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This chapter provides information that addresses the following job performance requirements of NFPA 1041, *Standard for Fire Service Instructor Professional Qualifications*, 2019 Edition.

4.3.2  
4.4.4  
4.4.2  
4.4.5  
4.4.3
Learning Objectives

1. Describe presentation techniques that most effectively communicate information to students. [4.3.2, 4.4.3]
2. Describe the four-step method of instruction. [4.4.3]
3. Discuss instructional delivery methods. [4.4.3, 4.4.5]
4. Describe the use of structured exercises. [4.4.3, 4.4.5]
5. Describe competency-based learning in the fire and emergency services. [4.4.3, 4.4.4]
6. Identify teaching strategies that encourage active learning. [4.4.2, 4.4.3, 4.4.5]
7. Skill Sheet 6-1. Give a prepared classroom [cognitive] lesson. [4.4.3, 4.4.4, 4.4.5]
8. Skill Sheet 6-2. Give a prepared practical [psychomotor] lesson. [4.4.3, 4.4.4, 4.4.5]
Classroom instruction is a complicated and multifaceted skill. This chapter outlines significant resources and skills required in classroom teaching. For example, classroom instruction requires that an instructor practice public speaking and teaching to become confident in the skill. After building this confidence, instructors can focus on turning public speaking into effective lecturing and engaging students in active learning. The purpose of this chapter is to introduce various aspects of classroom instruction:

- Presentation techniques
- Four-step method of instruction
- Instructional methods
- Structured exercises
- Competency-based learning in the fire and emergency services
- Teaching strategies

**Presentation Techniques**

Presentation is the art of clearly and concisely explaining information in ways that an anticipated audience can understand. It requires both an understanding of interpersonal communication and the ability to apply that understanding to public speaking. For instructors, public speaking usually occurs in a classroom setting with an audience of students (Figure 6.1). Presentation techniques can also apply to presentations given to superiors, administrative bodies, collaborative agencies, or the general public.

The sections that follow will describe the characteristics of effective speakers; explain how to plan, organize, and sequence a presentation; and describe how to effectively use transitions. The instructor needs to expand on this knowledge and practice each of these methods in order to become proficient in them.

**Characteristics of Effective Speakers**

The first step toward becoming an effective public speaker is to identify the characteristics displayed by effective speakers. Characteristics that apply to the instructor in the classroom include:

- **Audience-centered** — The speaker knows the audience and adapts his or her topic, speech organization, presentation style, and personal appearance to this audience. In the classroom, this involves matching the instructor’s presentation style to the students’ learning styles.
• **Good development of ideas** — Effective speakers create interesting, appealing, and memorable ways of presenting their information. In a classroom setting, this may include:
  — Using relevant examples
  — Telling stories to which the audience can relate
  — Using effective metaphors

• **Good organization of ideas** — Effective speakers organize their material so that their audience is never lost during the presentation. Persuasive speeches include an attention grabber, necessary background information, an illustration of the problem or situation and, finally, solutions for the situation. An informative speech may be organized either topically or by level of complexity.

• **Best choice of words** — Tailor a presentation’s wording to its intended audience. Explain any industry jargon to an introductory level audience. A more experienced audience will appreciate the correct usage of technical terms.

• **Good delivery skills** — Effective speakers use the following communication techniques to enhance the words that they have chosen:
  — Keep appropriate eye contact with the audience members.
  — Speak to the entire audience, not just one section or one side of the room.
  — Use appropriate gestures to illustrate mental pictures or emphasize key points.
  — Pause periodically so students can think about what they have heard and ask questions. Do not cut a pause short just because no one is responding.
  — Refrain from adding too many personal anecdotes to presentations. A few anecdotes add interest and relevance to a class, but too many can be a distraction.

• **Good vocal characteristics** — Major elements are:
  — *Pronunciation.* Pronouncing each word correctly, stressing the right words or syllables, and pausing where appropriate.
  — *Good grammar.* Using correct tense, possession, and pronoun agreement.
  — *Vocal variety,* also known as *inflection.* Refers to changes in loudness, pitch, and rate of speech. Speakers use these changes to emphasize important points and to keep the audience’s attention.
  — *Enunciation.* Clearly emphasizing each syllable, accent, and pause. Avoid slurring or mumbling when speaking in front of a group.
  — *Projection.* Speaking loudly and clearly enough to be heard in the back of the room or auditorium.
  — *Rate of speech.* Speed at which words are spoken. Effective instructors will speak more slowly when presenting new information or emphasizing important points, or when students need to take notes. As students become more familiar with the material, instructors can speak more quickly.

• **Conversational tone** — A relaxed tone makes listeners feel at ease and ready to receive information.

• **Positive attitude** — Effective speakers display a positive attitude about the subject matter they are presenting.

• **Appropriate use of humor** — Appropriate humor can create a relaxed atmosphere and get the attention of the audience. Avoid inappropriate humor that may offend members of the audience.

• **Personal style** — Effective speakers use a personal style, capitalizing on their own unique experiences and abilities.

**Presentation Planning**

Instructors can plan for presentations so that they are prepared and at their most effective. The following suggestions should improve any presentation:
• Practice the delivery of a presentation. Attempt to put into practice the characteristics of effective public speakers.

• Make a video recording of the presentation and review it for distracting actions and speech patterns (Figure 6.2). Making a recording also enables instructors to experiment with different ways to present materials, which can increase instructional effectiveness.

• Check the presentation materials to ensure that they are complete, in order, and correct for the topic.

• Analyze the presentation to ensure that it is logical in its sequence.

• Get plenty of rest the night before a presentation.

• Relax before a training session.

• Select comfortable clothing and always dress appropriately.

• Anticipate potential problems and prepare to resolve them should they occur. Have a backup plan for unanticipated technology failures, including hard copies of the presentation.

Distracting Behaviors to Avoid

• Needless or excessive pacing around the floor
• Playing with or tapping pens, pencils, and other items
• Jingling keys or change
• Chewing gum, fingernails, matchsticks, or toothpicks
• Using electronic devices like cell phones
• Excessively getting off topic
• Focusing on a single student
• Overusing slang and verbal pauses like “um” or “okay”

Organizing the Presentation

Oral presentations generally consist of three parts: opening/introduction, body, and summary/conclusion. This format tells the listener or student the topic of the presentation, gives details about the topic, and then restates the main points.

All presentations should follow this general format. Descriptions of the three parts are:

• **Opening or introduction** — Use the opening of the presentation to get the attention of students. Introduce students to the topic and purpose of the presentation, and tell them how it relates to them or their jobs. Also present a summary or outline of the main points to help students remain focused.

• **Body** — Present the information in a logical sequence, along with supporting facts and information. Separate the body of a long presentation into smaller, more easily understood segments. Ensure that each segment conveys a single point or idea and has its own opening, body, and summary. Use transition phrases to link the segments.

• **Summary or conclusion** — Review the objective of the presentation and how it is relevant to the overall goal of the course. Emphasize the main points and introduce the next lesson or the demonstration that is associated with the presentation.
Methods of Sequencing

Experts in the fields of teaching methodology and speech communication have established ways of effectively sequencing information in a presentation. The sequence depends on the topic and the organization of the lesson plan. Generally accepted sequences for instructional delivery include:

- **Known-to-unknown** — Begin with information that students are familiar with or already know before introducing unfamiliar or unknown material. This method is effective because students base their learning experience on something they already recognize.

- **Simple-to-complex** — Begin teaching the basic knowledge or skill, then introduce more difficult or complex knowledge as the lesson progresses. Basic knowledge and skills are necessary foundations for mastering more complex knowledge and skills. For example, the instructor would teach basic rope skills before teaching rigging and hauling techniques.

- **Whole-part-whole** — Begin this sequence with an overview of the entire topic or a demonstration of the complete skill in real time. Next, divide the topic or skill into subsections or steps and describe or demonstrate each of them. Close with a summary of the entire topic or a demonstration of the complete skill.

- **Step-by-step** — Teach each individual step in the correct order and then have students practice the steps in the same order. A variation on this sequence is called progressive-part, in which steps 1 and 2 are learned before progressing to step 3. After mastering 1, 2, and 3, the student learns step 4, and so on. Finally, the student must perform all steps sequentially in a single skill.

Instructors commonly use all of these sequences to present new material because they provide a solid foundation for learning. These sequences also help instructors outline the points that are essential to understanding the topic and mastering a skill.

Educational research recommends that instructors evaluate students’ understanding during the lesson. A short list of evaluation techniques that can be integrated into a lesson plan for this purpose include:

- Gauge student insight by showing physical examples of unfamiliar objects or demonstrate unfamiliar processes.

- Measure comprehension by diagramming a complex, structured set of ideas on a chalkboard or handout, or through other visual aids (Figure 6.3).

- Use demonstrations and modeling where possible, particularly cognitive modeling in which the instructor recites steps or processes out loud while students demonstrate a skill.

- Reinforce aspects that interest students and increase student motivation by initiating discussion on the interest value or application possibilities of the new material.

