose an instructional method (activity, hand-out, team project, etc.) This helps participants accomplish your stated learning objective by doing.
4. Explain how this learning experience will help your students meet the learning objectives you have identified.

Key Questions

- How do I develop training materials?
- How do I choose instructional methods?
- How do I put it all together in a course?
- How do I create a trainer's manual?

How do I choose instructional methods?

There are a number of instructional methods to choose from when designing your materials. See Section 3: Tools and Templates, for a learning interventions worksheet to help you do this.

Listed below are some key methods, including purpose and when to use them:

Case studies, role plays, and small group discussions help participants discover learning points themselves and practice skills used in interactions. Best used to practice newly acquired skill, to experience what a particular situation feels like, to provide feedback to participants, or to apply new knowledge to a specific situation.

Classroom training, lectures, and lecturettes convey information when interaction or discussion is not desired or possible. Best used to convey information in a short time, to communicate the same information to large numbers of people, or to provide basic information to a group.

Experiential learning lets participants try new concepts, processes or systems in a controlled environment through supervised coaching, practicum, or internship, which includes debriefing and reflection. Best used in structured and mentored settings.

Games, table-tops, and simulations provide non-threatening ways to present or review course material and can be used to recreate a process, event or set of circumstances, usually complex, so that participants can experience and manipulate the situation without risk and then analyze what happened. Best used to integrate and apply complex skills, to elicit participants' natural tendencies and provide feedback, to provide a realistic job-related experience, to help grasp total program content, to present dry material in an interesting way, or to add a competitive element to a session.

Projects and writing tasks help participants reflect on their understanding of concepts, information, and ideas, and allow them to work individually or in small groups with the content. Best used to test for participants understanding or to provide for individual input.

Self-study allows an individual to acquire skills and knowledge through self-learning, guided by structured materials. Best used as computer-based modules, CD-ROM/DVD learning, and web-based virtual labs.

Methods of Instruction

Group activities

- Role plays
- Simulations
- Games

Individual

- Self-assessments
- Evaluations
- Writing

Either

- Case studies
- Projects

How do I put it all together for a course?

You have learned about your audience, assessed their needs, developed learning objectives, determined the type of training, and developed training materials. Now it's time to put it all together in a course.

See Section 3: Tools and Templates, for a worksheet to help you do this, or you can follow these simple steps:

1. Prepare a course outline with what needs to be learned and the time allotted. Clearly name the content (knowledge, skills, or attitudes) and learning objectives. Make sure your learning is sequenced, with easier learning first, building to complex.
2. Determine work-related professional competencies, capabilities or standards your course addresses, if applicable. See sidebar, “Public Health Standards & Competencies” on this page for competencies to consider. Note these competencies in materials you disseminate with your course.
3. Develop how learning will be evaluated. Will you include an assessment of some type? Examples include a quiz, test, or final project.
4. Develop a trainer’s manual or instruction sheet for yourself (see page 9 for more information), and a syllabus denoting what the class will cover for your students. Provide this to participants in advance if possible.
5. Include a warm-up exercise, appropriate for the group and setting.
6. Plan for open questions and ways to stimulate discussion throughout the course.
7. Make your course design flexible, providing options for assignments, to help meet different learning styles.
8. Set up activities that ensure the inclusion of all participants.
9. Provide follow-up—resources, books, contact names and numbers, websites—to reinforce learning.

Course Elements

- Course outline, learning objectives
- Competencies, if desired
- Evaluation tool
- Trainer’s instructions
- Student syllabus
- Warm-up exercise
- Question periods
- Flexible and inclusive activities
- Resources

Public Health Standards & Competencies

These resources may be helpful to consider for public health courses. Click the links to see each set.

[Core Competencies for Public Health Professionals](#)

[Public Health Preparedness & Response Core Competency Model](#)

[Public Health Preparedness Capabilities: National Standards for State and Local Planning](#)

How do I create a trainer’s manual or instruction sheet?

Depending on the type of training you are developing, it may be useful to produce a simple trainer’s manual or instruction sheet. This is useful to guide the delivery process for the trainer of the curriculum, including how to prepare for the training, gathering materials, lesson planning, etc. See a sample of a simple trainer’s instruction sheet for a short course below.

Example: Instruction Sheet for Trainers

Unit 1 - Workshop: Establishing Rapport and Understanding

During this unit, participants—whether they already know each other or not—will get to know each other in various ways. Introductions will help establish a group identity and give everyone a chance to state their training needs and expectations. Participants will explore how people might perceive health care roles and responsibilities quite differently than others do; and how that might impact teamwork and patient care.

