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NONRESIDENT TRAINING COURSE

Navy Instructional Theory

NAVEDTRA 14300

PREFACE

About this course:

This is a self-study course. By studying this course, you can improve your professional/military knowledge, as well as prepare for the Navywide advancement-in-rate examination. It contains subject matter about day-to-day occupational knowledge and skill requirements and includes text, tables, and illustrations to help you understand the information. An additional important feature of this course is its reference to useful information in other publications. The well-prepared Sailor will take the time to look up the additional information.

Any errata for this course can be found at https://www.advancement.cnet.navy.mil under Products.

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- *Aug 1992: Original edition released.*
- *Jun 2003: Administrative update released. Entered administrative updates and errata. Technical content was not reviewed or revised.*

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CHAPTER 1

NAVY TRAINING

INTRODUCTION

The primary purpose of the Navy training establishment is to provide the operational forces with trained personnel who can maintain a high degree of fleet readiness. Several offices coordinate with each other to plan for training and to determine the purposes of training within various commands. These offices are the Chief of Naval Operations (CNO), Fleet Commanders in Chief (FLTCINC's), System Commands (SYSCOMS), Chief of Naval Education and Training (CNET), and the Commander, Naval Reserve Forces (COMNAVRESFOR).


About one-third of all people in the Navy are involved in some kind of training at any one time. New technical developments as well as losses of trained personnel through promotion, retirement, discharge, or transfer create a constant need for training. How does the Navy perform such a large and complex training task with changing requirements and a changing

population? How do the Navy's trainers ensure needed standardization and carry out required changes? The answer is that the Navy uses a systems approach to training. One of the purposes of this manual is to acquaint you with the details of the Navy's formal training system and the educational concepts upon which it is based.

THE NAVY TRAINING SYSTEM

The purpose of any systems approach is to provide a method by which an organization can analyze and apply all the elements that make up the system (fig. 1-1). The purpose of the Navy's training system is to ensure a systematic approach for determining what to train and how best to accomplish that training. To understand the Navy's approach to training, visualize Navy training as a system with three distinct but interrelated elements: preparation to train, delivery of training, and evaluation of training.

The success of the entire system depends upon the effectiveness of the individual elements. An organization must give equal attention and emphasis to each element of the system and to how each element relates to the others. Therefore, the training of Navy trainers must address tasks in all three elements of the system.

PREPARATION TO TRAIN

Before the Navy can provide training, it must determine training requirements; develop training; and train instructors, curriculum developers, and training managers (fig. 1-2). Therefore, it uses a planning process through which it

Figure 1-1.-The Navy training system.
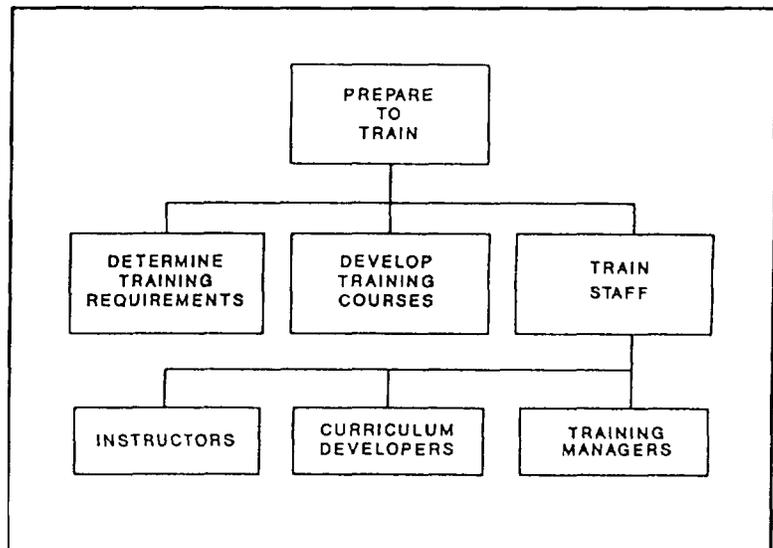
Figure 1-2.-Preparation to train.

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determines the formal courses it will offer and the number of students it will train in each course. It then sets standards for course and curriculum development and prescribes the training path(s) appropriate for instructors, curriculum developers, and training managers.

Determining Training Requirements

The Navy determines training requirements from the fleet's need for people with particular job skills. Before providing for formal courses, it checks to see if the "trained" personnel inventory has enough people with those particular skills. If the inventory lacks trained personnel, the Navy then provides formal courses in each skill area unless on-the-job training (OJT) is more cost effective.

The Navy provides most initial skill training and almost all training that awards a Navy Enlisted Classification (NEC) through formal, resident courses. It provides non-NEC skill training courses in both formal and informal settings.

Identification of training requirements is an ongoing process. As skill requirements become obsolete, the Navy changes, revises, or deletes courses; as new skill requirements are identified, it introduces new courses.

Developing Training

Once a training requirement is validated, program managers must determine if the required training is already available. If not available, they must determine if a change or revision to existing training can meet the training requirement or if new curriculum development is required. For new course development, the program manager must decide the type of training needed and direct the development of course materials. The program manager then must ensure that designated personnel receive the required training to develop, conduct, or manage the course.

During the development of training, the designated functional commander and training activity work together to establish the course of instruction and develop the course materials. To establish a course, the functional commander and the training activity must take the following actions:

- Identify the manpower, support, and equipment needed to support the training requirement
- Submit a course description via the functional commander for insertion into the *Catalog of Navy Training Courses (CANTRAC)*
- Assign a course identification number (CIN)

The CIN will be included in the Navy Integrated Training Resources and Administrative System (NITRAS). NITRAS is a Navywide automated information system designed to manage and support the Navy training effort. Managers will be able to track students and training information related to a specific course because of the course unique CIN.

The development of technical course materials also follows a systematic procedure. The goal of the systems approach is to establish uniform training. The systems approach has the following advantages:

- Prevents or minimizes overtraining and undertraining through the identification of training requirements

- Ensures uniform training for all personnel at all facilities through the use of standard guidelines for materials development

- Ensures up-to-date training through the analysis of training materials and procedures

- Assesses overall effectiveness and identifies deficiencies through the continued feedback of a training evaluation program

Training Staff

All officer and enlisted personnel occupying instructor, training manager, or curriculum developer billets/positions within the Naval Education and Training Command (NAVEDTRACOM) must complete the training path(s) appropriate to their duty assignments. Only through the intensive, recurring training of instructors, training managers, and curriculum developers can the Navy achieve uniform technical training.

DELIVERY OF TRAINING

All of the analysis, course development, and staff training conducted as part of training preparation culminates with the delivery of training (fig. 1-3). The responsibility of the
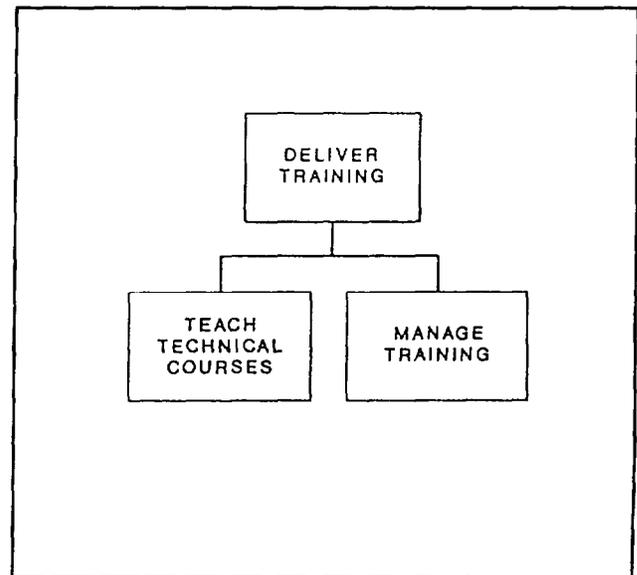
Figure 1-3.—Delivery of training.

instructors and managers of Navy training courses is to help the student to learn. No matter what the course is, their efforts are aimed at training the student to do a specific job and to apply the principles learned. An important part of this training is giving the students clear and precise directions and explaining the best way to perform the tasks associated with their job.

Training Management

Management and administration are two important elements of instruction. Establishing instructional management and administrative guidelines helps to prevent difficulties and solve problems that develop in a learning situation.