In all lessons, instructors must ensure that they introduce students to the key points; explain why the information is important; emphasize these points in the related parts of the lesson; and review and summarize them at the end of the lesson. Even if instructors present only a lesson segment, they should still ensure that the segment flows logically using one of the sequential methods.

Transitions

For continuity and consistency, instructors use transitions to keep students’ attention between portions of the lesson. Transitions preview what will happen next, or relate an upcoming concept or skill to a previous one. Effective transitions can create interest among students, keep their attention, and help them to make logical connections.
between portions of the lesson. The lesson plan should indicate necessary transitions for the benefit of both experienced and inexperienced instructors. Effective transitions help instructors to:

- **Maintain interest** — Keep the audience interested in the overall class topic.
- **Pace the lesson** — Keep the information flowing steadily, without interruption.
- **Maintain consistency** — Help ensure that topics and lessons throughout a course are taught in a similar manner with recognizable transitions.
- **Establish relationships** — Show how parts of the topic are related to each other.
- **Provide previews** — Give the audience an idea of what to expect in the next portion of the material.
- **Provide summaries** — Conclude the previous idea or topic.

Knowing when to use transitions is a question of timing. Transitions can be used effectively when:

- Ending one topic and beginning another
- Ending a complete lesson within a series or course
- Starting a new lesson within a series or course
- Moving from one teaching method to another
- Providing rest breaks for students and instructors

The length of time a transition requires will vary according to its use. Announcing a rest break for the class takes only a few seconds, while summarizing a complex topic may take several minutes. Including transitions in a lesson plan helps establish the time required and prevents the lesson from continuing too long.

Speech communication professionals teach two types of transitions: verbal and nonverbal. They may be used separately or together. With practice, the instructor can learn how to use them effectively and with variety.

**Verbal Transitions**

Verbal transitions provide a summary and/or preview within a single sentence or two. Types/examples of verbal transitions include:

- **Summary statement and preview** — Example: *Now that you understand how to operate the components of the SCBA, our next step is to learn how to assemble them into a working system.*

- **Review of the lesson or course agenda** — Example: *Today we saw a demonstration and received some practical training over how to use Class A foam to extinguish a flammable liquid fire.*

- **Change of media** — Example: *In order to illustrate what we have been discussing in the slide presentation, we will now view a video clip that shows how rapidly a fire can develop in a controlled environment.*

Words or phrases that may be useful as transitions include “in addition to,” “in other words,” “as well,” “therefore,” “in summary,” and “not only” (Figure 6.4). Use of the words

![Figure 6.4 Using transitional statements during a lecture can help the instructor summarize information, review the lesson, or cue changes in media.](image)
“finally” and “in conclusion” should be avoided in oral presentations, as they give students permission to stop listening. Other ways of using specific words or phrases to make verbal transitions include:

- **Repeating key words or their synonyms** — Repetition emphasizes the importance of the word or phrase.
- **Sequencing the parts to ensure continuity** — Use ordinal numbers, such as first, second, or third, and other sequencing words like “next” to establish the relationship between parts of an idea or process.
- **Using rhetorical questions** — Rhetorical questions (ones that do not require an answer from the audience) help to establish a relationship between the information that has been provided and the information that follows.

**Nonverbal Transitions**

Nonverbal transitions also help an instructor to emphasize a point within a topic. These transitions may consist of a change of facial expression, a pause, a gesture, or physically moving from one place or position to another.

Nonverbal transitions may also be used to move from one teaching method to another. This kind of transition may disturb student concentration because it involves an obvious change. Altering the light level, turning on audiovisual equipment, or assembling a model takes time and cannot be accomplished effectively while the instructor is lecturing. To make these transitions less noticeable, the instructor may have an aide assemble equipment while the instructor lectures, or call for a break when new equipment needs to be set up for the next portion of the lesson.

**Media Transitions and Animations**

Computer-generated presentations offer a variety of options for audio and video transitions between slides. While an Instructor I rarely has to create a large number of slides for classroom use, he or she may want to tailor a few slides for a particular lesson. When adapting slides, instructors are encouraged to use the same type of transition style used in the prepared slides. This minimizes the potential for distraction. Playing with different animation styles during a slideshow may be visually appealing, but it can keep students from focusing on important content.

**Four-Step Method of Instruction**

The *four-step method of instruction*, taken as a whole, is a widely accepted structure for teaching a lesson. As the name implies, it consists of four steps: preparation, presentation, application, and evaluation (*Figure 6.5*). For instructors to be successful in completing the stated learning objectives, they must have knowledge of lesson plan terminology and definitions and be able to apply the four-step method of instruction. The sections that follow describe each step in greater detail. Skills associated with giving a prepared classroom (cognitive) lesson are shown in *Skill Sheet 6-1*. Skills associated with giving a prepared practical (psychomotor) lesson are shown in *Skill Sheet 6-2*.

**Preparation**

In the preparation step, instructors introduce the lesson and show how the material is relevant to students’ needs. An instructor can accomplish this by:

- Introducing the topic.
- Gaining the students’ attention.
- Stating the learning objectives.
- Explaining how the information or skill in the lesson is directly relevant to the students’ jobs.
- Motivating the student to learn the information.
- Stating the lesson’s key points so that students are prepared to listen for them.
**STEP 1 PREPARATION**

<table>
<thead>
<tr>
<th>Purpose</th>
<th>How to Accomplish</th>
</tr>
</thead>
<tbody>
<tr>
<td>To prepare the students to learn</td>
<td>Tested methods for preparing students to learn</td>
</tr>
</tbody>
</table>

1. Prepare the mind of students by creating:
   - Attention
   - Curiosity
   - Interest
   - Desire
2. Create a foundation for learning: Begin associating students’ experiences with the lesson’s contents.

**STEP 2 PRESENTATION**

<table>
<thead>
<tr>
<th>Purpose</th>
<th>How to Accomplish</th>
</tr>
</thead>
<tbody>
<tr>
<td>To communicate content developed to change the behavior of students</td>
<td>Tested methods of presenting knowledge and skills</td>
</tr>
</tbody>
</table>

1. Present knowledge, new skills, concepts, or procedures to students.
2. Instruct, motivate, and educate students.

**STEP 3 APPLICATION**

<table>
<thead>
<tr>
<th>Purpose</th>
<th>How to Accomplish</th>
</tr>
</thead>
<tbody>
<tr>
<td>To provide the opportunity for students to apply theory, critical thinking, critical decision-making, or psychomotor skills to practical situations</td>
<td>Creative, organized, and tested methods for presenting and practicing practical skills</td>
</tr>
</tbody>
</table>

1. Demonstrate skills-based knowledge through appropriate means.
2. Provide students with the opportunity to perform under supervision.
3. Involve students actively in the learning process.
4. Provide the opportunity to practice and master critical skills in a nonemergency learning environment.

**STEP 4 EVALUATION**

<table>
<thead>
<tr>
<th>Purpose</th>
<th>How to Accomplish</th>
</tr>
</thead>
<tbody>
<tr>
<td>To evaluate the learning process</td>
<td>Tested methods for evaluating the learning process</td>
</tr>
</tbody>
</table>

1. Evaluate student understanding.
2. Evaluate teaching effectiveness.

**Figure 6.5** The four-step method of instruction covers the important components of instructional delivery.
Each of these actions will help to create a foundation from which the instructor can make the presentation. By relating the topic to previously learned information or past student experiences, instructors can show students why the topic is important and how it will benefit them.

**Presentation**

In the presentation step, the instructor follows an orderly, sequential outline to present the lesson content. (Figure 6.6). Key points on this outline include:

- Teaching methods
- Learning activities
- Demonstrations and practices
- A list of instructional support materials needed for the lesson, such as audiovisuals, worksheets, and handouts
- Summary sections given at logical stopping points and at the end of the outline. The summary gives the instructor an opportunity to emphasize critical information throughout the lesson and provide closure at the end.

By following the presentation outline, the instructor enhances the students’ ability to achieve the desired learning objectives and outcomes.

**Application**

In the application step, the instructor provides opportunities for students to learn through a variety of activities, including exercises, discussions, work groups, skill practices, and practical training evolutions (Figure 6.7). Most learning takes place during this critically important step.

Instructors can combine the application and presentation steps so that, as students learn the lesson content, they can participate in activities that require them to think, correctly manipulate tools, or safely demonstrate skills. During an exercise, the application step is often associated with performing the operations or steps of a specific task. However, students may also be asked to:

- Give a presentation
- Lead a group discussion or brainstorming session
- Apply research methods
- Demonstrate outlining and writing techniques

**Evaluation**

In this fourth and final step, students demonstrate how much they have learned through a written, oral, or practical examination. Written and oral tests are typically used to evaluate cognitive learning, while practical tests are used to evaluate a student’s ability to perform a specific skill within safety parameters (Figure 6.8). The purpose of the evaluation step is to determine whether students have achieved the lesson objectives.
Instructional Methods

An instructor is encouraged to become comfortable with a number of different methods to give them the most flexibility to present and/or adjust the material in the most effective manner. The following sections describe various instructional methods, their benefits, and recommendations for accomplishing them.

