

Table 6-1: Instructional Strategies

Strategy	Description
Interactive lecture	Instructor presents information in a two-way (instructor ↔ learner) or multiple-way (instructor ↔ learners ↔ learners) communication. This strategy usually includes a great deal of question-and-answer interaction.
Hands-on laboratory	This is guided, hands-on learner practice of principles and procedures with feedback and/or exploration. This sometimes requires a special practice environment with appropriate equipment.
Reading	Learning from text in print or on screen. Can include tools, procedures, and guidelines to apply.
Interactive reading	Written material in the form of exercises, cases to solve, self-checklists and job aids to apply. This strategy often includes feedback about the learner's activity and results.
Self-study	Structured content that is based on the objectives and leads the learner (who interacts with the material on his or her own) to attain the objective. Each objective usually generates exercises, self-tests, and feedback. Self-study is sometimes referred to as <i>asynchronous learning</i> because it is not time-bound and in sync with an instructor's presence.
Simulation	The learner interacts with a concrete or abstract representation of a system (a real or imaginary one). To learn how the system works and how to master it, the learner manipulates or copes with system elements and events.
Game	This is an activity that challenges the learner-player, makes him or her follow certain rules and rewards, or punishes the player with points or lack of progress. There is always a "win rule" (or set of rules).
Simulation game	This is a learning design that combines the dynamic characteristics of simulation with the challenge of a game.
Peer learning	This is an activity in which learners learn from each other. Sometimes the activity is highly structured and the peer-tutor receives preparation and materials. However, peer learning can also be informal and involve mutual coaching and feedback.
Case study	This type of learning activity provides learners with scenarios based on real or hypothetical situations, and may include additional relevant documentation. Using the information provided in the case, the learner, alone or in a team, analyzes what is provided, and then tries to make sense of it, make appropriate decisions, and/or solve the case.
Behavior modeling	The instructor or a video offers a model of how things should be done. Learners rehearse and practice with feedback as cues are faded out.

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Table 6-1: Instructional Strategies (continued)

Strategy	Description
Role play	Learners are given (or create) scenarios, assume roles, and then spontaneously act out their roles as they try to learn about themselves and/or others—about how they act and feel.
Listening teams	Teams of learners listen to a lecture or observe a video. They take notes on a part of what is being said or done, and then share this with the group, sometimes in a different format. Often, listening teams are assigned the responsibility of ensuring that all other learners master their specific areas of listening responsibility.
Guided discussion	An instructor provides learners (teams or a whole group) with issues, challenges, and/or information, and guides logical discussion about these, eliciting facts, opinions, and concerns.

Table 6-2: Remedial Actions to Compensate for Deficits in the Ingredients That Affect Learning

Deficient Ingredient	Remedial Action
Ability	<ul style="list-style-type: none"> • Break the learning into smaller chunks • Simplify • Use lots of concrete examples • Eliminate nonessential contents • Provide sufficient practice for each smaller chunk of learning to ensure mastery • Build slowly from the simple to the complex • Illustrate
Prior knowledge	<ul style="list-style-type: none"> • Create special learning sessions that focus on prerequisite skills and knowledge • Build connections with familiar past experience • Distribute materials that provide essential prerequisite information, with practice exercises as needed • Create tutorials and remedial sessions • Pair individuals who have prior knowledge gaps with those who can help them, those who can share their knowledge • Create study teams with mixed levels of knowledge, and make them responsible for helping each other
Motivation	<ul style="list-style-type: none"> • Demonstrate the value and benefits of the learning personally as well as to others • Show admired role models buying into the learning content • Build confidence by providing guided and supported practice • Include sufficient challenge to stimulate involvement • Provide success stories • Maintain an upbeat, positive atmosphere • Make learning fun and rewarding • Reward success

Table 7-1: Four Key Adult Learning Principles

Principle	Explanation
Readiness	When adult learners see the ways they will benefit from what they are learning, they become more “ready” to learn. They open their minds to it. They are mentally and emotionally receptive to the learning.
Experience	Adult learners are not empty vessels. They learn best when the learning content and activities integrate with what they already know, and are readily assimilated.
Autonomy	Adults learn better when they participate actively in the training, and contribute to their own learning and that of other participants.
Action	Adult learners live in a constant state of conflicting priorities. If they see how they can credibly and profitably apply what they are learning immediately, their focus sharpens and their desire to learn increases.