Trainer Goals

- Help participants get to know each other and develop trust.
- Identify what participants want to get out of the training.
- Increase participants’ understanding of basic communication skills.

Learning Objectives

Participants will be able to:

- Express their training needs in regard to the training topic.
- Better understand the roles others play.
- Understand any false assumptions they had about other people’s work responsibilities and performance.
- Use at least one new communication tool.

Unit Outline

Time	Activity	Focus
5 minutes	#1: Presentation	Introductions and learning objectives
15 minutes	#2: Large group discussion	Participants identify themselves and their training needs and expectations
35 minutes	#3: Small group discussion of roles/large group follow-up	The assumptions (sometimes false) professionals can make about the roles of others and the problems this can cause in communication, teamwork
25 minutes	#4: Large group exercise	Enhanced communication skills

C. Delivering Your Training

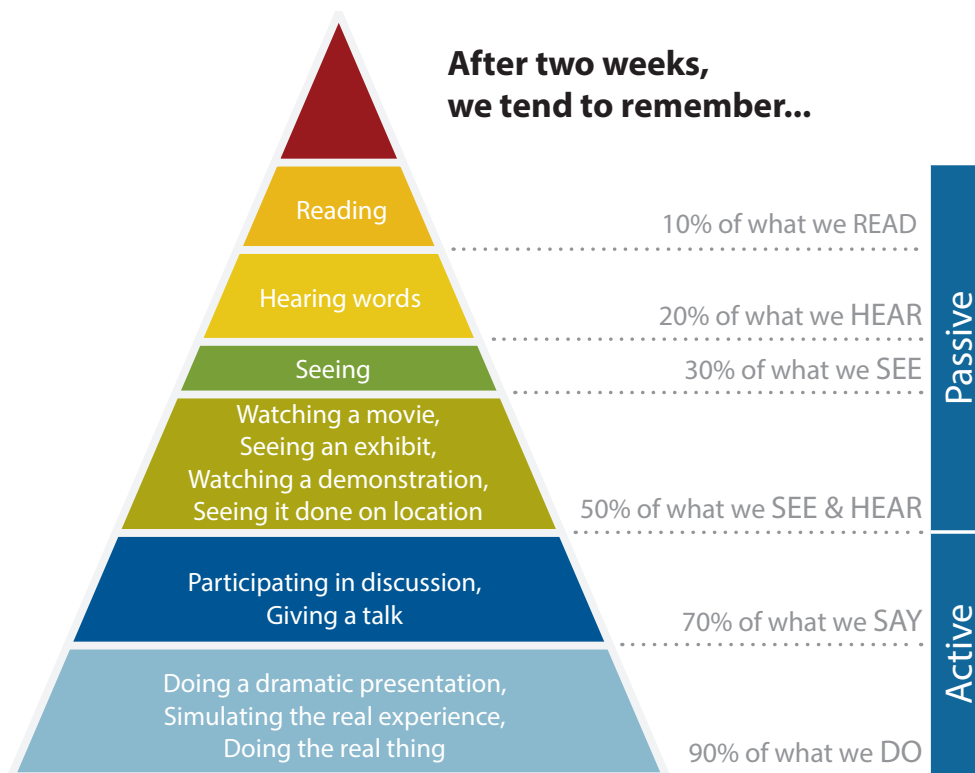
How do I increase retention?

People often remember more when they practice or use their learning compared to when they just read or hear information. The amount of information we remember is in direct proportion to the amount of involvement we had in the learning.

The **Cone of Learning** (see figure below) shows that we tend to remember only about 10 percent of what we read. Our memory increases when we hear and see something together—like watching a movie or going to an exhibit. We remember about 90 percent of what we say and do, like practicing what we learned. This is important for you to recognize as you deliver training to your adult learners. Choosing the appropriate methods for delivery is critical in increasing retention.

Key Questions

- How do I increase retention?
- What delivery method should I use?
- How do I facilitate effectively in the classroom?



(Based on the research of Edgar Dale, originator of "The Cone of Learning.")

What delivery method should I use?

There are many ways to deliver your training, depending on the type of learning you are developing. Below are a few of the key methods and some pros and cons of using them.