Instructional Method Terminology

In academic environments, “pedagogy” refers to the profession and practice of teaching, while “andragogy” refers to the teaching and training of adult learners. For the purposes of this chapter, the phrase “instructional methods” refers to strategies an instructor can use to share information based on learning objectives, and to evaluate student feedback and progress during instruction.

Giving an Illustrated Lecture

In the illustrated lecture format, the instructor explains a topic with the help of audiovisual aids, such as:

- Computer-generated slide presentations, such as PowerPoint or Keynote
- Illustrations on dry-erase boards or chalkboards
- Drawings and photographs
- Recorded video

The illustrated lecture format is an effective method for providing facts, rules and regulations, clarifications, examples, and definitions. It allows one speaker to reach an audience of any size, from a single student to a full auditorium. Many students can be taught at the same time while the instructor only prepares one presentation. Another advantage is that students are familiar with this format, so they are aware of what to expect and what is expected of them.

Computer-generated slide presentations are the most widely accepted visual aid that instructors use to accompany their lectures. Although these presentations can be a valuable asset, an instructor must remember that they are merely tools to help illustrate key points or generate discussion. PowerPoints can overwhelm and distract if they last too long, contain too many words, or contain too many special effects. When giving an illustrated lecture, consider the following recommendations:

- Incorporate time for questions into your lesson plans. Pose questions to students throughout the lecture, and allow them to ask questions either during the lecture or at the end of the session.
- Be prepared to ask questions extemporaneously when it becomes clear that the students are losing interest. Direct questions to the students who are paying the least attention.
- Use effective listening skills to pay attention to student feedback.
- Avoid presenting too much information at once. Students need time to process new material, especially if they are also taking notes.
- Provide supplemental information using handouts and reference lists.
- Break lectures into smaller segments of about 12-18 minutes. Intersperse these lecture segments with discussion groups or skill practice time.
- Provide a note-taking guide so students can take notes on the verbal portion of the lecture without having to also write down information from the slides.
- At the end of each segment, have students transition into pairs or small groups to compare notes, ask each other questions, and discuss the lecture material.
- Give students 3 minutes at the end of the class to write down everything they remember from the lesson.
- Provide a clear preview of the information that will be contained in the lecture.
• Include only essential and relevant information in the lecture.
• Review frequently, after each lecture segment and at the end of the lesson, to ensure that the stated objectives or learning outcomes are achieved.

Student Engagement in the Learning Process
Students are increasingly distracted with evolving technology. In addition, more students are entering the fire service without applicable skills, such as how to use hand or power tools. In order to keep students interested and participating actively in the course, instructors must understand these challenges and find ways to accommodate them.

Providing Demonstration
Demonstrations are an effective way to teach manipulative skills, physical principles, safe techniques, and mechanical functions. In the cognitive domain, demonstrations are used to illustrate theoretical or scientific concepts that students are not expected to perform. In the psychomotor domain, they are used to model a task or skill that students must learn to perform. This is the most common use of demonstrations for training in the fire and emergency services. Table 6.1 provides some general guidelines for demonstrating skills.

Emphasize Safety
Because of the hazardous nature of work in the fire and emergency services, instructors must emphasize the importance of safety while demonstrating every step of a skill or task. Many students want to be able to perform a skill quickly when they first learn it, but skill and speed come only with practice. Trying to perform a skill without having carefully learned the steps or developed coordination can be a safety hazard. Instructors should always stress the importance of safety when demonstrating a procedure, during practice time, and in final student evaluations. Students can be frustrated by the disparity between watching an instructor perform a skill with apparently effortless fluency and learning to perform it themselves at a much slower pace. Consider teaching them the phrase: “Slow is smooth, smooth is fast.”

The instructor safely demonstrates a task while explaining how and why it is performed (Figure 6.9). Students absorb this information through sight and hearing. Whole-part-whole is a helpful sequence for demonstrating psychomotor skills. It consists of three steps:

Step 1: Perform the skill at normal speed so students can see an overview of the skill.
Step 2: Perform the skill at a slower speed, emphasizing each part individually, so that students can see the details of the skill.
Step 3: Perform the skill a third time, at normal speed, with explanation during performance.

When students practice the skill, they use psychomotor skills and add the sense of touch to their learning experiences. The following advantages easily outweigh any disadvantages to using demonstrations in both the cognitive and psychomotor domains:

• Students can receive immediate feedback.
• Instructors can readily observe behavioral changes.
• Students have a high level of interest when participating.
• Instructors can easily determine whether students have achieved the learning objectives.
### Table 6.1
Skills Demonstration

<table>
<thead>
<tr>
<th>Preparing for a Demonstration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Know clearly what is to be demonstrated and its learning objective.</td>
</tr>
<tr>
<td>Be proficient in every step of the demonstration by practicing in advance with all instructors who will be involved.</td>
</tr>
<tr>
<td>Acquire all equipment and accessories, ensure that they work, and arrange them for use.</td>
</tr>
<tr>
<td>Arrange the room or demonstration area so that all students can see and hear the demonstration.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Demonstrating the Skill</th>
</tr>
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<tbody>
<tr>
<td>Begin the demonstration by linking new information with the students’ current knowledge.</td>
</tr>
<tr>
<td>Explain what the demonstration will show the group how to do.</td>
</tr>
<tr>
<td>Explain why the skill is important.</td>
</tr>
<tr>
<td>Demonstrate the skill once at normal speed.</td>
</tr>
<tr>
<td>Repeat the demonstration step by step while explaining each step slowly.</td>
</tr>
<tr>
<td>Repeat the demonstration again while a class member or the group explains each step.</td>
</tr>
<tr>
<td>Consider using a video camera and large-screen monitor when the group is large in order to allow students to see the process up close or observe small details.</td>
</tr>
<tr>
<td>Allow students the opportunity to ask questions and clarify any misunderstandings.</td>
</tr>
<tr>
<td>Ask for a student volunteer to demonstrate the skill while explaining the steps. Give reassurance by coaching and guiding the student through the process. Offer suggestions or corrections during the demonstration.</td>
</tr>
<tr>
<td>Provide the opportunity for students to practice, and allow them to supervise and correct each other as they become skilled. Again, closely monitor student activities when students practice potentially dangerous skills for the first time.</td>
</tr>
<tr>
<td>Reassemble the group and demonstrate the skill one more time at normal speed and/or one more time slowly as the group explains the steps as a summary. Relate the skill to the learning objective and performance on the job.</td>
</tr>
</tbody>
</table>

- Learning skills correctly reduces risk when conducted in a safe environment and under careful supervision, thus giving students the confidence to perform the same skills on the job.
- Potential drawbacks of the demonstration method include the following:
  - Instructors must plan for extensive preparation and cleanup times, especially when using such items as power tools, hose, breathing apparatus, and cardiopulmonary resuscitation (CPR) manikins.
  - Careful lesson planning is important because assembly and practice can use much of the class time.
  - Large groups of students require extra equipment for practice, as well as additional instructors for supervising, coaching, and enforcing safety regulations. Instructors must closely monitor students who are practicing potentially dangerous skills for the first time.
  - Skills that must be performed or practiced outside depend on the weather. Instructors must have a contingency plan available in the event of inclement weather conditions.
Leading Class Discussions

The discussion method allows for interaction between instructors and students. The instructor talks to the overall group, and invites the group to reply. Group members talk to the instructor and to each other, either in small groups or as one large group (Figure 6.10).

Lesson plans may include directions for structured discussion sessions in either large or small groups. These directions usually provide discussion topics and can also specify the most optimal arrangements for the groups. As instructors become more experienced, discussions may result spontaneously as a response to student questions. Instructors should remember that discussions are less predictable than lectures in terms of the amount of class time they require.

During a discussion, instructors and students can:

- Exchange views and ideas
- Ask questions and receive answers
- Provide examples based on experiences
- Arrive at conclusions
- Form a consensus

For this method to be effective, students must have a basic knowledge of the subject before the discussion begins. The discussion method is not a good format for introducing new material to inexperienced students.

Discussion as Active Learning

Group discussions are an example of active learning, a form of instruction in which students participate in classroom activities and are forced to think about what they are doing. Research has demonstrated the benefits of active learning at every level of education. As a form of active learning, classroom discussion:

- **Fosters student understanding** — Group discussions give students an opportunity to reflect on the lecture material.
- **Improves student communication skills** — Small group interaction allows students to learn to listen effectively, develop their positions on topics, and logically discuss information.
- **Improves cooperation within a group** — Group discussions help to create a sense of teamwork and cooperation between students.
- **Places the responsibility for learning in the hands of the student** — Discussions increase the student’s sense of ownership of the learning process.