Management involves several areas of concern. The primary concern is the safety of the students and staff. Another concern is the effective and economical use of instructional material and equipment. Management is concerned with the full use of all educational and

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training facilities. Management involves the filling of billets, manning, resource needs, quality-of-life issues, and after-hours routines. As in every other component of the training system, course management is multifaceted. It consists of classroom management and course management.

Classroom management is the instructor's responsibility. An instructor must establish a receptive, cooperative working relationship with students, other instructors, and course managers. The instructor should make whatever arrangements are needed to provide favorable learning conditions for all students. The students should be able to hear and see the instructor without being distracted by other activities around them. The instructor must have a safety-conscious attitude and instill in each student safe work habits and an awareness of the hazards of equipment and machinery. The principles and procedures the instructor adopts in classroom management contribute to the success of the instruction.

All instructional operations and procedures are the instructor's administrative responsibility. To make instruction effective, instructors should fully use the time specified for lesson topics. They should report equipment in need of repair and request supplies needed to help them provide effective instruction. They should also make sure the classroom or laboratory is ready for the next class of students or for the instructor's use the following day. That includes all equipment and training materials.

Course management involves management of the instructional materials, the staff, the students, and the physical plant (i.e., building, equipment, furniture). CNET establishes the instructions, manuals, and directives that spell out the duties of the school supervisors, directors, and support personnel in each of these areas; they are amplified by the functional commanders and the local training activity. Instructors should be familiar with the organization and management responsibilities of their training activity.

EVALUATION OF TRAINING

Evaluation management measures the effectiveness of the Navy's training programs (fig. 1-4). Every member of the command, from the commanding officer to the instructor, shares
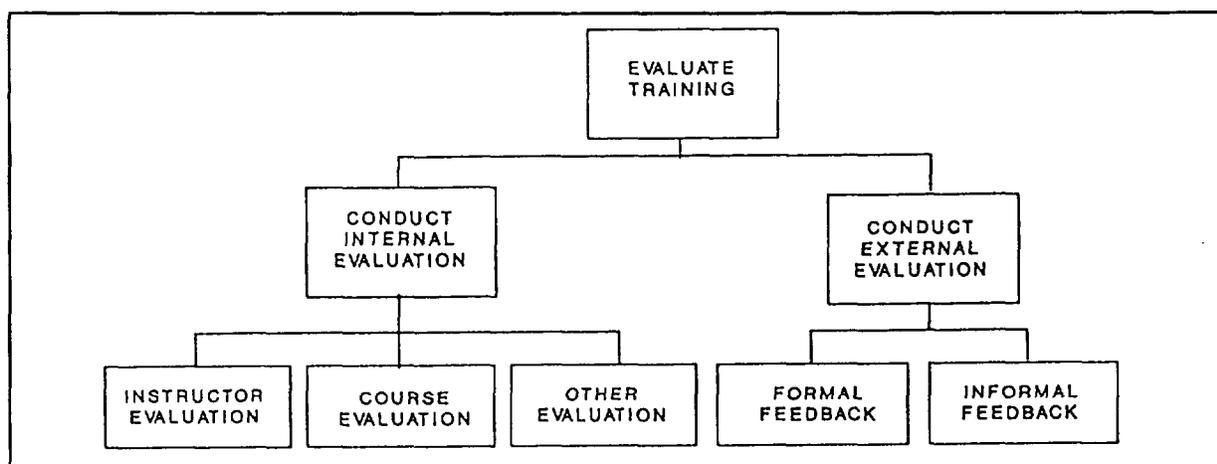
Figure 1-4.-Evaluation of training.

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responsibility for the evaluation of training. It is a joint effort that should be used as a tool to improve the training provided. Evaluation is normally divided into internal evaluation and external evaluation.

Internal evaluation involves feedback on the course of instruction on a regularly scheduled basis. This information is used to make improvements to training. Examples include the following:

- Reviews of safety, the course, and attrition or setback percentages
- Testing Programs, including test-item analysis
- Evaluation of instructors in both classroom and laboratory settings
- Critiques of course and instructors by the students

External evaluation involves the gathering of feedback by individuals or groups of individuals outside the course. Although this information is normally not gathered as frequently as the internal feedback data, it is also used to make improvements to the training.

SUMMARY

The Navy training system is extremely complex. It includes the preparation to train, delivery of training, and evaluation of training. Although it requires coordination at all levels of the Navy organization, the most essential, single link in the training chain is the instructor. The instructor is the one who must simplify the learning process for students of varied backgrounds and experiences. The instructor is the one who must present the knowledge and skills required to transform students into proficient and productive members of the operating forces.

CHAPTER 2

THE NAVY INSTRUCTOR

INTRODUCTION

Teaching has been described as both an art and a science. The science of teaching helps to explain what must be done. It is concerned with the why and how of instruction. The science of teaching helps the new instructor understand the techniques and acquire the knowledge required to do the job. That is why Navy instructor training includes subjects on the principles of learning, motivation, communication, instructional methods, objectives, testing, and the ways people learn, among other topics. That is also why instructor training includes a lot of practice teaching and teaching-performance examinations. These specific parts of the training are designed to help the beginning instructor grasp the basic techniques of instruction.

Once beginning instructors learn to use these techniques, they can start to learn the art of instruction. As with any art, some artists (instructors) will be more effective than others. Efficient instructors know and follow all the rules and techniques of teaching. However, effective instructors are often those who seize every opportunity to enhance the learning experience by being more creative in their use of the rules and techniques. Before you can do that, though, you must know the rules and when you may appropriately deviate from them.

The art of instruction really cannot be taught. You develop it through experience and learning what works. The science of instruction can be taught. Therefore, the more you know and understand about the science of teaching, the better equipped you will be to develop the art. Although almost anyone can become a competent instructor, some people will develop into truly superior instructors. The starting place, however, is the same for all of us--with the basics.

In his text, *Instructional Technique,* Davies discusses the concepts of efficiency and effectiveness (Ivor K. Davies, *Instructional Technique* [New York: McGraw-Hill Publishing Company, 1981], 22). According to Davies, efficiency is concerned with doing things right while effectiveness is doing the right things.

Most of us easily recognize efficient instructors. They do things right. They plan their lesson, prepare the learning environment, conduct proper lesson introductions, ask questions, and use instructional media material. That, however, does not ensure they are effective. Effectiveness in instruction is much more than just doing things right; it is a measure of the outcome of learning. It is what students can do, as a result of instruction, to demonstrate they have met the objectives of the course.

Ideally, your instruction will be both efficient and effective. Through study and experience, you can learn to do the right things right. This chapter presents information on the characteristics or traits instructors should have as well as information on the duties, responsibilities, and concerns common to Navy instructors.

If you were to observe efficient and effective'tive instructors, you would see that they have certain qualities in common. These qualities provide a list of traits that may serve as a set of ideals toward which you may work as an instructor. These traits also provide you with a basis for self-evaluation and self-help. Each of these traits belongs in one of three broad categories: knowledge, ability, or personality. Together, these three categories contain the professional qualities of an effective and efficient instructor (fig. 2-1).
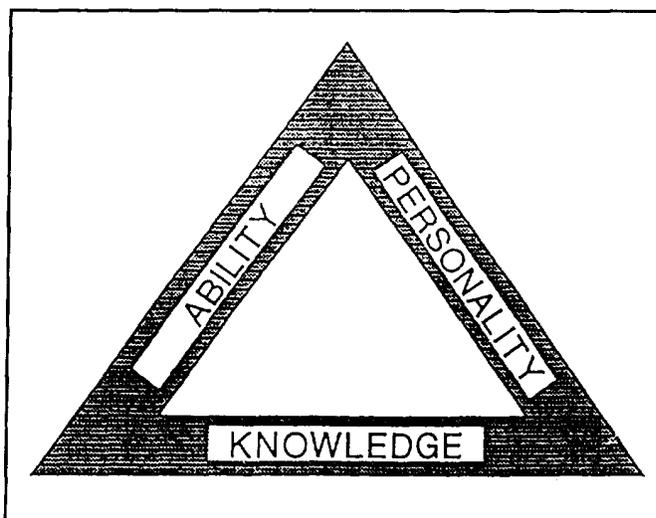

Figure 2-1.-Professional precepts.

KNOWLEDGE

You must have many types of knowledge to be both efficient and effective as an instructor. First, you must be thoroughly familiar with the subject you will be teaching. Generally, your assignment to instructor duty indicates that your area "subject matter expert" in your area of assignment. The formal training you have received in your rating coupled with your actual work experience and on-the-job training will prove invaluable to you in your instructor assignment. You may discover, however, that knowing the subject well enough to do the job yourself is quite different from knowing how to teach others to do it. This latter area will bring you your greatest challenges and rewards as an instructor.