Delivery Method	Description	Advantages	Disadvantages
In-person learning	Classroom setting, traditional, formal learning	Effective when sharing information with large group, build bonds	Establishes a “tell-me” mindset, places burden of learning on teacher
E-learning	Computer-based, often distance-based	Provides training when learners need it, flexible	Loss of personal contact, computer-based tasks can be time-consuming for some, issues of access for those with disabilities.
Problem-based learning	Problem comes first and learners work through it, often in teams	Actively involves participants, stimulates peer group learning, promotes critical thinking	Can lose focus, can challenge inclusivity of group, can be difficult if there is a wide variety of skill sets among members
Blended learning	A hybrid of in-person and e-learning	Combines the best from multiple types of delivery methods	May be difficult for some learners to follow, may need additional reinforcement to stay on task
Nonformal learning	Most closely associated with skill or certificate programs	Structured learning environment, intentional to specific skills, or professional development	Often takes places outside of an academic organization, may not lead to recognized certification or licensure

(Adapted from the ASTD handbook for workplace learning professionals, 2008.)

How do I facilitate effectively in the classroom?

How effectively your course is received depends largely on the learning atmosphere you set up and model for your participants.

Support your participants by building an atmosphere of trust. Model a positive attitude, and provide constructive and supportive feedback. For example, you might say, “That’s a very good example of the concept we are discussing.”

Ensure the entire course content is covered. It is important to stick to a schedule and do what you say you will do. If participants deviate from the topic, create a “parking lot” for additional topics that come up. Arrange for a separate time to take those up (at a break, or designated review period).

Model effective facilitation skills by asking open-ended questions and rephrasing participants’ comments accurately for clarity, when needed. Respect every person’s feelings, perspectives, and contributions.

Facilitation Tips

- Build trust
- Model positive attitude
- Give supportive feedback
- Stick to a schedule
- Create a “parking lot” for deviations off topic
- Ask open-ended questions
- Respect every student’s feelings

10 important lessons for effective classroom presentations

Capturing the attention of an in-person class takes skill. Bob Pike, a nationally known trainer, provides some advice learned from seasoned professionals.

1. Don’t talk at participants. Involve them.
2. Encourage positive group dynamics. Reform and move students into groups as needed.
3. Allow participants to discover data for themselves.
4. Ask participants to keep an action or idea list, and revisit it throughout the session.
5. Learning is directly proportionate to the amount of fun you have.
6. Change the pace. Listening with retention only lasts about 20 minutes at a time.
7. Design your class so participants leave impressed with themselves and what they learned.
8. Allow adults learners to use their expertise by leaving time to share experiences.
9. Don’t offer material only one way. Recognize your participants will learn differently.
10. Teach the things you have a passion for!

Resolving Class Conflicts

- Agree to class rules early on
- Teach and model the right thing to do, set norms for your classroom
- Shut down unhealthy conversations and inappropriate behavior immediately
- Redirect back to the subject at hand, take the focus off the negativity

(Adapted from Robert W. Pike, ASTD handbook for workplace learning professionals, 2008.)

2. Learning Objectives In-Depth

A. Before and After Learning Objectives

B. Writing Learning Objectives

A. Before and After Learning Objectives

While writing learning objectives may seem like a small task, if you design them poorly, it will be more difficult to produce an effective training and almost impossible to measure results. Below are examples of “before” and “after” learning objectives to help contrast the differences.

Let’s assume that we are creating a training program for receptionists. The goal of the program is simply to train people in proper phone use. What might the specific tasks and associated learning objectives include?

“Before” learning objectives (poorly defined)	“After” learning objectives (well defined)
<p>After completing this course you will be able to:</p> <ul style="list-style-type: none">• operate your phone• know how to greet callers• understand the call transferring procedure	<p>After completing this course you will be able to:</p> <ul style="list-style-type: none">• place a caller on hold• activate the speaker phone• play new messages on the voice mail system• list the three elements of a proper phone greeting• transfer a call to a requested extension
<p>These objectives do not indicate observable behaviors, making assessment of their mastery impossible.</p> <p>How does one know if someone knows or understands something? What does it really mean to operate the phone?</p>	<p>These objectives are built around very discrete tasks. Instead of the vague objective to “operate the phone,” the learner knows exactly what is expected for successful operation—namely, using the hold feature, speakerphone, and voice mail system. More importantly, these behaviors are observable.</p>

Adapted from “How to Write Great Learning Objectives,” by Kevin Kruse

Let's look at another example of a poorly defined set of learning objectives and their improved, well defined counterparts. The following objectives were developed for a public health law course.