Whole Group Discussions

In whole group discussion, the lesson plan contains the basic information for the discussion. The instructor should determine whether or not a specific topic can generate enough interest for a whole group discussion. A whole group discussion can help students to accomplish the following learning objectives:

- Share information and knowledge.
- Apply theories and critical thinking skills.
- Express personal views and ideas.
- Collaborate and work as a team.
- Clarify attitudes, values, and beliefs.
An instructor should establish the time required for the discussion and ensure that it is available in the class period. The instructor should also develop an opener for the discussion, which may consist of a short narrative, case study, hypothetical situation, or problem. These openers and topics may be provided in prepared or adjusted lesson plans. Because discussions can be time-consuming, the instructor must ensure that the time is used efficiently and the topic is specific enough to help students stay focused.

When planning for whole group discussions, instructors should select the type best suited for the topic, time frame, and lesson objectives. The two most common categories of the whole group discussion format are as follows:

1. **Guided** — The instructor presents a topic to a group, and the members of the group discuss ideas in an orderly exchange controlled or guided by the instructor. The intent of this type of discussion is for students to gain knowledge from other group members, modify their own ideas, or develop new ones. As facilitator, the instructor’s role is to guide the discussion and meet the lesson objectives in the following ways:
   — Keep the discussion on the topic and on schedule.
   — Add pertinent details.
   — Ask thought-provoking questions.

2. **Conference** — A conference discussion is less controlled than a guided discussion. In this method, instructors are facilitators not teachers. They do not tell the group how or what to think. The intent is for the students to understand how they view a topic rather than being influenced by their instructor. The instructor’s responsibilities in this format include:
   — Providing background information on the topic.
   — Stating or restating problems, asking questions, or clarifying students’ comments.
   Other than this, the instructor should allow the students to control the discussion and should not actively participate.
   — Controlling or eliminating bickering and irrelevant discussion, reconciling differences of opinion, and uniting students.

**NOTE:** The term conference is used for both a discussion format and a type of meeting that has the same purpose, only on a larger scale.

Ahead of the class session, the instructor should develop a means of closing the discussion. The closer may include a summary of the problem and a list of the solutions developed. Students may also be asked to write their own summaries — an exercise that requires them to rephrase and restate the major points generated in the discussion.

**Small Group Discussions**

Instructors do not actively participate in small group discussions. Instead, they select a student to facilitate or lead the discussion in each group. The main advantage of this format is that students express their ideas and opinions more openly with their peers than they do when an instructor is present. Small group discussions are most effective when:

- The task is structured.
- Students are experienced in working with others.
- The learning outcome is clearly defined.
- Students have time to prepare for the discussion.

The instructor’s role in this format is to define group goals, establish a time frame for discussion, and monitor the groups to make sure students stay on task. When the discussion is finished, instructors may want to have students write summaries of their discussions or present their findings to the rest of the class. Prepared lesson plans will generally indicate when small group discussions are desirable in the lesson plan, how much time should be provided for the discussions, and what prompts or topics should be provided to the small groups.
Leading Discussions

Both large and small group discussions require that instructors demonstrate leadership to ensure that students achieve course goals. Instructors should monitor how involved students are in the discussion, who is and is not participating, and whether the discussion stays on topic. The instructor should assume, or delegate, the following roles:

- **Director** — Keep the discussion moving forward. Make sure students stay focused on the topic.
- **Gatekeeper** — Ensure that all students have an opportunity to speak, that no one dominates the discussion, and that any cultural differences are considered.
- **Timekeeper** — Remind students of the time remaining for discussion or summary.

To ensure that the students understand the intention of the discussion, the instructor should perform the following tasks:

- Open the discussion by stating the topic or problem to be solved.
- Paraphrase students’ contributions to ensure that they understand the material.
- Ask questions to make sure that students understand their own positions, as well as those of their classmates.
- Act as a resource for additional information and statistics.
- Summarize the results of the discussion.

**NOTE:** Instructors who regularly plan small group discussions should coach students in the leadership skills they will need to serve as group facilitators.

Discussion Techniques

A variety of techniques may be used to direct the outcome of a discussion. These techniques apply to both large and small group discussions and include:

- **Brainstorming** — Students try to generate as many ideas as they possibly can, operating under the principle that there are no bad ideas. The group then evaluates the ideas and decides which ones have the most merit. Brainstorming requires students to use creative thinking to propose a solution to a problem based on their knowledge and experience.
- **Nominal group process** — In this format, the discussion closely imitates an organizational decision-making process that students will encounter in their jobs. This technique is more structured than brainstorming and requires that ideas be more realistic (Figure 6.11). Steps:

  1. Begin the session by having students write a list of the pros and cons of the topic.
  2. Have students present their lists to the group, each speaking in order until all have commented.
  3. Correlate, examine, discuss, and rewrite comments presented.

![Nominal Group Process](image-url)
4. Have the group select the top five considerations.
5. The instructor summarizes the findings.

- **Agenda-based process** — The instructor provides the students with an agenda of topics or key points. Students then do research and prepare reports to give to the group. In the discussion, students may ask questions or express opinions on the reports.

### Asking Effective Questions
Instructors use questions for a variety of reasons, including to receive feedback on how instruction is progressing and to promote critical thinking. Questions may also be used to achieve the following objectives:

- Promote discussion.
- Encourage interest and curiosity.
- Motivate students to acquire knowledge on their own.
- Assess students’ level of understanding.
- Control the behavior of disruptive or nonparticipating students.
- Provide an opportunity for students to openly express their ideas and opinions.
- Stimulate interest that generates related questions.
- Review and summarize information.
- Assess whether students have achieved the lesson’s learning objectives.

Students’ responses to questions can also help instructors recognize the need to alter a lesson plan or adjust their teaching style. For example, instructors may realize that they need to incorporate techniques more appropriate to their students’ learning styles.

Some curriculum developers include prepared questions in their lesson plans, but instructors should know how to create effective questions of their own. This skill also enables the instructor to evaluate prepared questions so that the questions can be adjusted or improved, if needed. Follow these guidelines for developing and asking effective questions:

- **Plan and/or review questions in advance** — Questions should help students achieve desired course outcomes or learning objectives, and be appropriate for their location within the lesson plan.
- **Write and arrange questions in a logical order** — Start with questions that request basic information before moving on to questions that require critical thinking.
- **Phrase questions clearly** — Whenever possible, use clear, simple language so that students focus their attention on the answer, not the question. When a question is complex enough to require explanation, develop the explanation in advance.
- **Ask only one question at a time** — Avoid asking questions in succession without waiting for a response to each one.
- **Be sure that the wording of the question doesn’t make the answer obvious** — Students will recognize the intended answer and think that the question is, at best, hypothetical, and, at worst, a waste of time.
- **Allow a wait time** — When questions are directed to the entire class, wait until there is a response. It may take time before a student raises his or her hand to answer. An appropriate wait time would be 3-5 seconds.
- **After waiting, call on a student directly** — Following the wait time, address a student directly by name. Give the student time to respond and do not hurry, especially when the student is shy.
- **Never use questions to intimidate, embarrass, or humiliate students** — Intentionally intimidating, embarrassing, or humiliating a student is inappropriate and unprofessional.
- **Distribute questions evenly** — Make sure to call on as many students as possible.
- **Ask questions at a variety of levels and of a variety of types** — Instructors should use all types of questions that are appropriate to the topic and the students’ learning styles.
• **Adapt questions to students’ ability level** — Matching the questions to individual student abilities ensures that most students will be able to answer at least some of the questions.

• **Ask appropriately challenging questions** — Questions should never be so easy that no thought is required to answer them.

• **Avoid asking questions too soon** — For questions to be effective, students must have the knowledge to answer them. Questions that are intended to determine a student’s current level of knowledge or opinion can be asked early in the session.

• **Follow up on student answers** — Instructors can elicit further response by using techniques such as inviting elaboration, encouraging other class members to respond, or remaining silent. Examples:
  — Once a student has answered the question, the instructor may ask, “Could you expand on your answer?” as a way of encouraging the student to go into greater detail.
  — The instructor may also want to involve other students by asking them to add an idea, fact, or experience to the first answer.
  — While instructors may be uncomfortable with silence during a class, being deliberately silent can be an effective tool when asking questions. The instructor’s silence can motivate a student to elaborate on the initial answer.

New instructors should practice developing questions and including them in their lesson plans or outlines. When there is extra time in a session, the questions can be used to help students focus on the presentation’s key points. When time allows, questions can also be used to start group discussions.

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**Waiting After Asking a Question**

Inexperienced instructors are often uncomfortable with the silence that follows their questions, as students try to formulate their answers. To avoid this silence, instructors may quickly answer their own questions, which defeats the purpose of including questions for students in the lesson plan. Instructors should wait for students to respond, even if the wait time seems lengthy. Another tactic is to encourage students to answer by giving them a hint about the intended answer, or offering a motivating remark, such as “I know you’re all listening,” “Somebody knows,” or “Give it a shot.” Instructors can also politely redirect the question to another student if the first one takes too long to respond or gives an incomplete answer.