You will need to know far more about the subject than you actually teach your students. Only through practice, study, research, and keeping up with new developments can you attain the vast store of knowledge required in your role as instructor. Avail yourself of every opportunity to observe other instructors. Not only will that benefit you in learning more about the subject matter, it will also expand your knowledge of instructional techniques.

You need to understand that you will be conducting training to meet the needs of the Navy, not individual members. As discussed in chapter 1, the primary purpose of the Navy training establishment is to provide the operational forces with trained personnel who can maintain a high degree of fleet readiness.

Training and education have much in common, but they differ in important ways. Education does not necessarily have a practical or defined goal; acquiring knowledge for its own sake is a legitimate goal of education, but not of training. Training should accomplish at least three things:

- Develop knowledge, skills, and attitudes
- Produce changes in behavior
- Attain specific objectives

The focus of training is to prepare individuals to perform the duties of the job to which they will be assigned. Your challenge is to help students learn--to lead them in gaining the knowledge, skills, and attitudes that will make them successful.

To help students learn you need to know something about their previous education and experience. Student records will provide some of the information you need. Previous instructors of students can also provide you with valuable information. However, your interaction with the student in the training environment is your greatest source of information.

Finally, you need to know basic instructional strategies and techniques. That brings us back once again to discussing the science and art of instruction. Formal instructor training and the information in this text will provide you with information on the science of teaching. The art of instruction you will gain through your experience and interaction with students, other instructors, and training administrators. You should continuously strive to expand your knowledge in both the science and art of instruction.

ABILITY

You should have two basic types of ability: leadership and instructional. Some individuals are said to possess "natural ability"; that is, they are "born instructors" or "born leaders." While certain traits may set those people apart from others, they have probably worked very hard at being "born instructors and leaders."

Research, upon which the Navy's leadership training is based, has defined a number of leadership skills, knowledge, and behaviors that distinguish superior Navy leaders from average performers.

Efficient and effective instructors have leadership skills such as planning and organizing, optimizing the use of resources, delegating authority, monitoring progress and results, disciplining, and rewarding. Their skillful use of influence helps them to persuade others, build teamwork, develop subordinates, and maintain self-control. In advising and counseling, they understand students' needs, and they both have and create in others positive and realistic expectations. In applying concepts to job situations, their knowledge and experience helps them to identify problems, sort through facts, and decide on appropriate courses of action.

As a Navy instructor, you will find that leadership by example takes on a particularly important significance. Everything you do is under scrutiny. Not only must you instruct in an efficient and effective manner, you must also serve as a role model in your military conduct, attitude, appearance, and bearing. You should exemplify the Navy's core values of integrity, professionalism and tradition.

Instructional ability, along with leadership ability, is essential to your efficiency and effectiveness as an instructor. You must not only know the principles, methods, and techniques of instruction, you must also be able to apply them effectively. Your ability as an instructor should grow with experience. However, your ability will grow only if you make a conscious effort to improve.

As stated earlier in this chapter, almost anyone can become a competent instructor. You are mistaken, however, if you assume that job experience and formal training alone will prepare you

to instruct others. You must have a great amount of knowledge--but knowledge is not enough. You must have excellent leadership ability--but leadership ability is not enough. You must care about the students you instruct--but caring is not enough. You must be dedicated to the Navy and to helping others succeed--but dedication is not enough. Your ability to be efficient as well as effective requires you to have *all* of these qualities and to work at continually improving them.

PERSONALITY

For purposes of this discussion, personality is defined as the pattern of collective character, behavioral, temperamental, emotional, and mental traits of an individual.

To be successful as an instructor, you must gain the respect of your students by displaying a professional attitude toward others. Always show a sincere interest in all of your students regardless of their race, geographical heritage, or level of intellect. Remain constantly aware that students will be influenced by your behavior and the example you set both in and out of the training environment.

As with most professions, instructors must adhere to certain rules of conduct in the performance of their duties. The following are some of the rules of conduct you should follow:

- **If you do not know an answer, admit it.** Do not bluff. At times, questions will arise that you will not be able to answer. Find the correct answer at the earliest opportunity; then provide the information to the class as soon as practical.

- **Keep your remarks professional and appropriate to the classroom.** Do not use profanity or obscenity. Use of profane or obscene language is one of the fastest ways to lose the respect of your students.

- **Be patient.** Be aware that not all people learn in the same way or at the same rate. While you may easily become frustrated with a person who is having difficulty with seemingly simple material, never allow your frustration to show. If all else fails, take a break to cool off, or consult with other instructors to find another approach to resolve the difficulty. Remember, in the majority of situations, students are sincerely trying to understand what is being taught. Your job is to find a way to help them.

- **Maintain rapport with students.** The use of sarcasm is another way to lose the respect of your students. Sarcasm, whether it is directed at one individual or the entire group, is never appropriate.

- **Treat students with respect.** All of the individuals you train should feel you have a sincere interest in their efforts to learn. Although your students will not have your knowledge or experience, you should think of them as being physically, mentally, and emotionally mature.

INSTRUCTOR RESPONSIBILITIES

While you are assigned as an instructor, you must abide by the directives and instructions within your chain of command. You also must exhibit and enforce proper military conduct and discipline at all times.

Whatever your task, approach your job with honesty, enthusiasm, and genuine dedication. As a Navy instructor, you fill one of the most critical positions in the training program. Your responsibilities include making the best of your own time and the students' time to develop those skills, knowledge, and attitudes essential to effective performance.

RESPONSIBILITY TO STUDENTS

Although your instructional and leadership role influences students in the formal training environment, be aware that many other influences also affect their performance (fig. 2-2). Students have many military duties and responsibilities that affect their lives. In addition, personal involvements with family members, friends, and other concerns affect their performance.
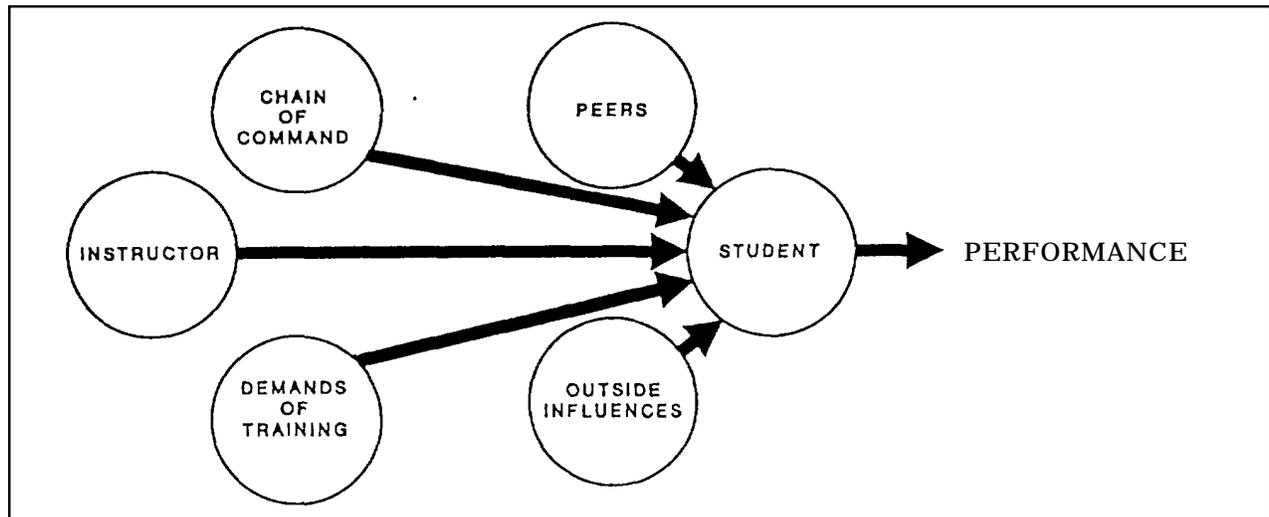
Figure 2-2.-Influences on student performance.

To the greatest extent possible, try to help students resolve conflicts resulting from these various influences. Your role as an instructor places you in a unique position to identify persons experiencing conflict. Since you interact with students on a frequent basis, notice changes in students' performance or behavior; then take steps to help them.

Your responsibility to your students is to teach effectively, set a good example for them to follow, and help them resolve conflicts that hinder their training.