"Before" learning objectives (poorly defined)	"After" learning objectives (well defined)
<p>After completing this course you will be able to:</p> <ul style="list-style-type: none"> • Be aware of legal terms. • Improve working relationships with lawyers. • Have an increased awareness of public health law. 	<p>After completing this course you will be able to:</p> <ul style="list-style-type: none"> • Recognize legal issues. • Formulate legal questions. • Implement effective strategies for working with legal counsel. • Describe key principles of public health law. • Identify key public health laws that govern leadership's responsibilities, authority, and limitations.
<p>These objectives do not indicate observable behaviors, making assessment of their mastery impossible.</p> <p>How does one know if someone knows or is aware of something? What does it really mean to improve working relationships?</p>	<p>These objectives are measurable as they are built around tasks. Instead of the vague objective to "be aware of legal terms," the learner knows exactly what is expected. Rather than seeking "an increased awareness of public health law," the course is asking the student to "describe key principles of public health law and identify those that govern leadership's responsibilities, authority and limitations."</p>

The following learning objectives are from a legal course dealing with minor consent, confidentiality and mandatory reporting:

"Before" learning objectives (poorly defined)	"After" learning objectives (well defined)
<p>After completing this course you will be able to:</p> <ul style="list-style-type: none"> • List what is meant by consent. • Identify requirements for agencies. • Be able to explain confidentiality. 	<p>After completing this course you will be able to:</p> <ul style="list-style-type: none"> • List four types of health care to which minors are able to consent. • State requirements of Title X agencies for providing reproductive health services to minors. • Describe the role of confidentiality in providing health care to minors.

B. Writing Learning Objectives

Educators have used learning, or behavioral, objectives for at least four decades. Today, the use of objectives has become routine in education and many national accrediting organizations recommend using them. Objectives are not difficult to write if you follow the guidelines below.

Benefits of incorporating objectives within your coursework include: emphasis of major points and reduction of non-essential material, simplification of note taking, cueing the students to emphasize major points, assistance in organizing and studying material, and guiding students to what is expected from them.

Key Components

- Four factors of strong objectives
- Finding the right verb
- Functional action verbs
- Preferred order when writing objectives

Four factors of strong objectives

1. **The action verb** is the most important element of an objective and can never be omitted. It states precisely what the student will do following instruction. Verbs are categorized by domains of learning and various hierarchies. The three domains of learning are: Cognitive Domain (emphasizes thinking), Affective Domain (highlights attitudes and feelings), and Psychomotor Domain (focuses on doing).
2. **Conditions** describe the relevant factors associated with the desired performance. For example: “after attending a lecture,” “following review of a demonstration,” or “given a case study.”
3. **Standards, or criteria**, tell how well the learner must perform. You can omit this part of the objective when there is no difference from standard procedures or protocols. For example, the learner must: 1) achieve a percent of correct responses, 2) complete something within a given time period, 3) be in compliance with criteria presented by the faculty.
4. **The audience** for your learning objectives is always your students. Make sure you are clearly defining who your audience is and who your training is for before writing learning objectives.

Diagram of a Learning Objective

After completing this course, you should be able to list at least three common data sources

Audience

Verb

Standard

used to characterize health or disease status of a community.

Condition

Finding the right verb

If you look closely at the first domain of learning (cognitive), you will find that verbs can be further divided into six levels or hierarchies.

Level 1: KNOWLEDGE

This level involves recalling definitions and specifics. Learners should remember an idea, phenomenon, or a fact. Examples: 1) write a formula, 2) define a term.

Level 2: COMPREHENSION

This level involves translating and associating. Learners should be able to communicate an idea in a new or different form or see relationships among things or events.

Examples: 1) describe three distinguishing features of a specific system, 2) explain the rationale for using a particular tool.

Level 3: APPLICATION

This level involves using abstract concepts in specific applications. The abstractions may be in the form of general ideas, rules or procedures, or generalized methods.

Examples: 1) when given a scenario, submit the most suitable alternative taking into account all factors, 2) apply a particular technique to maintain safety.

Level 4: ANALYSIS

This level involves examining elements, relationships and organizational principles. This involves understanding organizational structures. Examples: 1) when given a set of data, ascertain whether they are internally consistent and can be reported, 2) when given specific information, analyze the results to identify an unanticipated outcome.

Level 5: SYNTHESIS

This level involves generating a set of abstract relations (to hypothesize), creating a plan, or a set of operations.