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**Question Types**

Different types of questions produce different kinds of answers. When considering which kind of question to ask, instructors should consider what they want to accomplish at that particular point in the lesson. Instructors can use the following types of questions to start discussions, stimulate thinking, provide feedback on how training is being received, and enable students to both assess their own learning and manage any gaps (Figure 6.12):

![Question Types Diagram](image)

**Figure 6.12** An instructor should tailor questions based on what he or she wants to accomplish during the lesson.
• **Rhetorical** — Rhetorical questions are used to stimulate thinking. They do not necessarily have one correct answer, and often do not call for a spoken response. For example, an instructor might open a safety lesson by saying: *What are the most important pieces of equipment you will use on an emergency scene to protect yourself from injury or exposure? By the end of this lesson, you will know how to answer this question.*

• **Closed** — This type of question has a limited number of possible answers. The instructor is able to anticipate and judge the accuracy of student responses. Example: *What is the definition of flashover?*

• **Open** — This type of question has many acceptable answers. The instructor has general criteria for judging the accuracy of an answer, although students’ answers may be unexpected. Example: *What information can you gain during size-up?*

• **Direct** — The instructor directs a question to a student, who must then respond. This type of question is not frequently used with adult learners because it can make students uncomfortable. However, asking direct questions can be an effective way to encourage bored or disengaged students to participate.

• **Overhead** — The instructor asks a question of the entire class, not just one student. Any member of the class is free to respond, either by calling out the answer or by raising a hand and waiting to be recognized. This technique is helpful in starting discussions or offering ideas or opinions. If no one answers, the instructor can then direct the question to an individual student. Instructors may also allow students to consult with each other in groups to produce the answer.

• **Relay** — Instead of answering a student’s question, the instructor asks the rest of the class to answer. Relay questions are a good way to open a discussion or stimulate interest, but instructors should avoid this technique if they do not know the answer. In these circumstances, it is better to say, “I don’t know.”

• **Redirected** — This type of question is useful when a student asks for an answer that the instructor believes he or she should already know. The instructor can ask the student to provide small amounts of information that, taken together, will answer the original question.

### Responding to Students’ Answers

When instructors ask questions, they should prepare for a variety of student responses (*Figure 6.13*). Instructors should learn appropriate ways to respond when students provide an answer or pose a new question as their reply. Some basic guidelines for instructors are as follows:

- **Use positive reinforcement.** If a student answers a question correctly, the instructor might say, “That is absolutely right” or “You seem to have a good understanding of this topic.”

- **When a student answer is only partially correct,** positively reinforce the correct portion, then redirect the question back to the student or ask another student to complete the answer.

- **Always provide correct answers if the students do not.** Providing correct answers benefits the entire class. Wrong answers are to be expected as part of the learning process. An appropriate response could be “That is close. Maybe I didn’t ask the question clearly. What I am asking is . . .”

Instructors are sometimes reluctant to discourage responses, so they accept all answers while tactfully trying to direct the group toward the right conclusion. But taking a wrong answer and asking why it is wrong or where it may fit appropriately in the lesson is a technique that provides students with opportunities to:

- **Think and analyze problems.**

*Figure 6.13* While posing questions to students, instructors should be prepared to respond appropriately to answers or offer questions for follow-up.
• Compare facts and ideas, and apply them to different situations.
• Critique their responses and find correct solutions.
• Explore and discover new methods of application.

**Answering Students’ Questions**

Answering students’ questions is one of the most difficult things for instructors to do. Some students may pose questions that appear to be logical, but are actually complex, illogical, or off topic. An instructor can respond to these questions in the following ways:

• Be aware that some questions can be controversial or distract the class. Instructors should only provide answers to questions when they have the knowledge, experience, or resources to do so. If this is not the case, they should defer the question in order to research the answer or to consult a more knowledgeable source, such as a senior instructor or administrator.

• Redirect the question to another student who is likely to respond correctly. This approach can also be used to generate group discussion.

• Defer questions that are beyond the scope of the lesson, or tell students that they will learn the answer later in the course.

• Always answer truthfully. Never bluff students by providing false or misleading information. Doing so can destroy an instructor’s credibility.

**Psychomotor Skill Instruction**

Much of what is done in the emergency services directly relates to performing an action. An action often involves complex thought and deliberate response to observations made in the field. It may also need to be altered or adjusted to fit the exact circumstance.

The development of psychomotor skills typically occurs in three phases. In the **cognitive phase**, the student is a beginner and is developing the basic procedure of the skill through verbal and visual stimulus. Students use trial and error to strengthen their understanding of the skill, a process that requires a great deal of effort. In this phase, the instructor has a great deal of influence and must demonstrate as much patience as possible to encourage the student and stay positive. A step-by-step skill sheet is helpful and will keep the student on track to fully meet the lesson objectives.

In the **associative phase**, students grow more comfortable performing the skill. They associate cognitive knowledge with the muscular movement needed to master the skill. In this phase, students realize and overcome initial errors, and they develop and strengthen connections between the steps of the skill. Fluidity increases, but the student still needs to think about the steps to be completed (**Figure 6.14**). In this phase, the instructor is more of an evaluator and a coach than a teacher.

In the **autonomous phase**, the student’s actions become smoother, and the performance of the actions becomes quicker. Students have moved toward the point where they no longer need to think about the action. The instructor has now become the coach and is there to help students refine...
their efforts. This phase is associated with an effortless approach to the task and the ability to adapt the task to varying environments.

Throughout the three phases of psychomotor skill instruction, the instructor should always consider the students’ emotional, mental, and physical safety. Teaching and practicing safe procedures engrain best practices that will carry on throughout the students’ training and service careers.

An instructor must use a systematic and structured approach to psychomotor skill instruction. A sequential approach includes:

- **Preparation** — The instructor is ready to teach the skill and is familiar with the skill level of the student.
- **Conceptualization** — The student is given the cognitive elements of the skill. This is where the student learns what to do in a larger context that includes possible problems, common errors, and potential risks.
- **Visualization** — The instructor demonstrates the skill in its entirety, providing a model for student performance.
- **Verbalization** — The instructor verbalizes the skill to the student, breaking down the task into subtasks in the correct order. The student should be able to verbalize the steps and assist in placing the steps in the correct order.
- **Practice** — Deliberate and conscious effort to refine the skill performance and accomplish the skill safely is critical for ultimate success and eventual mastery.
- **Feedback** — Instructors use feedback to convey whether students are meeting the instructor’s expectations, and to correct errors or observed problems. Students use feedback to indicate whether they feel successful in achieving an objective.
- **Mastery** — Both instructors and students will strive to demonstrate their ability to perform the skill routinely without error. Instructors may indicate to students which skills cannot be mastered over a single class session but should be strived for over the course of a career.
- **Autonomy** — Ultimately, the instructor wants students to be able to adapt the skill in practical situations without error.

### Teaching Psychomotor Skills

Psychomotor skill instruction follows the sequence of the adage: “I do, We do, You do.” First, instructors demonstrate the skill to their students, modeling the way they want to see it performed. Next, students perform the skill, step-by-step, with their instructor. Finally, the instructor evaluates each student as he or she performs the skill independently.

### Structured Exercises

Structured exercises include a variety of instructional methods that actively involve students in the learning process. Prepared or adjusted lesson plans may include structured exercises for instructors to lead. The following sections provide brief descriptions of structured exercises that instructors may encounter:

- Case studies
- Role playing
- Simulations
- Field and laboratory experiences

### Case Studies

A case study, sometimes referred to as a scenario, is a description of a real or hypothetical problem that an organization or an individual has dealt with and may face in the future. Typically, a case study reviews and discusses detailed accounts of past events. Students then analyze the situation and synthesize possible answers to the problem. The purpose of studying past incidents is to be prepared for similar circumstances in the future.
Case studies provide students with the opportunity to discuss ideas and solve problems. These discussions develop their ability to examine facts and analyze situations in order to reach a conclusion or determine a course of action. The instructor provides students with time to review, research, and discuss the situation. Face-to-face or electronic communication between students must also be established to encourage student interaction. Students must be willing and able to communicate and defend their suggestions to other members of the group.

**Role Playing**

In role playing, students act out the role of a character in a scenario to prepare for situations they may encounter while fulfilling their duties. Role playing can be used when training personnel for a variety of tasks or situations, such as public information officers who interact with members of the community or public safety telecommunication personnel who must receive and dispatch calls during emotionally intense incidents.

At the end of the role play the instructor debriefs participants and observers about the objective of the activity. This debriefing also gives students an opportunity to explain their feelings and actions during the role playing activity. Some role playing scenarios may be emotionally charged, and the instructor should allow time in the debriefing for students to successfully separate themselves from the role they have played. The instructor should also summarize the scenario and reinforce the importance of any positive behavior that was exhibited.

A structured activity with many advantages, role playing:

- Encourages application of knowledge and safe practice of skills.
- Permits students to practice under conditions that simulate an incident without the danger of fatal consequences.
- Improves understanding of critical features of interpersonal relations.
- Allows students to identify multiple approaches to a problem.
- Increases the development of empathy as students discuss their own perspectives and listen to their classmates’ opinions.
- Helps develop critical awareness.
- Prepares students for emotionally challenging events, such as dealing with trauma patients.