RESPONSIBILITY FOR TRAINING SAFETY

Safety is an integral part of all elements of the Naval Education and Training Command (N A V E D T R A C O M) mission. NAVEDTRACOM has issued policy and procedures to eliminate or reduce the chances of mishaps or mishap-related injuries to students and instructors during training. This policy states that safety and supervisory procedures shall be maintained at a level that ensures safe training while providing the realism needed to fulfill fleet operational requirements within practical limits. These procedures are essential to an aggressive training program that prepares naval personnel to perform professionally in normal as well as high-risk activities.

Never forget that as an instructor you area role model for your students. This is true in all aspects of training, especially training safety. You must demonstrate proper safety procedures in addition to teaching them. Be aware that your behavior often has greater impact on students than do your words. You have no greater responsibility as an instructor than that related to the safety of the personnel you train.

RESPONSIBILITY FOR SECURITY

Many Navy courses contain materials that are classified for security purposes. In teaching classified information, you must be aware of several requirements:

- Never discuss any classified material not in the approved curriculum. Remember to disclose classified information only to properly cleared personnel with a need to know the information.

- Never present or discuss information that carries a higher security classification than that of the approved curriculum.

- Do not incorporate into your course materials any information that carries a higher security classification than that of the approved curriculum. That includes information incorporated into your lesson plan through personalization, student handouts, training materials, and test items.

- Make sure you can account for classified training materials or references used in the training environment at all times.

- Immediately report any situation you suspect may constitute a security violation.

Security of classified materials demands constant attention by everyone involved. As with safety, your behavior has a great impact upon your students. Never say or do anything that will downplay the importance of the security of classified materials.

RESPONSIBILITY FOR CURRICULUM

Since a relatively small number of instructors have curriculum development duties, your assignment to such duties is unlikely. However, you may become involved in curriculum revision and will almost certainly be involved with curriculum maintenance. Therefore, you need to understand the following terms and definitions associated with the maintenance of curriculum. The source of this information is the *Navy School Management Manual,* NAVEDTRA 135, and Military Standard 1379D.

- **Curriculum.** All training conducted within a school, outlined into specific topics, along with detailed training objectives.

- **Surveillance.** A process that provides ongoing evaluation of training or training materials to ensure continued effectiveness and currency of content to meet the training requirements.

- **Interim Change.** A minor change to correct editorial and typographical errors, teachability, safety, or urgent type commander-issued subjects.

- **Change.** A modification to training materials that DOES NOT affect course objectives, increase course length, or require additional resources.

- **Technical Change.** Any change to tactical (i.e., shipboard) or training-unique equipment or documentation originating in the Training Support Agency's (normally a SYSCOM) parent material agency that affects curriculum. A technical change mayor may not affect individual lesson objectives, but DOES NOT affect course objectives, course length, or resources.

- **Revision.** A change to any course learning/terminal objective, an increase in course length, or any change that requires additional resources.

Curriculum maintenance is an ongoing effort to ensure the course curriculum is both current and accurate. Any deficiency noted as a result of surveillance requires a change to the curriculum or training.

FRATERNIZATION

As an instructor, you must be aware of the Navy's policy on fraternization particularly as it applies between you and your students. Fraternization is defined as personal relationships between officer and enlisted members which are unduly familiar and do not respect differences in rank and grade. Such relationships are inappropriate and against long-standing custom and tradition of the naval service. Similar relationships involving two officers or involving two enlisted members where a senior-subordinate supervisory relationship exists are also inappropriate. Inappropriate conduct of this nature is to be avoided and, when it is found to exist, commands are expected to take administrative or disciplinary action as necessary to correct it. Additionally, such inappropriate relationships subject the involved members to disciplinary action under the Uniform Code of Military Justice (UCMJ) when the actions or relationships: (1) are prejudicial to good order and discipline; or (2) bring discredit to the naval service.

As an instructor, be especially careful in your personal associations, particularly as regards student interactions. Make sure your actions and the actions of your students support the Navy's policy on fraternization and reflect the Navy's core values.

SEXUAL HARASSMENT

As a Navy instructor, make sure you maintain high standards of honesty, integrity, impartiality, and conduct in dealing with all personnel regardless of sex. Sexual harassment is unacceptable conduct that undermines the integrity of the instructor-student relationship. The Navy has a longstanding policy of **zero tolerance** of sexual harassment.

Sexual harassment is a form of discrimination involving unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature when the following occurs:

- Submission to or rejection of such conduct is made either explicitly or implicitly a term or condition of a person's job, pay, or career

- Submission to or rejection of such conduct by a person is used as a basis for career or employment decisions affecting this person

- Such conduct interferes with an individual's performance or creates an intimidating, hostile, or offensive environment

Prevention of sexual harassment is the responsibility of all personnel. As an instructor, however, you are in a particularly important position to prevent sexual harassment. Take an active role in educating your students on the seriousness of such behavior and immediately confront any conduct that may be construed as inappropriate. When confronted about inappropriate behavior, individuals often say they were "only joking" or they "didn't mean anything by it". Sexual harassment is not a joke.

A positive command/classroom climate, where behavior is professional and appropriate and where everyone up and down the chain treats his or her subordinates and peers with courtesy and respect, will do more than any other action to eliminate sexual harassment.

SUMMARY

The total Navy training program involves many elements. While all are important, the instructor is the keystone of the entire program. The success of the Navy depends to a great extent on the effectiveness of the instruction that individuals receive during training. As a Navy instructor, you play a critical role in providing our operating forces with personnel trained to maintain a high degree of fleet readiness. Your success in that role will depend upon your commitment to developing the professional qualities of an instructor, fulfilling your responsibilities for both the content and quality of the curriculum you deliver, and modeling appropriate core values and standards of conduct, particularly with respect to fraternization and sexual harassment. In so doing, you will have a firm foundation upon which to develop specific teaching skills and actively involve your students in the learning process.

CHAPTER 3

MOTIVATION

INTRODUCTION

Motivating students to learn is possibly one of the most pondered and discussed areas among people involved in the education and training of others. How to get students interested and involved in the learning process has long been one of the greatest challenges for instructors. Motivation involves the activation, direction, and persistence of a specified behavior. While students are responsible for their own learning, you can greatly enhance their desire to learn by creatively using motivational techniques. In the educational sense, motivation is the process of prompting a person to learn. The majority of your students will respond to general methods of motivation. However, to provide appropriate incentives for individual students to learn, you must learn to recognize their needs, incentives, and drives.

Generally, all behavior is motivated. The goal of instruction is to motivate students to achieve course objectives. Instructors sometime mistakenly believe that a student who is not participating in classroom activities or finishing homework assignments is not motivated. Strictly speaking, the student is not motivated to behave in the manner desired by the instructor. This chapter provides background information on the principles of motivation and offers some practical techniques for instructors to use in the motivation of their students.

MOTIVATION THEORY

Before looking at the principles of motivation, look at the motivation theory developed by Abraham H. Maslow. Simply stated, Maslow's theory proposes that individuals will seek to gratify higher order (growth) needs only when all lower order (deficiency) needs have been relatively well satisfied. Based on Maslow's theory, people are driven to satisfy unfulfilled needs in a specific order. Maslow refers to the order in which they fulfill those needs as a hierarchy of needs.

Maslow's hierarchy (fig. 3-1) contains a lower level of needs, known as deficiency needs, and a higher level, known as growth needs. Deficiency needs include physiological, safety, belongingness and love, and esteem needs. Growth needs include the self-actualization, desire for knowledge and understanding, and aesthetic needs.

The implications of this particular theory to the training environment are intriguing. As the instructor, you control what takes place in the classroom or laboratory. That means you play an important role in gratifying the needs of your students. Students are more likely to try to satisfy their desire to know and understand once their physical and psychological needs have been met. They need to feel safe, relaxed, and comfortable (both physically and psychologically); have self-esteem; and have a sense of belonging.