Examples: 1) prepare appropriate financial statements for decision-making, 2) propose a structure to optimize efficiency and effectiveness.

Level 6: EVALUATION

This level involves using internal standards and external criteria to bring about informed decisions. Examples: 1) evaluate and select an automated system in view of costs, personnel, productivity and space, 2) validate all of the data received in a specific situation.

Verbs to Avoid

The following verbs cannot be measured or are redundant. They should be avoided when writing learning objectives.

- able to
- shows interest in
- has appreciation for
- knows
- has awareness of
- has knowledge of
- is capable of
- learns
- comprehends
- memorizes
- is conscious of
- understands
- is familiar with
- will be able to

Functional action verbs: Cognitive (thinking) domain

The charts below provide examples of action verbs for each domain. The cognitive domain can also be grouped into three categories: recall, interpretation, and problem-solving.

Key Verbs: Cognitive (Thinking) Domain

	Comprehension	Application	Analysis	Synthesis	Evaluation
Knowledge	Arrange	Adapt	Analyze	Arrange	Appraise
Cite	Associate	Apply	Appraise	Assemble	Approve
Choose	Clarify	Catalog	Audit	Build	Assess
Define	Classify	Chart	Break down	Combine	Choose
Label	Convert	Compute	Calculate	Compile	Conclude
List	Describe	Consolidate	Categorize	Compose	Confirm
Locate	Diagram	Demonstrate	Certify	Conceive	Criticize
Match	Draw	Develop	Compare	Construct	Critique
Name	Discuss	Employ	Contrast	Create	Diagnose
Recall	Estimate	Extend	Correlate	Design	evaluate
Recognize	Explain	Extrapolate	Criticize	Devise	Judge
Record	Express	Generalize	Deduce	Discover	Justify
Repeat	Identify	Illustrate	Defend	Draft	Prioritize
Select	Locate	Infer	Detect	Formulate	Prove
State	Outline	Interpolate	Diagram	Generate	Rank
Write	Paraphrase	Interpret	Differentiate	Integrate	Rate
	Report	Manipulate	Discriminate	Make	Recommend
	Restate	Modify	Distinguish	Manage	Research
	Review	Order	Examine	Organize	Resolve
	Sort	Predict	Infer	Plan	Revise
	Summarize	Produce	Inspect	Predict	Rule on
	Transfer	Relate	Investigate	Prepare	Select
	Translate	Sketch	Question	Propose	Support
		Submit	Reason	Reorder	Validate
		Tabulate	Separate	Reorganize	
		Transcribe	Solve	Set up	
		Use	Survey	Structure	
		Utilize	Test	Synthesize	
			Uncover		
			Verify		

Note: Some verbs may be applicable within more than one category: for example, depending on the situation, "calculate" may fit under application or analysis.

Functional action verbs: Attitudinal or affective (valuing) domain

The chart below provides examples of action verbs that can be used in the attitudinal or affective (valuing domain). Use these when you have learning objectives involving changing attitudes.

Key Verbs: Attitudinal or Affective (Valuing) Domain

Receiving	Responding	Valuing	Organization	Characterization by a value
Accept	Agree	Adopt	Anticipate	Act
Acknowledge	Allow	Aid	Collaborate	Administer
Attend (to)	Answer	Care (for)	Confer	Advance
Follow	Ask	Complete	Consider	Advocate
Listen	Assist	Compliment	Consult	Aid
Meet	attempt	Contribute	Coordinate	Challenge
Observe	Choose	Delay	Design	Change
Receive	Communicate	Encourage	Direct	Commit (to)
	Comply	Endorse	Establish	Counsel
	Conform	Enforce	Facilitate	Criticize
	Cooperate	Evaluate	Follow through	Debate
	Demonstrate	Expedite	Investigate	Defend
	describe	Foster	Judge	Disagree
	Discuss	Guide	Lead	Dispute
	Display	Initiate	Manage	Empathize
	Exhibit	Interact	Modify	Endeavor
	Follow	Join	Organize	Enhance
	Give	Justify	Oversee	Excuse
	Help	Maintain	Plan	Forgive
	Identify	Monitor	Qualify	Influence
	Locate	Praise	Recommend	Motivate
	Notify	Preserve	Revise	Negotiate
	Obey	Propose	Simplify	Object
	Offer	Query	Specify	Persevere
	Participate (in)	React	Submit	Persist
	Practice	Respect	Synthesize	Praise
	Present	Seek	Test	Profess
	Read	Share	Vary	Promote
	Relay	Study	Weigh	Question
	Report	Subscribe		Reject
	Respond	Suggest		Resolve
	Select	Support		Seek
	Try	Thank		Serve
		Uphold		Strive
				Solve
				Tolerate
				Volunteer (for)

The affective domain is concerned with changes (growth) in interests, attitudes, and values. It is divided into five major classes arranged in hierarchical order based on level of involvement (from receiving to characterization by a value).