Instructors should also be aware that role playing has the following disadvantages:

- Preparation can be complicated and time-consuming. Consider using case studies as the basis for role playing scenarios, which reduces the preparation time for both.
- Role playing can take time to perform and may result in students digressing from the topic when they are bored, uninterested, or see no value in the activity. Instructors can combat this attitude by explaining the importance and relevance of all activities and how they relate to the students’ work-related duties.
- Role playing requires students to identify, at least superficially, with the characters and scenario. Some students will be more comfortable with that process than others. Remind students that role playing is the closest simulation possible, in a controlled setting, to some types of stressful encounters; and that they should not take anything personally when they are in character for the activity.

**NOTE:** When debriefing a role playing scenario, instructors should remind students that actions taken during the scenario should not be considered part of a fellow student’s personal character, but rather part of a larger training situation designed to ingrain situational behavior and skills.

**Simulations**

Training simulations also allow students to participate in scenarios that represent situations they are likely to encounter on the job. These simulations may take many forms, from practical training evolutions using demonstration devices to technology-centered activities such as computer-based training (CBT). Simulations permit students to experience a situation, make decisions, and see the results of their decisions without the negative consequences that can occur at an actual emergency. The key to all simulations is to ensure that they effectively reflect the equipment, procedures, protocols, and situations that students will encounter on duty.
Simulations may be tailored to the type and scope of the training. For example, a tabletop emergency management drill is an economical and effective simulation (Figure 6.15). Confined-space rescue training, that permits actual operations in a simulated hazardous environment, is an example of a practical training evolution. CBT permits individual students to operate apparatus pump panels, simulate command of structure fires, and even attack a computer-created structure fire. Most simulations include role playing elements, such as students taking on assigned duties and interacting with one another.

Field and Laboratory Experiences

Field and laboratory experiences provide students with demonstrations and simulations. These experiences allow students to inspect, use, test, and evaluate equipment or processes, either in actual installations or in laboratory settings. Prior to learning in a laboratory or field environment, students should learn safe and applicable procedures to ensure a safe learning environment.

In the field, students are typically given a tour of an installation. They may be permitted to observe a fire detection and suppression systems test or see the steps required to replace a component. Field experiences tend to be less controlled than laboratory settings, so students may not be able to handle components. On the other hand, they will be able to see systems functioning on larger scale than is often possible in a laboratory.

In a laboratory, students can see models of equipment, such as cutaways of apparatus engines, pumps, or sprinkler control valves (Figure 6.16). They may perform chemistry experiments to simulate fire behavior or fire spread in an enclosed space. In the controlled environment of a laboratory, the instructor explains the equipment or process, demonstrates the steps required, and observes students as they repeat the skills. Students may work independently or in groups. Instructors may also choose to give students a challenge, such as providing them with a defective SCBA regulator and asking them to repair it.

Competency-Based Learning in the Fire and Emergency Services

In the fire and emergency services, students should be competent with one set of requisite information and skills before they progress to a new one. Competency-based learning (CBL), sometimes referred to as mastery learning, requires that each student successfully master the learning objectives or outcomes of the lesson or course. In this approach, instructors are provided with the specific criteria (standards) that students must meet during testing for competency. This information is stated in the learning objectives.

Competency-based learning:

- **Focuses on competency** — Primary focus is on the successful and accurate completion of skills; also known as performance-based.
- **Meets individual needs** — Training is individualized or adjusted to meet the learner characteristics of the student.
- **Provides immediate, specific feedback** — Instructors provide feedback to the individual student when the student performs the skill.
The competency approach uses criterion-referenced teaching, learning, and assessments; and focuses attention on learning objectives. Students who have problems meeting the desired criteria on their initial efforts get additional instruction, time, and opportunities to perform to the acceptable level. The learning objectives are written to establish the criteria for competency as follows:

- Identify and clearly describe the learning outcome (behavior). Example: The student will don an SCBA.
- Define the important conditions under which the students will perform (conditions). Example: The student will don an SCBA while wearing full personal protective equipment.
- Define the criterion of acceptable performance (degree). Example: The student will don an SCBA while wearing full personal protective equipment within 45 seconds.

When the material is difficult or complex, instructors may need to schedule additional instruction time so that students can assimilate complex concepts. No student should proceed to new material until he or she has become competent in the basic requisite material.

The competency approach has advantages and disadvantages, although with proper planning, instructors can overcome the disadvantages. Some advantages of the competency approach to teaching include:

- Students are prepared to advance to more complex knowledge or skills.
- Prior knowledge is used as a building block for new skills, which can make gaining competency easier for the student.
- Students are made aware of the learning objectives from the beginning so that criteria for passing the course are never in question.
- Time is given to tailor learning to the student’s individual learner characteristics and learning style, which assists the student in gaining competency.

Disadvantages include:

- Instructors must plan for and provide extra time to ensure that all students become competent on the subject. This may interfere with lesson planning or make it difficult for an instructor to stick to a schedule.
- More effort is required on the instructor’s part to determine students’ learning pace and to match it.
- Faster students may feel that slower classmates are holding them back.
- A wide variety of training materials must be available to meet the learning needs of all students.

Teaching Strategies

As instructors learn more about educating people, they often come to the realization that people learn differently depending on the topic. With these variations in mind, instructors can use different teaching strategies to adapt to changing learning environment and challenges.

Traditional Instructor-Led Training (ILT)

Instructor-led training (ILT) is the most prevalent approach to teaching in the fire and emergency services. ILT has the advantage of being flexible, economical, and familiar to both students and instructors. Three features of instructor-led training are detailed in the following sections:
Multiple Instructors

Instructor-led learning environments traditionally have only one instructor serving in multiple roles. A variation on that training style is to split some of the responsibilities among multiple instructors. In addition to sharing the workload, multiple instructors combine their knowledge and experience so that students are better able to meet the course learning objectives or outcomes. This strategy can be an effective educational technique and a unifying force between organizations. In one variation, known as team teaching, multiple instructors teach the same topics at the same time with different groups of students. Team teaching provides a more effective use of class time and has smaller student-to-instructor ratios (Figure 6.17).

The instructor with the most knowledge or experience in a particular topic usually teaches the cognitive and demonstration portions of the lesson to all classes. That instructor then joins with other instructors in supervising the practical training evolution. Multiple-instructor or team-teaching learning environments:

- Provide an effective use of resources from multiple areas and specialties.
- Allow an instructional delivery method that works well when the topic is broad.
- Provide students with an exposure to a wide variety of teaching methods and skills training.
- Keep the attention of the group by utilizing each instructor’s different voice, pace, and personality.

To prepare for multiple-instructor presentations, consider the following suggestions:

- Make an extensive course plan that outlines each instructor’s role and time commitment.
- Maintain communication between all instructors to ensure course continuity and consistency.
- Choose instructors whose teaching styles contrast, yet balance one another.
- Decide in advance who will teach which topic.
- Review all lesson outlines together so that each instructor knows what the others are doing.
- Agree on and use the same format for all instructional technology tools.
- Designate one lead instructor per topic.
- Determine time commitments and require each instructor to adhere to them.
- Agree that all instructors will be present for the entire course, not just when it is their turn to teach.
- Meet with other instructors to review session results.

Generating and Maintaining Student Interest

Instructor-led training relies on students’ interest for the overall class session to be successful. Interested students are open and responsive and want to concentrate on what they are learning. They are also more willing to actively participate in the learning process.

Generating interest is only the first step. To help maintain interest, instructors need to show students how they have a personal connection with the lesson. The following are strategies to help maintain student interest:

- **Relate learning to student interests** — Material relevant to student experiences illustrates the overall usefulness of the information presented.
• **Offer material that pertains to students’ professional goals, duties, and tasks** — Students are more likely to be curious about information that has particular importance to their professional futures.

• **Use humor appropriately** — Use humor spontaneously and courteously.

• **Stimulate emotions** — The experiences that students bring to training sessions evoke a range of emotions. Instructors can call on these experiences to promote student interest.

• **Explain and illustrate with examples, stories, analogies, and metaphors** — Providing examples can make abstract concepts more relatable to students.

• **Use questions to stimulate interest** — With practice and experience, instructors can learn to ask appropriate, well-timed, thought-provoking questions that encourage participation and promote understanding. The instructor should be careful not to force a specific viewpoint on the class.

• **Use unpredictability and uncertainty** — Anticipating the unexpected is exciting, and students who do not know what will happen next are more likely to pay close attention. As long as students feel safe and know that no one will be hurt, this technique can be an effective way to keep students interested.

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**Words to Teach By**

Your students have entrusted you with their most valuable possession – time. Don’t you dare give them anything less than your best.

- Be Prepared. Know your material, prepare your classroom, master your audiovisuals (including the machines), and have a backup plan.
- Preview your video presentations. Use only those portions that are important to your lesson.
- Be excited about what you teach. Excitement is contagious!

*Courtesy of Rod Smith, Assistant Chief, Lane County Fire District No. 1, Veneta, Oregon.*

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**Reinforcing Learning**

Instructors reinforce learning through repetition and behavioral reinforcement. Repetition involves repeating, re-emphasizing, and reviewing key points with the students. Behavioral reinforcement encourages students’ attempts to learn by acknowledging their successes and correcting their mistakes.

