Educational Strategies are more than just the outline of the content to be taught. They describe the procedures you will use to instruct the students and how you plan to use the instructional materials. This unit will cover: delivery systems, selecting instructional methods, identifying student grouping, and seating arrangements.

The delivery system is the overall setting in which you plan to provide instruction. Quite often, you are told which system you will use to deliver your instruction, and will not have to make the decision. Face-to-face is a traditional delivery system. Online, telecourse, and audio conferencing all fall into the category of distance learning. Some universities now have correspondence courses and programs. These are all examples of delivery systems. In this session, and your practice exercise you will be using a traditional (also referred to as face-to-face) delivery system.

The type of instructional methods you select will depend on the level of difficulty of the learning objective (using Bloom's taxonomy), the stage of learning process and the delivery system for the educational session.

If you will recall, there are stages in the learning process. When creating your educational plan, you as the instructor should select which stage(s) you will address in your educational session based on the learning objective(s). The stage(s) you address are based on the needs of the learners, their current knowledge and the learning objective. In our example of 'when to wash hands', the learning objective is to list the situations where you must wash your hands. Since we only have 30 minutes, our session will only address the first 3 stages.

A study was conducted in the National Training Laboratories in Bethel, Maine to identify the relationship between the educational method and the learner retention rate.
The results are displayed in the form of a learning pyramid. You will note that the amount of retention depends on the instructional method selected. Those methods which are one-way or passive (such as lecture, reading, or audiovisuals) tend to have lower retention rates than the two-way or active methods (such as demonstration, discussion, practice, or teaching others.) The instructor’s philosophy, and that used in this class, is to provide a variety of methods of instruction with an emphasis on retention of information by having students demonstrate, practice, and conduct a sample teaching activity (this unit’s Assignment #7).

People approach learning and receive the information in a variety of modes, or learning styles. Simple reading results in a 10% retention of information while a combination of listening, observing, discussing and performing results in 90% retention. It is therefore important to combine the modes with active learning such as discussion or teaching others to enhance retention of information.

The most common method is lecture or presentation. Lectures are facilitated by an instructor or presenter and may occur in a variety of settings. They can be performed live, or taped and played back at later sessions. Examples include presentations for committees or work groups, and straight lectures at a symposium, forum or part of a panel. Presenters may choose to use audio visual aids within the lecture, or structure it to allow for guided note taking. Lectures without interaction are a form of passive learning, and tend to yield lower retention rates of information. Therefore, to increase the level of information retention, the lecture should be combined with methods using interaction (for example discussion or demonstration).
**Train-the-Trainer**
- Used for wide-scale institutional education
- **Examples:**
  - HIV/AIDS
  - bioterrorism
  - smallpox

Train-the-trainer is a method best used in wide-scale institutional education. It is usually accompanied with leader guides, and encourages the trainer to develop innovative ways to approach the topic while teaching others. You will notice that this method assists the learner in the last stage of the learning process (adopting new learned behavior), and according to the learning pyramid, teaching others yields 90% retention of information. One example of a Train-the-Trainer program occurred in 1986, when a national educational campaign was undertaken to train healthcare workers about the new HIV epidemic. These workers then went back to their own facilities and trained others. At the Miami V.A. where Dr. Haiduven worked, they trained over 1300 employees with this method. Many grants have been established since September 11 to train health & safety professionals about bioreadiness, so that they are able to go and train others. A final example of this type of program was when the country was preparing to distribute smallpox vaccine to a cadre of volunteers in the U.S.; public health department workers went to the Centers for Disease Control and Prevention for a clinic on how to administer the smallpox vaccine. They then returned to their respective health departments and trained others on this method.

**Role-play**
- Dramatic teaching strategy
- Uses situational learning experience & technique of simulation
- Enables all learners to experience situation
- **Examples:** OSHA BPS, pharmaceutical sales

Role play requires participants to take an active role in learning. In order to simulate a real situation, the learner must analyze and evaluate the situation, then develop unique responses in their assigned role. Again, this method can be used in the fourth stage in the learning process (emotional insight), and because it encourages practice and feedback, it promotes a higher retention of information. Pharmaceutical sales representatives train by this method, where one learner serves as the sales person, another serves as a physician, and yet another as a patient. Another example of using this method was at the hospital where Dr. Haiduven worked in California. One year, to meet the OSHA-mandated Bloodborne Pathogens training program, they designed a script. There was someone to play an OSHA inspector, someone to act as a hospital administrator, another as an employee and a fourth as the ICP. They then conducted a mock OSHA inspection using this script.