Applying Maslow's theory in the classroom may be limited by your knowledge of the students or your ability to meet their needs. Chapter 2 discussed various influences that affect students in the training environment. You need to be aware of those influences and know the resources available to help students involved in conflicts that interfere with their training. That will greatly increase your effectiveness in motivating students to learn.
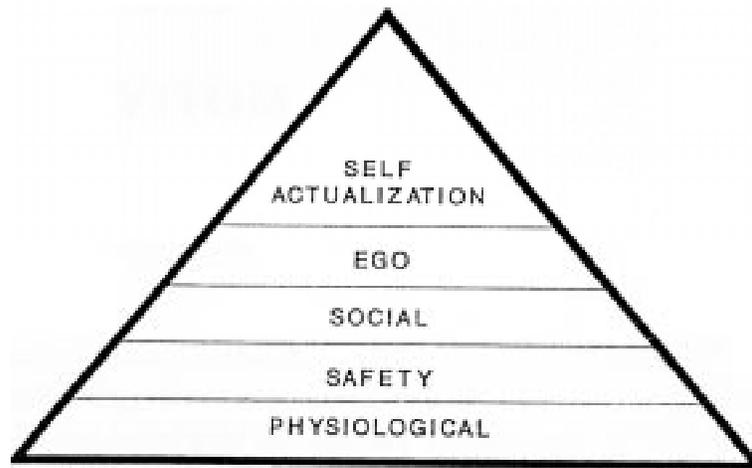

Figure 3-1.—Maslow's hierarchy.

MOTIVATION PRINCIPLES

The key principles to applying motivation theory in a training situation are summarized below:

Needs and Drives. When students have a need or drive, they lack something. A need is usually defined as a deficit or lack that causes a desire for satisfaction. The need to belong, for instance, can motivate a student to seek group acceptance. That need, or drive, can cause the student to behave in a manner that eventually reduces the need and results in satisfaction.

Interest. Interest refers to a person's view of an activity as worthwhile or enjoyable for its own sake. An instructor who captures students' interest draws on their internal motivation. As an instructor, learn to control student interest throughout the lesson; the learning process breaks down once a student loses interest.

To generate interest, state the purpose of the lesson at its beginning. Emphasize why students need to learn the material and how they will benefit from the information. When students understand the need to learn, they are more likely to give their full attention to your instruction.

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Values. The students' values, attitudes, and previous experiences affect the nature and amount of what they learn. The motivation you use must fit a student's value system. Students have more interest in a subject that deals with goals they see as important in their lives. For example, a lesson on the flag or the Code of Conduct would probably motivate a student who values patriotism.

Attitudes. Attitudes consist of feelings for or against people, objects, or ideas. Showing a positive attitude about the subject you present can cause the student to want to learn. Students have more desire to learn when instructors show an interest in what they teach.

Incentives. Incentives or rewards can stimulate motivation. Incentives such as good grades, awards, or selection as a distinguished graduate motivate students who want to achieve.

Achievement. Achievement is a strong desire, a longing, an aim, a goal, or a desired objective. To make an effort to succeed, students must have a need to achieve at a certain level.

TECHNIQUES OF MOTIVATION

Although motivation is one of the prime tasks of instructing, it is both the student's and the instructor's responsibility. The lesson subject, the classroom atmosphere, the competence of the instructor, and the personality of the instructor and the student all affect a student's motivation. The following techniques will assist you in developing motivational strategies to use when instructing.

Make the subject matter interesting. Plan motivational strategies to keep the lesson interesting. A dull presentation causes students to become bored, restless, and uninvolved. A lack of response from the students will affect the quality of your instruction. As a result, you may lose confidence and enthusiasm, which, in turn, will have a negative effect on student motivation. To promote interest, use a variety of materials while instructing.

Establish goals. The goals of instruction come directly from the learning objectives. Ensure that you present the objectives for each block of instruction so that students will understand exactly what they are expected to be able to do as a result of training.

Provide informative feedback. Students need feedback when they are trying to meet goals. You can give either oral or written feedback, but be sure you give recognition for proper student behavior and achievements. Also be sure to point out student errors and how to correct them. Recognizing good performance and pointing out areas that need improvement contribute to effective learning.

Show interest in your students. Give students detailed feedback when they respond to a question or perform some task related to instructional objectives. Feedback may make the difference between a student's feelings of success or Failure. Always comment favorably on successful performance.

Encourage participation. You should be open to student contributions and points of view. Students bring many different experiences to the learning environment. Use these experiences to stimulate interest and add variety to learning.

You can motivate students to learn in many different ways. First, take into account individual differences in ability, background, and attitudes. Then try to satisfy the physiological, safety, belongingness, and esteem needs of the students. Make the classroom environment conducive to learning. Take an interest in your students. Learn their names as fast as you can and let them feel that they belong in your classroom. Direct learning experiences toward feelings of success by encouraging achievement and a positive self concept. Give students positive, helpful feedback and help them set challenging but attainable goals. Use various techniques to motivate students and encourage self confidence and self direction at all times. Provide a learning-oriented environment. Do everything possible to create an environment that encourages your students to learn. Make it physically and psychologically safe.

## APPLYING MOTIVATION TECHNIQUES TO INSTRUCTION

The techniques of motivation have application in each part of a lesson presentation: the introduction, the presentation, and the summary.

LESSON INTRODUCTION

Use motivation at the beginning of a lesson as a means of introducing the material, stimulating interest, arousing curiosity, and developing a specific direction. Besides showing the need for learning the information, the introduction should serve as a connecting link between the present lesson and previous lessons.

Use the lesson introduction to discuss specific reasons why students need to learn the information you plan to present. To reinforce their desire to learn, show students how the information relates to their career advancement or some other need. Give the students specific examples. In many cases, you may motivate students by telling them they will need the information to understand future lessons.

For most instructional methods, the lesson introduction should provide a road map for learning. You may find effective visual aids helpful at this point. A clear introduction can contribute greatly to a lesson by removing doubts in the minds of the learners about where the lesson is going and how they are going to get there. Tell students what you will cover or leave out and why. Explain how you have organized your ideas. Students understand better and retain more when they know what to expect. The purpose of the introduction is to motivate students to learn by listening to the information you will present in the body of the lesson.
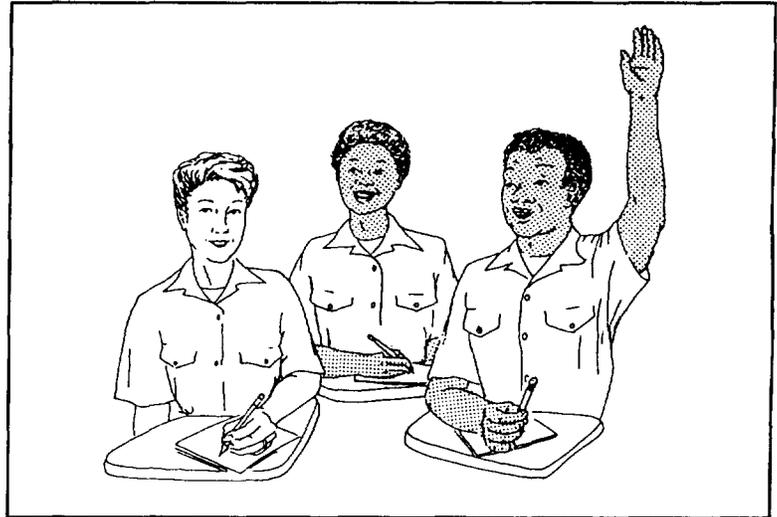
Attention-getting methods for beginning a lesson:

- Focus on the importance of the subject.

- Use startling statistics.

- Ask rhetorical questions. A rhetorical question is one you direct at the students but do not really expect them to answer. (Have you ever . . . ? Can you imagine . . . ?)

- Use quotations. A striking quotation will arouse interest, particularly one by a well--known person.

- Ask overhead questions. An overhead question is an interest-arousing question directed to the entire class.

- Tell a story. A story is an interesting way of introducing a lesson, especially when it relates to experiences students have had. While humor may be appropriate, don't tell irrelevant stories, jokes, or incidents that distract from the lesson.

All of these attention--getting devices are potentially useful during the lesson introduction. However, decide which ones to use based solely on the subject and the students. Your primary concern is to focus student attention on the subject. The introduction to a lesson, no matter what form the lesson plan takes, must accomplish certain goals:

- Develop students' interest.

- State the lesson objectives and their significance.

- Direct student thinking along desired lines.

- Outline the scope of the lesson.

- Show students the value of the subject matter.

- Explain the method or methods you will use.

- Let the students know what you expect of them.

After you have won the attention of the students, you must direct them to the subject of the lesson.

LESSON PRESENTATION

To maintain student interest, **do not** read a lesson plan verbatim. Make sure you are thoroughly familiar with the material you are presenting. Know your lesson plan as well as the information in the references from which you will teach. To meet the specific objectives of the lesson, you must know exactly what you are going to teach and how you are going to teach it. Further, you must be careful not to overteach; that is, to provide extraneous information merely because you are knowledgeable in a particular area.