Intentional repetition is an important part of organizing a presentation. For example, in a lecture, elements are introduced, explained, and then summarized. In a skills demonstration, the entire skill is demonstrated, and then repeated in smaller segments.

Through emphasis and repetition, instructors help students to recognize the importance of key points. Instructors should provide opportunities for students to apply knowledge and practice important skills in a safe learning environment.

Behavioral reinforcement is based on a psychological theory that connects a change in behavior with the consequences of that change. Behavioral reinforcement establishes rewards (positive reinforcement) for students’ successes or good behavior and negative consequences for their failures or bad behavior. In the fire and emergency services, rewards for success include promotion or commendations. In the learning environment, positive reinforcement may be as simple as an instructor’s compliment or encouragement after a student properly performs a skill or masters a theoretical concept. Educational research has demonstrated that students learn faster and make permanent behavioral changes when their successes are met with meaningful positive reinforcement.
Negative Reinforcement

While positive reinforcement praises good performance, negative reinforcement punishes poor performance. Negative reinforcement is intended to make students so afraid of failure that they stop performing poorly. In the classroom, negative consequences include failing to pass an exam or skills test. On a training ground or at a scene, unsafe behavior may result in the negative consequence of a reprimand from an instructor or officer.

Educational research suggests that negative reinforcement, including natural consequences of poor performance, is not as effective as positive reinforcement. Students may be better motivated to learn when they recognize that their success in a class or on a scene is directly tied to their own motivation and ability.

Blended or Hybrid Learning

In contrast to instructor-led training, blended or hybrid learning combines traditional (face-to-face) and online teaching methods. Ideally, the instructor or course designer has critically evaluated which parts of the course would be better suited to face-to-face interaction and which would be enhanced by independent, online learning.

Instructors who use the hybrid learning environment need to be very organized and disciplined in order to maintain a high level of student satisfaction and performance. With the reduction of a formal structure, it is easy for both the instructor and the student to become frustrated and/or confused about what is happening and what needs to happen in the course.

Student-Centered Learning

In the traditional academic-type learning environment, students spend most of their time watching and listening to the instructor. In the student-centered learning environment, the instructor shifts the focus to the students. The instructor provides students with active learning activities, such as answering questions, problem solving, and formulating questions of their own. In student-centered learning, the instructor becomes more of a facilitator than a traditional teacher. This method of instruction, more than the traditional method, leads to an increased depth of knowledge and understanding of the material.

Flipping the Classroom

In the traditional classroom model, the instructor lectures over new material in class, and the student is assigned exercises and activities to complete at home. If students have questions or difficulties with the homework, they have to wait until the next class period to ask the instructor for help. The flipped classroom reverses that traditional teaching model. Instead of students coming to class for a lecture, they read and study the new material at home. When they come to class, students have more time to ask questions, discuss the material, and engage in activities that reinforce their learning. By bringing active learning activities into the classroom, the instructor can reduce student frustration and provide a more positive learning environment.

Computer Simulation

As mentioned above, many training programs use instructional technology tools such as CBT modules and programs that allow students to work at their own pace (Figure 6.18). CBT may also be used in a more structured format to provide distance learning. CBT programs minimize the interaction between a student and an instructor. In some cases, the instructor may present an illustrated lecture remotely over the Internet or Figure 6.18 Computer-based training permits more opportunities for independent study and remote instruction.
closed-circuit television. In other cases, the instructor may only be involved in answering questions that arise as students read information on their own and complete assignments.

A comprehensive list of CBT presentation methods is beyond the scope of this manual. The AHJ should inform the instructor as to the products and instructional technology tools he or she will be using to deliver instruction. Instructors should use whatever resources are necessary to familiarize themselves with the instructional system. Psychomotor skills demonstrations and practical training evolutions will still take place in person on the training ground, with the exception of any parts of the skill that can be taught online.

What This Means to You

Computer-based training is a broad term that incorporates many specific types of virtual learning environments. The following is a list of common software packages, known as learning management systems (LMS), designed to assist in the virtual learning environment:

- Blackboard™ and Web CT™
- Moodle™
- D2L (Desire 2 Learn)™

**NOTE:** This list will change as the marketplace matures.

CBT platforms require software to function effectively, and each may have unique requirements. Instructors must make sure that students’ computers have necessary Internet access, sufficient speed, and enough internal memory, as well as:

- Internet browsers
- Computer operating systems (for example, Windows® or Macintosh®)
- Word processing programs
- Document readers, such as Adobe Acrobat Reader®
- Unique software needed for the course

When facilitating CBT, instructors sometimes take on the role of computer support specialist. Instructors may be able to answer some questions. However, if they cannot promptly resolve a student’s technical problems, instructors should contact someone else who can do so. No student should be penalized because a piece of equipment, software application, or computer does not work properly.

Security in Distance Learning

One significant concern with all types of CBT is security. Security begins when students enroll or are assigned to a course or program. Each student is assigned a unique login that provides the necessary level of access to the course website or database. This access should not include the test bank of questions and answers, other students’ grades, or archival material such as assignments or tests from previous classes. Instructors should follow the security protocols established by the AHJ when delivering CBT.

The instructor must take precautions when corresponding with students through e-mail. First, instructors should follow all e-mail policies and procedures in their organization. In the absence of these policies, instructors should use good judgment in e-mail correspondence. An instructor should always be careful when writing an e-mail message because of the possibility that the message may reach the wrong party or be shared with others without the instructor’s knowledge. Instructor and student e-mail lists must be strictly controlled to ensure that they are not distributed to unauthorized persons or groups. E-mail communications may be misdirected, forwarded, altered, or distributed to unauthorized persons or sites. Confidential information such as student test results must never be transmitted via e-mail.
Instructors should familiarize themselves with all the software used in the CBT system. Many of these tools are useful for any distance learning scenario, and instructors may wish to augment a distance learning program by using these tools. Software used in CBT programs could include:

- Wikis, blogs, and file sharing services
- Social networking systems
- Live streaming audio and video
- Chat sessions
- Teleconferencing and web conferencing
- Course management system (CMS)
- Learning management system (LMS)

Instructors using CBT should be aware of the ways that this format may interfere with their ability to effectively deliver a message. Feedback from students is minimal, and the technology presents an additional barrier between the instructor and the students. To overcome this interference, instructors may need to make the following adjustments to their instructional delivery:

- Be sure to take a thorough roll call prior to the session. This not only ensures that all registered participants are accounted for, but also helps to confirm that students are not experiencing technical difficulties that would hinder their ability to hear or see the session.
- Wait longer for students to answer questions. Whether the CBT uses a text/chat-based platform or streaming audio/video, there is a time lag when asking questions over the Internet.
- Limit movement. Live streaming video will be broadcast more clearly if there is not a great deal of motion being captured. Stay within the filming area of the camera. Arrange components to easily reach any computer controls without disrupting the presentation.
- Connect locations via interactive television (ITV). Direct questions to individual locations participating in the lesson rather than asking questions to the entire group. This ensures that each location is present and participating.
- Give clear instructions for media transitions. Students may have to switch cameras for views, visit specific websites, or access particular files during a presentation. They must be told to do so at the proper time.
- Allow time to deal with technical issues that may occur during the lesson. If a computer support specialist is not readily available, have a contact number you can call for support, if needed. This contact can be a member of your department or organization, or a representative of the software publisher or hardware manufacturer.

**Interactive Television (ITV)**

Interactive television (ITV) is used to link multiple classroom sites and permits one instructor to reach more students (Figure 6.19, p. 134). It is a popular approach to distance education. Each site is able to see, hear, and talk to the other sites.

**Self-Directed Learning**

In self-directed learning or independent learning, individual students work at their own pace to accomplish course objectives, including the completion of tasks and skills in a predetermined format and the completion of work within a defined timeframe. Students are solely responsible for achieving these objectives, which may be
determined by the instructor or chosen by the student. An instructor is not involved in the delivery of the training, although one may act as a facilitator and monitor to ensure that students complete the work correctly. As a result, the effectiveness of this distance learning method is heavily dependent on the student’s level of motivation.

In self-directed learning, the instructor and the student schedule several meetings to monitor the progress of the independent study. Instructors are available to answer questions, evaluate learning achievements, and guide the student, but the learning process is completely the student’s responsibility.

Self-directed learning often motivates students to discover information and resources beyond lesson requirements. However, instructors should be aware that not all types of training programs, particularly basic-level skill programs, are suited to this type of instruction.

**Individualized Instruction**

Another variation on instructor-led training, **individualized instruction**, has instructors adapt and/or adjust their teaching methods to address the needs of each student in the class and focus on his or her specific learner characteristics and learning styles. The instructor manages learning resources, guides students, and interacts with them but is not the sole or primary resource for learning as in the traditional instructor-led classroom. For example, students work with other students to meet certain requirements and share experiences. They also work with an instructor or mentor who ensures that they meet lesson objectives or individual goals.

Individualized instruction may also utilize some features of a self-directed learning plan and CBT. This approach may enable students who would not succeed in a typical learning environment to successfully achieve learning objectives.