**Case Studies**
- Uses a variety of learning skills
- **Examples:**
  - famous outbreaks or epidemics
  - Snow’s cholera investigation
  - Sverdlovsk anthrax accident
  - great for APPLICATION

Case studies can be used in any stage of the learning process. There are a variety of formats for case studies including: illustrative, decision making, problem solving and discussion based. They are best used for assessing learning objectives in the application and analysis levels in Bloom’s taxonomy. An illustrative case study can bring awareness to a specific topic or situation (stage 1 of the learning process). The problem solving case study can be used to help the student gain information and identify rules and principles (stages 2 and 3 of the learning process). The decision making case study can be used to help the student gain informational and emotional insight through analysis and evaluation (stages 3 and 4 of the learning process). A case study is advantageous in applying learned principles to real-life situations. For example, in medicine and nursing, clinical case studies are widely used. Participants are given some
information on a patient situation and then asked questions and/or to order additional diagnostic tests to assess the situation.

Gaming has become quite popular as an instructional method. It is a technique in which the student is presented situations involving choice and risks. The choices and the consequences may resemble real-life situations, or simply questions to be answered on a specific topic. In games, the players are reinforced for various decisions via feedback. Gaming can be used in all stages of learning, and can meet the needs of all learning objectives. However, some adults may feel that games are childish, and may not be willing to participate. Therefore, it is best used as a method of gaining attention, practice or assessment, rather than delivering new content. One example of a game developed by Dr. Haiduven is the game of “Biojeopardy”. It is based on the TV game Jeopardy, and is used to encourage retention of information through practice and feedback. Students are presented 5 categories of questions about bioterrorism. Each question is worth a specified amount of points. Students are rewarded by earning points for answering the question correctly, and are provided feedback as to why the answer was correct or incorrect.

A variety of instructional methods can be implemented in a distance learning delivery system. For example web-based learning, instant messaging, webinars, group discussion boards, computer based instruction and satellite conferencing are all distance learning delivery systems. It is a general term used for any system which allows for exchange of information from one location to another through electronic communications. Communication can be synchronous (at the same time) or asynchronous (not at the same time.)

Computer based instruction is an educational method requiring the use of computers with self-paced content in a digital format. This method can be delivered online (web-based) on a CD-ROM/DVD. It is a typical method in distance learning, but may also be used in a face-to-face setting. In computer based instruction, the computer becomes the 'instructor' providing content, practice and feedback. An example of computer aided instruction is these presentations! Some advantages to using computer aided instruction include its self-paced and non-judgmental format, receiving feedback in a confidential manner, the ability to pursue it on an individual schedule, the use of graphics to reduce boredom and the ability to standardize the content.
There are also disadvantages to computer-based instruction. This form of instruction has limited value in evaluating psychomotor skills and for those with reduced reading or comprehension levels. The CDC has numerous self-paced educational modules, including one on plague recognition, one on how to evaluate a smallpox vaccine reaction and one on recognizing smallpox. Many of you have taken HIPAA instruction online. Finally, the DeMedici system, which I described in the unit on the Joint Commission standards, is a computer-aided program for meeting the OSHA Bloodborne Pathogens Standard mandate.

Your educational session does not have to be limited to only one instructional method. For each stage of the learning process and for all the objectives, you should select an instructional strategy. For the 'when to wash hands' example, we could use an illustrative case study to bring awareness to the topic, use a short lecture to address the 'information gathering' stage and a jeopardy game to address the 'intellectual insight' learning stage. Click on the link to open/print/view the handout of additional instructional methods.

You will now need to think about question #11 on your Educational Strategies Planning Document. What stage(s) of the learning process will your session address? What instructional method(s) will you use? Remember that the session for this practice exercise is 30 minutes. Record your response in question 11 of the Educational Strategies Planning Document.

After you have identified the instructional method, you should decide whether the instructional method is to be delivered individually (one-to-one) or if you will group the learners. There are four categories of groups: 2 person groups (e.g. used in tutoring), small groups (used in interactive activities), larger groups (e.g. used in seminar classes) and very large groups (e.g. used in lectures or presentations at conferences). All too often instructors place learners in groups to 'break up' the monotony of the educational sessions. However, it is important that learners only be placed into smaller groups if it enhances the learning process.

Once you have selected the instructional method, the next step is to plan for the learning environment. The goal is to modify the environment so you eliminate distractions and facilitate learning. When teaching in a face-to-face setting, it is important to consider the size/space of the room, the cleanliness/appearance of the room, the type of writing surfaces, chairs and seating arrangement. In the 8-hour Bioreadiness course Dr. Haiduwen taught throughout the state of Florida, course participants have repeatedly requested tables in the setting for this course. When asked to complete several self-paced as well as group exercises,
it is important for this particular course, to have a writing surface for the participants.

A critical factor in deciding the room set-up is the size of the audience. Please click on the link below to see a variety of set-ups according to the size of the group. See the seating chart handout.

The seating arrangement will be dependent on the amount of interaction between the instructor and students; between students; and between students and content. It is also dependent on the type of activity and the type of grouping. This slide lists several different seating options.

This is an example of a Chevron Layout.

What type of grouping and seating arrangement will you use for the instructional method(s) you have selected? Identify the learner grouping and seating arrangement. Record your response in question 12 on the Educational Strategies Planning Document in Canvas. This concludes Part 4.