Functional action verbs: Psychomotor (doing or skills) domain

The chart below provides examples of action verbs that can be used in the psychomotor (doing or skills) domain. Use these when you have learning objectives involving physical movement or learning skills.

Key Verbs: Psychomotor (Doing or Skills) Domain

Absorb	Decant	Identify	Position	Squeeze
Add	Demonstrate	Illustrate	Pour	Stain
Adsorb	Describe	Incubate	Prepare	Standardize
Adjust	Design	Inject	Press	Start
Aliquot	Dialyze	Input	Process	Stick
Apply	Differentiate	Insert	Produce	Stir
Aspirate	Dilute	Invert	Program	Stop
Assemble	Discard	Investigate	Pull	Stopper
Balance	Dismantle	Isolate	Puncture	Store
Bind	Dispense	Label	Push	Suspend
Blend	Dispose	Locate	Read	Take
Build	Dissect	Localize	Record	Test
Calculate	Dissolve	Lyse	Release	Thaw
Calibrate	Drain	Maintain	Remove	Thread
Centrifuge	Draw	Make	Replace	Tilt
Change	Dry	Maneuver	Resuspend	Time
Choose	Elute	Manipulate	Retest	Tip
Classify	Employ	Mark	Rinse	Titrate
Clean	Estimate	Macerate	Roll	Trim
Collate	Evacuate	Measure	Rotate	Touch
Collect	Examine	Mix	Save	Transfer
Combine	Expel	Moisten	Scan	Troubleshoot
Connect	Fasten	Mount	Score	Turn
Construct	Fill	Observe	Screen	Type
Control	Filter	Obtain	Seal	Use
Combine	Fractionate	Open	Select	Utilize
Confirm	Frame	Operate	Sanitize	View
Connect	Freeze	Pack	Separate	Warm
Construct	Grade	Palpate	Set	Wash
Control	Grasp	Participate	Sever	Watch
Cool	Grind	Perform	Shake	Weigh
Correct	Group	Pick	Sharpen	Withdraw
Count	Guide	Pipet	Ship	Wipe
Create	Handle	Place	Siphon	Wrap
Crush	Heat	Plate	Spin	
Cut	Hemolyze	Plot	Spread	

Preferred order when writing objectives

There is a preferred order when writing objectives. The condition is usually placed first, followed by the behavior or verb, and then the criteria. Objectives are written in the future tense. Here are some general examples from the three cognitive (thinking) levels:

- Recall: After attending lecture and reading the assigned materials, the student will state the function of a thermometer.
- Interpretation: After attending lecture and studying the assigned materials, the student will demonstrate how a thermometer works.
- Problem-solving: After attending lecture and studying the assigned materials (including problem sets), the student will formulate the degrees in C given the degrees in F, or vice versa.

To avoid redundancy in writing objectives, an educator often lists a single condition with the objectives underneath.

After attending the lecture and studying the assigned materials, the student will:

1. _____
2. _____
3. _____

(Adapted from material originally provided by Kathy V. Waller, PhD, CLS (NCA), NAACLS Board of Directors and available on the National Accrediting Agency for Clinical Laboratory Services website.)

Order of Objectives

Learning objectives are usually written in the following order:

1. Condition
2. Behavior or verb
3. Criteria

3. Tools & Templates

These tools and templates will help walk you through various steps in planning for adult education experiences.

A. Training Needs Assessment Worksheet

What are the learning needs of your audience?

B. Learning Interventions

What kind of training is needed?

C. Curriculum Design Worksheet

How do I design my course?

D. Learning Theories

How do I determine delivery methods?

F. Ways to Spot Levels of Learner Engagement

How do I know if my learners are engaged?

A. Training Needs Assessment Worksheet

This worksheet is useful in developing a class or workshop. To help you begin building a training, complete the table below.