Present the material in a logical sequence beginning with the known and moving to the unknown. Although slight variations and excursions off the main line of a lesson can promote interest, keep them to a minimum. During the presentation, one of the best motivators is the use of training aids.

LESSON SUMMARY

A lesson summary is used to recapture students' attention and build to a motivational climax. You may want to give short or interim summaries at various places in a lesson. Give final summaries after you have covered all of the main points of the lesson. Quickly reviewing the main points can refocus students and help them retain information.

The purpose of the summary is to instill in students a desire to retain and use what they have learned. Although you motivate students throughout the lesson, the summary is your last chance to emphasize how important the information is to them as individuals. The ultimate goal of instruction is to cause students to remain motivated beyond the instructor's influence and apply what they have learned on the job.
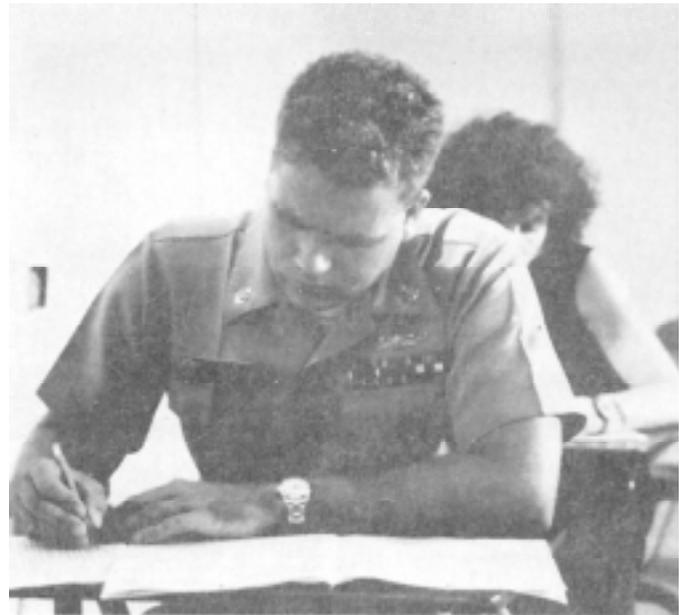
SUMMARY

You must constantly motivate your students to learn. Grasp every opportunity to motivate students. As an instructor, you must find which methods and devices work best with your students in certain situations. After instruction begins, assess each student's achievement level, learning styles, and motivational patterns to determine the readiness of each student to learn.

Remember Maslow's theory. Be sensitive to your students' needs and provide them with a proper learning environment. Those students with adequate motivation should then be ready to learn. Following Maslow's theory does not mean you pamper students into learning. Rather, it means you look upon each student as a human being with certain inherent rights and feelings.

As an instructor, be professional, intellectually honest, and aware of your influence on students. Set a good example at all times by maintaining a neat, clean, and proper personal appearance. Be courteous; use proper titles when addressing military or civilian students. Set rules early in the course and maintain them. Welcome and profit from the evaluations of the students or other instructors. Avoid arguments, control distractions, and be fair in all your dealings with students--above all be consistent.

CHAPTER 4

PRINCIPLES OF LEARNING

INTRODUCTION

Learning is a change in behavior as a result of experience. As a Navy instructor, you want that change to go beyond your influence in the classroom. You want your students to apply their learning on their jobs.

The objective of any act of learning is that it should serve us in the future. That is especially true in the technical training fields. To cause this behavior change in your students, you must understand what causes learning to occur. This chapter examines some practical, time-proven basic principles of learning and your responsibilities in using them.

WAYS OF LEARNING

All learning should be meaningful. To make learning as meaningful as possible, you need to understand how students learn. Of the five different ways of learning addressed here, no one particular way is necessarily better than the others. Your students will use some combination of these ways of learning in every class you teach. Your understanding of the ways people learn will assist you in helping your students learn and retain the information presented.

WAYS OF LEARNING

o Imitation

o Trial & Error

o Association

o Insight

o Transfer

IMITATION

A significant part of what a person learns occurs through imitation. This way of learning begins early in people's lives and lasts throughout their lifetime. In a training environment, for students to observe others (primarily the instructor) and to imitate their behavior is natural. Learning takes place even without direct reinforcement of the repeated behavior. Therefore, as the instructor, you must
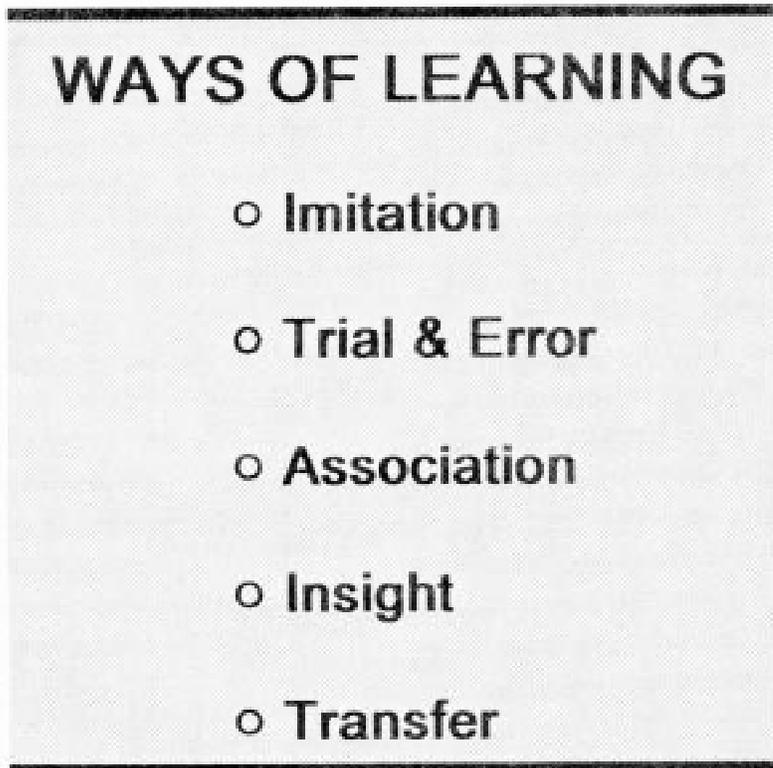
always strive to set the proper example because you are the role model. Additionally, you need to provide positive reinforcement to students for properly imitated behavior.

TRIAL AND ERROR

Sometimes referred to as discovery learning, trial and error is learning by doing. Students can achieve success sooner if you set a proper example for them to imitate. A proper example reduces the number of errors students make and thus helps to develop their self-confidence. Although the mastering of most skills requires this way of learning to some degree, it does involve some hazards. Think back to when you learned how to ride a bicycle to help you visualize some of the hazards of this way of learning. It can be dangerous to the students and the equipment. It can also become frustrating if repeated trials don't lead to some success. The Navy Instructor Training School is a good example of where this way of learning is currently used as students present lessons during performance exams. Students receive proper supervision, reinforcement of acceptable performance, and get immediate feedback on how to correct errors.

ASSOCIATION

Association is a comparison of past learning to a new learning situation. It is a mental process that serves as a reference point for students. Learners can confront new problems more easily if those new problems contain elements similar to those previously mastered. For example, to help students more easily understand electricity flowing in a circuit, you might compare it to water flowing through a pipe. Use comparisons, contrasts, and examples to reinforce your explanations. Although you will have many opportunities to use association during your lessons, remember that you will have students with different experience levels in your class. Make sure you use associations to which all students can relate.

INSIGHT

Insight is the understanding that the whole is more than the sum of the parts. Learning by insight occurs when the learner suddenly grasps the way elements of a problem situation are connected. The term describes a person's unplanned discovery of a solution to a problem-- often referred to as the "ah-ha" phenomenon. That phenomenon results from a mental reorganization of ideas and concepts rather than from simple trial and error. Some individuals gain insight more rapidly than others. Individual backgrounds affect each learner's ability to gain insight, as does the sequence in which you present basic learning experiences. To help students gain insight, you must stimulate thinking. Use appropriate questions to get their minds working. Encourage thought rather than rote memorization by using questions that require associations, comparisons, and contrasts.

TRANSFER

Transfer is the process of **applying** past learning to new but somewhat similar situations. This process is important in Navy technical training because the training environment can rarely duplicate the actual job environment. Your goal is to teach students the importance of applying

their learning on the job. If possible, provide realistic exercises by using the actual (or the same type of) equipment students will use on the job. The Navy's damage control team training is a good example of how this type of learning takes place.