Individualized instruction is based on the following:

- **A student’s needs and learner characteristics** — The method of delivery for individualized instruction is directed at an individual student, rather than a group or class. The instructor pulls from a variety of resources to better meet the learning needs of each individual student.

- **Learning objectives or competencies required by the occupation** — Individualized instruction usually occurs within the context of a course where the learning objectives are competency-based and will be evaluated.
• **Instructional strategies and media that meet the needs of the student** — Individualized instruction is flexible in terms of the time students may take to learn the objectives and reach goals.

During individualized instruction, the instructor meets frequently with a student to evaluate progress, prescribe new learning objectives or different learning methods, and provide encouragement.

Many organizations use individualized instruction techniques in their training programs, including:

• **Learning activity packets** — Instructors prepare packets with sequenced activities and reading assignments for student use. This method is the most familiar to students and instructors.

• **Tutorial instruction** — The student receives one-on-one instructional help from the instructor or from another student, whether in the same or a slightly advanced class.

• **Programmed learning** — A systematic process of introducing information in small, sequential steps followed by questions that reinforce learning. This method may use a printed workbook or some kind of technology, such as a CBT system.

**Chapter Review**

Answer the following questions to review the information provided in this chapter.

1. What are some common presentation techniques that most effectively communicate information to students?
2. What are the four steps of the four-step method of instruction?
3. What are examples of instructional delivery methods?
4. What are examples of structured exercises?
5. What is competency-based learning?
6. What are examples of teaching strategies that encourage active learning?

**Discussion Questions**

The following questions are intended to generate discussion, expand your understanding of the chapter text, and allow you to think critically about what you have learned. Answers to these questions may vary.

1. What types of presentation techniques do adults prefer?
2. What are the purposes of the four steps of the four-step method of instruction?
3. What are your preferred instructional delivery methods?
4. Which structured exercises have provided you with better understanding of a topic?
5. Why is competency-based learning used in the fire and emergency services?
6. What teaching strategy have you experienced that helped you learn the topic at hand?

**Key Terms**

- **Agenda-Based Process** — Classroom discussion format in which an agenda of topics or key points is provided to students for them to research, report on, and discuss as a group.

- **Associative Phase** — Stage of motor learning in which the learner develops and strengthens the connections between steps in a skill, increasing fluidity of the overall skill through practice and performance.

- **Autonomous Phase** — Final stage of motor learning in which the learner has demonstrated a mostly automatic progression through the steps of a skill, without having to rely on heavy cognitive application.

- **Blog** — Abbreviation for web log; refers to a list of journal entries or articles posted by a single author or group of authors. Includes comment sections where readers can engage in conversation about entries.
Case Study — Description of a real or hypothetical problem that an organization or an individual has dealt with and may face in the future.

Cognitive Phase — Primary stage of motor learning in which the learner acquires the general understanding of the skill to be performed.

Competency-Based Learning (CBL) — Training that emphasizes knowledge and skills that are required on the job. Course objectives involve specific, criteria-based competence in performing tasks or understanding concepts that learners will use in their daily work. Also known as Criterion-Referenced and Performance-Based Learning.

Computer-Based Training (CBT) — A variety of self-study in which the student completes work on a computer with minimal communication with an instructor. Also known as E-learning, Blended E-learning, or Online Instruction.

Distance Learning — Generic term for instruction that occurs when the student is remote from the instructor, and when a medium such as the Internet, Interactive Television, or mail service is used to maintain communication between the two and to submit assignments.

File Sharing — Practice of making files or documents on one computer or server available to the general public, or to a selected group of individuals who are given access to the files. Allows users at remote locations to have access to the same materials without the need to put those materials on CD-ROM, memory drives, or other media.

Four-Step Method of Instruction — Teaching method based upon four steps: preparation, presentation, application, and evaluation. May be preceded by a pretest.

Individualized Instruction — Adapting teaching methods to suit individual students’ specific learning styles, so that students will be better able to achieve lesson objectives.

Learning Management System (LMS) — Software application used for the administration and delivery of educational curricula, training resources, and evaluative tools.

Mastery Learning — Element of criterion-referenced or competency-based learning; outcomes of learning are expressed in minimum levels of performance for each competency.

Nominal Group Process — Classroom discussion format that requires students to follow a decision-making process similar to the processes that they will encounter in their professional duties.

Self-Directed Learning — Method of instruction in which individual students work at their own pace to accomplish course objectives. Course objectives may be determined by the instructor or chosen by the student, but course content is always determined by the instructor. Also known as Independent Learning.

Social Networking — Websites that allow users to be part of a virtual community. Users can communicate through private messages or real-time chat, and share photos, video, and audio.

Teleconferencing — Telephone service that allows multiple individuals at remote locations to have an audio-only meeting.

Web Conferencing — Meeting service that combines teleconferencing with an Internet-based sharing service, enabling users to communicate in real time while viewing and interacting with a computer-based presentation.

Wiki — Website that allows users to update, edit, or comment on the original content using their own Internet browser; allows for the rapid creation and deployment of websites and collaborative work on documents.
Task Steps

NOTE to Instructor I candidate: For this skill you will be evaluated on the following:

a. Voice is clear, appropriately pitched, and well controlled when communicating.
b. Speech is reasonably free of language errors.
c. Style is reasonably free of distracting behaviors or mannerisms.

Step 1: Begin the preparation step in the four-step method of instruction.

a. Instructor I candidate introduces him- or herself to class participants.
b. Address location of amenities (restrooms, water fountains, etc.) and address any safety issues (i.e., the location of fire exits and other places of safety).
c. Introduce lesson objectives.
d. Introduce subject matter.
e. Explain why classroom material is important to class participants.
f. Explain how material(s) will be used (Figure 6.20).
g. Establish rapport with class participants.

Step 2: Begin the presentation step of the four-step method of instruction.

a. Use audiovisual equipment, as defined in the lesson plan, to aid in meeting learning objectives.
b. Deliver the lesson outline (Figure 6.21).
c. If applicable, transition smoothly within and between different types of instruction (audiovisual, demonstration, discussion, etc.).
d. Guide students toward meeting lesson objectives.
e. Adjust teaching methods/equipment/materials to differences in class participants' learner characteristics, abilities, cultures, and behavior.
f. If applicable, appropriately address disruptive behaviors.
g. If applicable, ensure class continuity is maintained.
h. Summarize the key points or objectives of the presentation.

Step 3: Begin the application step of the four-step method of instruction.

a. Ensure that class participants are given the opportunity to apply concepts through discussions, exercises, or demonstrations, individually or as groups.
b. Provide basic coaching and motivational techniques throughout instruction (Figure 6.22).
c. Correct disruptive behaviors.

Step 4: Evaluation/Closure step of the four-step method of instruction.

a. Ensure students have learned the main idea of the lesson.
b. The closure should be drawn from the students by asking them questions, asking them to summarize steps, to do another example, to apply information in a new situation or draw conclusions, take a written, oral, or practical examination to determine whether students have achieved the lesson objectives.
c. Optional: Briefly state what the topic of the next lesson will be.
Task Steps

NOTE to Instructor 1 candidate: For this skill you will be evaluated on the following:

a. Voice is clear, appropriately pitched, and well controlled when communicating.
b. Speech is reasonably free of language errors.
c. Style is reasonably free of distracting behaviors or mannerisms.

Step 1: Begin the preparation step in the four-step method of instruction.

a. Instructor 1 candidate introduces him- or herself to class participants.
b. Address location of amenities (restrooms, water fountains, etc.) and address any safety issues (i.e., the location of fire exits and other places of safety).
c. Introduce lesson objectives.
d. Introduce the subject matter.
e. Explain why the skill is important, how it relates to other skills, how many people are required to perform it, and when it should be performed (Figure 6.23).
f. Establish rapport with class participants.

Step 2: Begin the presentation step of the four-step method of instruction.

a. Use audiovisual equipment, as necessary, to aid in meeting learning objectives.
b. Present new concepts according to prepared lesson plan.
c. If applicable, transition smoothly within and between different types of instruction (audiovisual, demonstration, discussion, etc.).
d. Demonstrate skill in real time.
e. Demonstrate skill slowly, describing each step (Figure 6.24).
f. Adjust teaching methods/equipment/materials to differences in class participants’ learner characteristics, abilities, cultures, and behavior.
g. If applicable, appropriately address disruptive behaviors.
h. If applicable, ensure class continuity is maintained.

Step 3: Begin the application step of the four-step method of instruction.

a. Provide students an opportunity to perform under supervision.
b. Coach students. Check and correct any errors.
c. Correct disruptive behaviors.

Step 4: Evaluation/Closure step of the four-step method of instruction.

a. Ensure students have learned the main idea of the lesson.
b. The closure should be drawn from the students by asking them questions, asking them to summarize steps, to do another example, to apply information in a new situation or draw conclusions, take a written, oral, or practical examination to determine whether students have achieved the lesson objectives.
c. Optional: Briefly state what the topic of the next lesson will be.