Type of information needed to develop course	What is already known pertaining to this?	What do you still need to find out?
<p>Desired outcome:</p> <p>What should participants be able to do as a result of your training?</p>		
<p>Analysis of participants:</p> <p>Who are the participants or students you will teach?</p>		
<p>Learning context:</p> <p>What constraints do you have or anticipate?</p>		
<p>Content expertise:</p> <p>What content experts are available to help?</p>		
<p>Training expertise:</p> <p>What training experts are available to deliver the training?</p>		
<p>Logistical requirements:</p> <p>What size is your training group? Do you need translation services? What type of access is available?</p>		

(Adapted from I-Tech, 2004.)

B. Learning Interventions

This worksheet can be used to determine the type of learning needed for an adult learner to attain the desired results. Place a check next to the learning types that are appropriate for your training.

Learning type		Description or explanation	Sample applications
<input type="checkbox"/>	Case Studies, Role Plays & Small Group Discussions	Participants discover learning points themselves. The individual assumes roles other than his/her real ones or is thrust into settings that are different from the current one.	Problem-based learning, psychodramas, sociodramas, group role play, practice in handling social interactions
<input type="checkbox"/>	Classroom Training, Lectures & Lecturettes	The individual acquires skills and knowledge through guidance from an instructor in a formal group setting, not in the workplace. In the case of distance learning, webinars, and webcasts, the individual may be at the work site, but the session is not usually a part of work activities.	Seminars, conferences, workshops, lectures, demonstrations, Internet-based classes, video and audio conferences, webinars, webcasts, certificate programs
<input type="checkbox"/>	Experiential Learning	Individual or group participates in structured debriefing sessions to reflect on the experiences encountered and draws conclusions.	Practicum, structured and mentored internship, field placement with coaching, on-the-job practice and work sessions, and supervised transitional work settings following training
<input type="checkbox"/>	Games, Table-Tops & Simulations	The individual performs as she/he would in real life. The setting, however, is an artificial creation designed to resemble the natural environment.	Physically realistic simulators, virtual reality environments, psychologically realistic settings, in-basket exercises, structured games, virtual labs, assessment centers
<input type="checkbox"/>	Projects & Writing Tasks	Participants reflect on their understanding of concepts, information, ideas and allow them to work individually or in small groups with the content.	Reports, PowerPoints, articles, postings, larger writing projects
<input type="checkbox"/>	Self-Study	The individual acquires skills and knowledge through self-learning, guided by structured materials ranging from print to electronic systems.	Directive instruction, computer-based modules, web-based virtual labs, CD-ROM/ DVD learning modules, web explorations

(Adapted from ASTD handbook for workplace learning professionals, 2008.)

C. Curriculum Design Worksheet

Complete this training worksheet to help you begin designing your training.

1. **General theme or topic:** In general, what knowledge and skill areas will be the focus of this training or workshop?
2. **Goals and objectives:** What do you want participants to learn during the training? What will they leave knowing more about or what new skills will they have acquired?
3. **Essential questions:** What central questions do you want participants answering as the training unfolds?
4. **Summary of participant activities:** How will participants accomplish the curriculum objectives and answer the questions in numbers 2 and 3 above? (E.g., small group discussions and projects, presentations, role-playing, etc.)
5. **Resources:** What resources might the trainer use to help participants accomplish curriculum objectives? Examples might include current research articles, guest speakers, discussions.
6. **Assessment activities:** Will you offer assessment activities (tests, graded presentations/projects)? How will you determine if participants a) have reached curriculum objectives identified in number 2 above, and b) can answer the questions in number 3? Will you use rubrics or other assessment tools?

(Adapted from I-TECH, 2004.)

D. Key Learning Theories

This chart can help you make decisions on the learning approaches you may want to use. Place a check in the box next to the theories appropriate for your training.