LAWS OF LEARNING

Laws and principles of learning are attempts to define the fundamental conditions of the learning process. In general, we have five almost universally accepted laws of learning. Each of these laws has common sense applications based on lessons people have learned over the years. Your mastery of these applications will greatly enhance your ability to influence your students to learn and perform at a high level.

LAWS OF LEARNING
- Readiness
- Effect
- Primacy
- Exercise
- Intensity
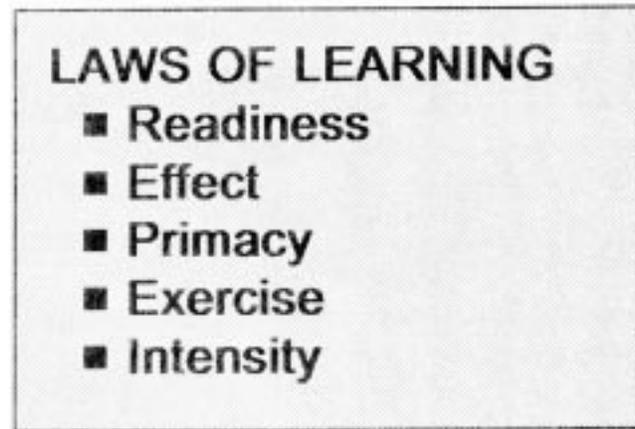
LAW OF READINESS

According to the law of readiness students learn best when they are physically, mentally, and emotionally ready to learn. Since learning is an active process, students must have adequate rest, health, and physical ability. Students who are exhausted or in ill health obviously cannot learn much. Although these areas are beyond your control, you must know how to address them in your classroom. For students to be mentally ready to learn, they must master certain knowledge and skills at one level before they can learn those required at the next higher level. For example, students who have not learned the basic application of a law have little chance of applying that law to more complex situations.

Just as students must be ready to learn, you must be ready to teach. Always prepare your lesson plans, training materials, and classroom or laboratory before you begin to teach. Your readiness is an important step in gaining the confidence and attention of your students. Remember, you only get one chance to make a first impression.

LAW OF EFFECT

An individual learns best those things which result in satisfying consequences. Since the law' of effect has a direct relationship to motivation, it has many practical applications for you in the training environment.

One of the most basic applications is in your relationship with adult students. Adults want immediate benefits from training, so begin your instruction by presenting the benefits of the lesson. Continue to remind students of these benefits throughout the training. Point out the value of the training in meeting the needs of your students: self-satisfaction, self-confidence, improved skills, and so forth. Begin each lesson with a statement of objectives to help students

establish goals, and let them know you expect them to meet those goals. Motivate students by providing positive reinforcement as they proceed from success to success. That is the basis of the law of effect.

LAW OF PRIMACY

Based on the law of primacy, students retain information they learn for the first time longer than they retain information they must relearn. Unlearning incorrect procedures (or bad habits) is always more difficult than learning the correct procedures in the beginning. Therefore, the law of primacy plays an important role in Navy training. Navy training courses allow a limited amount of time for learning—they do not include time for students to relearn improperly taught information. Make sure you teach the correct information and procedures the first time; proceed from the simple to the complex, from the known to the unknown. Clarify misunderstandings and errors before moving on. Remember, your students must be ready to learn new material.

LAW OF EXERCISE

This law is based on the old maxim that practice makes perfect. It has been proven that students learn best and retain information longer when they have meaningful practice and repetition. The key here is that the practice must be meaningful. It is clear that practice leads to improvement only when it is followed by positive feedback. That means that as an instructor, you need to follow upon every homework assignment, every lab exercise, and any other student activities you assign. Students must have supervised practice in applying new skills to reach the required level of expertise to master course objectives. That is how the transfer method of learning takes place; from the information you teach, to the students' use of it.

LAW OF INTENSITY

The law of intensity states that a vivid experience is learned better and retained longer. Make your instruction powerful enough to have a strong, positive effect on your students by getting them actively involved in the lesson. Instruction that allows students to sit passively in the classroom doesn't have much intensity. You can talk about the effects of tear gas all day. But talking will never have the same impact as putting students in a controlled environment and letting them experience tear gas without a gas mask. That is ***Intensity.***

Use the best instructional media available, including the real thing. Use examples, analogies, and personal experiences to make learning come to life. Make learning interactive by initiating and controlling your students' involvement in the learning process.

FACTORS AFFECTING LEARNING

Many factors affect learning. Everyone does not learn in exactly the same way or at the same rate. Each is subject to a variety of negative and positive influences in the overall process. You

need to be aware of as many factors that affect learning as you can. The more you know, the better chance you have of positively influencing the learning process.

MOTIVATION

Perhaps the single most important factor in a student's educational advancement is motivation. Unfortunately, it is one of the hardest to get a handle on or to channel effectively. Humans basically try to succeed and, conversely, try vigorously to avoid failure. While we need to remember that occasional failure is human, we must do everything possible to organize student efforts toward success. Simple things like word selection in the training environment can add to or detract from the learning effort.

Motivation often has as much or more impact than scholastic ability. Students bring different abilities and experience levels to the training environment. Motivation, or a lack thereof many times determines whether or not a student masters the course objectives. Many times students with the highest ASVAB scores do not make the grade while students who may have entered your course with an academic waiver do very well. Talk to any seasoned instructor and he or she can probably recall at least one special student who "made it" in spite of minimal background or less-than-average ability. Little doubt exists that motivation, either internally or externally stimulated, initiates behavior; directs it; and, when derailed, can reduce or stop it.

THE LEARNING SENSES

Sensory learning is the first that occurs for any human being. Its influence is apparent in children as we watch them grow up. Each sense, either singularly or in various combinations, provides a pathway to learning. With that in mind, an examination of sensory learning and its special considerations can provide insight into the learning process.

Sight is considered the most important sense, accounting for as much as 75 percent of our basic learning. Most early learning comes from seeing and imitating. Therefore, you would be wise to consider using appropriate visual aids in your presentations. Remember, however, to recognize and accommodate students with any visual impairment.

Figure 4-1.—Sensory learning percentages.

Hearing is the second most important sense, accounting for a large percentage of the remaining sensory learning capacity. Experts differ on specific numbers, but the significance of

sight and sound together is overwhelming. Just as with sight impairments, you must accommodate students with hearing impairments. Your speech patterns and volume are critical classroom learning factors.

The sense of touch, while important in itself, becomes a major learning factor when combined with other senses. Children do not associate the word "hot" with anything in particular until they associate the word with their sense of touch. Through experience, we become sensitive to temperature, pressure, and the overall feel of things. For instance, an experienced engineer doesn't need a temperature gauge to determine if a bearing is running hot, just as an experienced damage control investigator doesn't need one to decide that the temperature of a watertight door is above normal.

The senses of taste and smell may not seem important in Navy training. In many cases they aren't. Consider if you will, though, the importance of taste to the training of cooks and bakers. The sense of smell, which is closely associated with taste, is very strong and primitive in nature. It is part of our human warning system. For example, electricians immediately recognize the smell of burning insulation. Others become sensitive to the smell of various gases. Therefore, the sense of smell is a valuable learning tool in certain narrow applications.

Although it is not normally identified as one of the senses, the phenomenon of kinesthesia is an extension of sensory learning. Think of it as a sensory perception residing in one's muscles, joints, and tendons that gives people a special awareness of their spatial relationship with their surroundings. Kinesthesia is actually a blend of all senses with psychomotor and perceptual skills. It manifests itself in people's ability to balance or move with coordination.

Remember, students develop their skills through practice. You cannot realistically expect students in a welding class to have the coordination to weld the back side of a pipe in the overhead while using a mirror without some practice to develop that skill.

Retention, with respect to sensory learning, is open to many interpretations and opinions. It has been estimated that people retain only 10 percent of what they read, 20 percent of what they hear, and 30 percent of what they see. When those senses are combined, however, retention takes a dramatic leap forward. Those same estimates tell us that when someone hears and sees, retention jumps to 50 percent. That makes a great argument for incorporating appropriate audiovisual media into your teaching. By asking proper questions to augment sight and sound to stimulate thinking, you can push student retention close to the 70 percent level. Requiring students to use all of their senses in skill training along with procedural steps and principles can increase their retention to as much as 90 percent. That implies a fair degree of mastery learning.