Table 9-1: Cognitive Strategies

Type of Cognitive Strategy	Explanation	Examples
Clustering	Way of arranging or organizing information for easier perception, understanding, retention, and recall	<ul style="list-style-type: none"> • Teaching similar products or tools together in categories that are easy to remember • Organizing the names of a group of people in alphabetical order • Placing events in chronological sequence
Spatial	Visual displays of information in layouts that allow a large number of elements to be readily perceived, comprehended, retained, and recalled	<ul style="list-style-type: none"> • A matrix that organizes information into a visually simple display (see Exhibit 9-1) • A Venn diagram that shows how various independent elements interact and overlap (see Exhibit 9-2) • A flowchart that shows how a procedure works
Advance organizers	Organized, short information packets at the front of something to be learned that create an expectation, build a vision, or sensitize the learner to what to look for. They help the learner prepare for what is to come. Often they relate what the learner will encounter to prior knowledge.	<ul style="list-style-type: none"> • A brief introductory sentence or two at the beginning of a text that tells the learner where to focus (see Exhibit 9-3) • A set of questions that prime a learner on what to watch for prior to viewing a video (a video viewing guide) • A recap of key points from previous chapters in a manual that are directly linked to new material the learner will encounter in the current chapter
Image-rich comparisons	Analogies, similes, metaphors, and literal comparisons whose purpose it is to build a bridge between prior knowledge and new learning material	<ul style="list-style-type: none"> • Comparing the work of a private investigator (known) to troubleshooting a piece of equipment (new learning) • Showing how the keypad on a computer keyboard (new learning) works similarly to a hand-held calculator (known) • The desktop metaphor (known) we use and view on our computer screens to manipulate software applications and files (new, abstract learning)
Repetition	Activities that have the learner practice and rehearse content in organized ways until she or he can recall it automatically and rapidly (see Exhibit 9-4)	<ul style="list-style-type: none"> • A computer-based game for railway personnel working aboard trains that shows 160 different types of signals. The learner must act appropriately each time as the signals appear at faster rates. • Practice with flashcards to learn the multiplication tables • Highlight key points to retain in study material. Convert these to test questions. Constantly ask the questions and respond with the correct answers. In each round, retain all questions incorrectly answered and then start again. Repeat until you can answer all questions perfectly and without hesitation.
Memory aids	Groups of easy-to-remember letters, words, or images that help learners store and retrieve more complex material	<ul style="list-style-type: none"> • Acronyms: IRS, ABCs, NAFTA • Rhymes: "i" before "e" except after "c" or when sounded "a" as in neighbor or weigh but weird is just weird • Acrostics: Richard of York gave battle in vain (the order of the colors in the spectrum of a rainbow: red, orange, yellow, green, blue, indigo, violet)

Table 11-1: Levels of Certification

Type of Requirement	Certification Level	Examples
<ul style="list-style-type: none"> Pay a fee; receive a certificate 	I	<ul style="list-style-type: none"> Become a registered clergyman of the Church of the Free Spirits. Send \$100. Receive your master's degree in business administration. No coursework required. Send check to the University of Gullibility.
<ul style="list-style-type: none"> Attend a program; receive a certificate 	II	<ul style="list-style-type: none"> Attend a three-day workshop on a new medical procedure. No testing required. Enroll in an online cartoonist program. Complete the eight modules and receive your "cartoonist's certification." Anyone can succeed! Just buy all eight modules and let us know when you have finished them.
<ul style="list-style-type: none"> Attend a program and pass the written test^a 	III	<ul style="list-style-type: none"> Complete a software technician course to become certified in a certain program or operating system. Test has 100 multiple-choice items. Take a sales course on a specific pharmaceutical product. You must pass the written test.
<ul style="list-style-type: none"> Attend a program and pass both written and practical tests 	IV	<ul style="list-style-type: none"> Complete a software technician course to become certified in a certain program or operating system. Certification requires success on written, practical application, and problem-solving/troubleshooting tests. Take a sales course on a specific pharmaceutical product. You must pass a written test on the product. You must also demonstrate making a presentation of the product to specialist physicians and responding to their questions (simulation role plays).
<ul style="list-style-type: none"> Attend a program, pass both written and practical tests, and formally demonstrate on-job performance over a specified time period (or submit valid evidence of real-world performance) to a defined standard 	V	<ul style="list-style-type: none"> Complete a financial management program for certified financial managers or advisors with oversight from a professional society that includes qualified and experienced inspectors. Complete an electronics technician program with various grade levels, delivered and/or administered by a recognized institution with field examiners.

a. This type of certification is a "tricky" one. The testing portion implies performance capability. The caution here is that written tests generally require declarative knowledge. The real world requires procedural knowledge and capability. The validity of explaining how to do something or selecting the right multiple-choice option as a representation of ability to perform can be suspect. Watch out here.