Learning theory		Key contributors	About	Examples of application
<input type="checkbox"/>	Andragogy	M. Knowles (1968)	"Art and science of helping adults learn"	Adults have the need to know why they are learning something; they learn through doing and problem-solving; the subject is of immediate use.
<input type="checkbox"/>	Behaviorism	B.F. Skinner (1938)	All behavior can be explained through stimulus-response	Does not account for all kinds of learning as it disregards activities of the mind; positive and negative reinforcement techniques in the classroom.
<input type="checkbox"/>	Brain-based learning	Caine (1991) and others	Based on the structure and function of the brain	Teachers should maximize the natural learning processes by designing or orchestrating "lifelike, enriching, and appropriate experiences for learners."
<input type="checkbox"/>	Communities of practice	Lave and Wenger (1991)	Structure of communities and how learning occurs in them	Apprenticeships, school-based learning, service learning, real problem solving.
<input type="checkbox"/>	Cognitive development	Piaget (1936)	Focus on the inner mental activities exploring mental processes of children	Information comes in, is processed, and leads to certain outcomes—examples include symbol manipulation, information mapping, mental models.
<input type="checkbox"/>	Computer-supported collaborative learning	Koschmann (1996) Hakkinen (2002)	Multi-faceted pedagogical practices using Information and Communication Technology	No unified theory, diverse standpoints on how collaborative learning and technology can work together, various applications being tried.
<input type="checkbox"/>	Constructivism (activity)	Vygotsky, (1978); Dewey, Vico, Rorty, Bruner, Piaget	Learning is an active constructive process	Learner is not a blank slate but brings past experiences and cultural factors to the situation.
<input type="checkbox"/>	Experiential	Kolb and Fry (1975)	Emphasizes role that true experiences have in learning process	Concrete experiences; observation and reflection; forming abstract concepts; testing in new situations.
<input type="checkbox"/>	Multiple intelligences	H. Gardner (1983)	8 (or more) different intelligences	Traditional schools often focus on only two intelligences, verbal-linguistic and logical-mathematical. More balanced curriculum includes more equal emphasis on other intelligences by role playing, music, cooperative learning, reflection, visualization, physical education.
<input type="checkbox"/>	Problem- or project-based learning,	Boud and Feletti (1991); Helle, et. al. (2005)	Both approaches begin with problem or question raised	This is often an adult learning model that starts with a problem orientation, often favored in work-based settings. Question raised, leads to experiment or hypothesis, verified, then reviewed.
<input type="checkbox"/>	Transformative learning	Mezirow (1991)	Learner challenges assumptions through critical lens	Ability to create new meaning in the process.

(Adapted from Latrissa L. Neiwirth, *Moderating a One-Size-Fits-All Approach: Learning Styles, Brain Dominance and Effective Curricula*, 2012.)

F. Ways to Spot Level of Learner Engagement

Use this checklist to assess the level of learner engagement during your class. The behaviors at the top of the list indicate a positive level of engagement, so the desired answer is “yes.” The behaviors shaded in grey at the bottom of the list indicate low levels of engagement, so the desired answer is “no.”

Verbal and Non-Verbal Cues	Yes	No
Nods head		
Smiles or makes eye contact		
Looks interested		
Asks relevant questions		
Leans forward		
Shares experience		
Tries activities or assignments on their own		
Adds relevant information to the topic		
Drums fingers		
Shrugs or yawns		
Talks to neighbor, easily distracted		
Closes eyes		
Looks away or stares		
Crosses arms or legs		
Rests head in palm of hand		
Comes to class late		

4. References

Practical Guides

Reference	Description
1. Biech, E. (Ed.), (2008). <i>ASTD handbook for workplace learning professionals</i> .	User-friendly guide that breaks down every aspect of training.
2. Mager, R. F. (1997). <i>Preparing instructional objectives: A critical tool in the development of effective instruction</i> .	The “how-to” guide is for developing instructional objectives.
3. Schank, R. (2005). <i>Lessons in Learning, e-Learning, and Training: Perspectives and Guidance for the Enlightened Trainer</i> .	Practical tips on delivering your training effectively.
4. <i>Evaluation Toolkit</i> , (2012). Northwest Center for Public Health Practice, School of Public Health, University of Washington	Practical tool to help in effectively evaluating your trainings.
5. <i>Presentation Toolkit</i> , (2012). Northwest Center for Public Health Practice, School of Public Health, University of Washington	Practical tool to help in effectively presenting your material.

Classics/Theory

Reference	Description
1. Dick, W. O., Carey, L., & Carey, J. O. (2008). <i>The systematic design of instruction</i> .	This classic book simply and clearly introduces readers to the fundamentals of instructional design.
2. Friere, P. (2000). <i>Pedagogy of the oppressed</i> .	Classic text considered one of the foundational books of critical pedagogy.
3. Gagné, R. M. (1965). <i>The conditions of learning and theory of instruction. (1st ed.)</i>	Gagné’s influence yielded prescriptive principles which have had a substantial impact upon educational practice.
4. Gardner, H. (1983). <i>Frames of mind: The theory of multiple intelligences</i> .	The theory of multiple intelligences was proposed as a model that differentiates intelligence into various specific modalities.
5. Knowles, M. L. (2005). <i>The adult learner (6th Ed.)</i> .	Classic text on adult learning and considered one of the foundational books on andragogy.