COMMON CHARACTERISTICS OF STUDENTS

Even though each individual is different in some way from every other individual, the majority of your students share certain common characteristics. Your knowledge and understanding of these characteristics can help you make more intelligent judgments and decisions about training, especially in the counseling and tutoring areas.

One characteristic students share is their belief in their maturity. Your students want to be treated as adults. Appeal to that desire for maturity by holding them accountable for their

actions. Demand an adult level of work from each student. Emphasize adult learning techniques that demand "hands on" experience, and treat your students with respect. Regularly emphasize the law of effect.

None of your students come to class wanting to fail. Use their basic desire to succeed to its strongest advantage by striving to help them move from success to success. The adage that success breeds success is certainly true in the learning environment. You must instill self-confidence in students by providing reinforcement that encourages further learning. If students are regularly unsuccessful, they will become frustrated and give up. Always be supportive, interested, and encouraging.

Another common student characteristic is the ability to evaluate. Most students are quick to form opinions. What do students evaluate? Everything; especially you, the instructor. They can quickly detect lack of competence, enthusiasm, and sincerity. It has been said that your students don't care how much you know until they know how much you care. You need to be dedicated to doing your best to make each student successful in your class. Students will always evaluate, so do not give them an opportunity for adverse evaluations.

Fallibility is a trait we all have--everyone makes mistakes. Remember that as an instructor so that you don't lose patience when students make mistakes. Most of us take our knowledge and skills for granted; we often forget the difficulties we had gaining those skills. Make sure you have patience and provide encouragement as students move through the various stages of competency. When minor failures occur, and they will, capitalize on them by turning them into positive learning experiences. Nothing can stigmatize and remotivate students quicker than ridicule or the implication that they are "losers." You can be more empathetic toward learners' difficulties by reflecting on your own early trials.

Students have a high regard for instructors who show a sense of fair play. Either favoring or picking on certain students degrades an instructor to the students. Treat all learners fairly, equally, and as adults. Leaning on the expertise or insight of the gifted or experienced student is easy, and isn't wrong. The secret is not to give the impression of showing certain students favored treatment. Conversely, be careful not to give the impression of picking on or badgering slower students. Treat all students by the same standards.

Recognition is a basic human need both in and out of the classroom, That characteristic provides instructors with great opportunities to motivate students to learn. We are not talking about special liberty, but merely the simple recognition for a job well done. Since techniques vary, you must develop your own approach to recognizing special performance. Always give recognition to students who respond to questions or contribute to classroom discussions. Be sure to recognize students promptly and to a degree commensurate with their effort.

INDIVIDUAL DIFFERENCES

We have already touched somewhat on individual differences among learners. They are many and varied, requiring versatility and insight on your part. The most obvious, of course, are the physical differences. Your major concerns in the area of physical differences, besides those for sight and hearing impairments, are those dealing with physical prerequisites for training.

Students commonly enter the training arena without actually meeting established prerequisites. Learn your students' physical capabilities so that you can prevent them from injuring themselves or other students. More subtle differences exist in aptitude and ability. Aptitude depends on the student's intelligence, inquisitiveness, ambition, reasoning ability, and other mental traits. Ability is somewhat similar to aptitude but deals more with skills in processing information to acquire concepts or to master physical skills.

Training is aimed at the center of our target population, the average learner. Since your job is to keep courses geared to the average learner, you must know as much about the individuals in the class as possible. Slow learners require your patience and understanding, often forcing you to devote extra effort toward tutoring, diagnosing specific difficulties, or motivating them toward success. Fast learners can become classroom assets if you appeal to their superior knowledge and leadership qualities. They can just as easily turn into liabilities if cast adrift in a sea of boredom while waiting for their peers to catch up.

Emotional differences also play a major role in training. Almost every class will have students with personalities ranging from introverted to extroverted. Neither is "bad." Most will be somewhere around the middle of the spectrum. Those at the extremes, however, will require understanding and special attention. The extrovert is sociable and outspoken, usually demonstrating outgoing behavior. You may have some concern of losing control of the class because of the extrovert's "take charge" nature. Learn to recognize and control the behavior without squelching the desirable trait of wanting to take an active part. The introvert, on the other hand, will be shy and nonaggressive. Do not confuse that with a lack of aptitude or ability. Draw these students into class activities by using whatever motivational tools you can muster without giving the appearance of badgering.

Students' experiences and backgrounds also play major roles in the makeup of most classes. Most classes will be made up of students with widely varying backgrounds. As an instructor, you should be aware of some research recently completed by the American Association of University Women (AAUW). In *The AAUW Report: How Schools Shortchange Girls,* the research discovered gender bias was still prevalent within our school systems from the pre-school through college level. Females are simply not encouraged to participate in classrooms, and in fact, are admonished for behavior such as speaking out or answering incorrectly. Their male counterparts, however, are rewarded for vocal behavior in the classroom through gaining of the teacher's attention and dismissal of inappropriate behaviors with the old axiom of "boys will be boys." Research has shown that when a male answers a question incorrectly, the teacher will coach them to the right answer. When a female provides an incorrect answer, the teacher will give her the right answer. Thus, a female never develops reasoning skills or becomes interested in reaching beyond a right/wrong response.

Gender bias has many implications for those teaching technology-related courses. While the gender gap in mathematics achievement is small and declining, the gender gap in science areas has increased. Boys are not innately superior to girls in quantitative skills. girls' math grades are as high or higher than boys, but boys are likely to outperform girls on standardized math tests. Math confidence has a stronger link to math achievement than any other variable. As girls grow up, they lose confidence in their ability to do well in math. Studies have shown that girls' loss of confidence in their math abilities precedes a decline in achievement. Girls who do well in math tend to have nontraditional views of gender roles.

As you attempt to incorporate student experiences into course material, be aware that males and females tend to have very different experiences in the math/science areas. Girls more often opt for science courses such as advanced biology, while boys will take advanced chemistry and physics. Boys have more out-of-school, science-related experiences than girls. This gap in experience continues in school, where one study showed that 79 percent of all student-assisted science demonstrations were carried out by boys. Boys drop out of math and science courses because they cannot do the work, while girls abandon these fields even when they are performing well.

Using the experiences and backgrounds of students will inject a note of realism into training. By being aware of the gender equity issue, you will be able to avoid the traps of perpetuating gender bias in the examples you use in class.

You will also see differences in the attitudes students bring into the classroom. They will have many different reasons for attending the class. Some will be in the class because they want to be--for all the right reasons. Others will only be in the class because they have to be, and they will resent it. Some might be indifferent, just marking time. Attitudes undoubtedly affect performance since they indicate how students feel about learning at a particular time. You must detect the individual motivation levels indicated by attitudes so that you can channel students' efforts toward success.

LEARNING STYLES

Just as students have different ways of learning new material, they also have different styles of learning. One person's learning style may not be effective for another person. You must be flexible and perceptive enough to use various teaching techniques that appeal to more than one learning style. That increases the chances for all students to master the objectives of the training. You especially need to know a student's learning style when you must provide remediation or tutoring for a student having academic problems. Most people have a preferred or dominant style of learning, but use all of the basic learning styles to some extent depending upon the situation. As an instructor, you need to be aware of the four basic learning styles: concrete, active, reflective, and abstract.

Concrete learners prefer an experience-based approach to learning. They rely heavily on their own feelings and personal judgments. Personal involvement is the key for them. They learn best by imitation after watching others take part in role playing and simulations. They very much like to be involved with the "real thing." For example, suppose you were trying to teach your students how to operate a fire pump. Concrete learners would prefer to watch you demonstrate the operation. They could then operate the pump by imitating your performance.

Active learners prefer to learn by becoming involved with the subject and taking an active step-by-step approach. They learn best from small group discussions, structured exercises, and problem-solving approaches. Active learners are experimenters who prefer to systematically try out new skills. A trial-and-error way of learning appeals to them. To operate the fire pump, active learners would systematically try out several different ways of operation.

Reflective learners like to observe and reflect (make comparisons and contrasts) before

drawing conclusions. They learn best from lectures, films, and reading. Reflective learners prefer to play the role of the impartial observer while watching others. To operate the fire pump, reflective learners would watch others operate the pump and reflect (think) about the different ways of operation. They would then analyze their observations before attempting to operate the pump themselves.

Abstract learners refer a theory-based, analytical approach to learning. They learn best from lectures by experts, theoretical reading, case studies, and activities that require solitary thinking. Abstract learners like to find the "theory" behind the subject matter and analyze the approach to discover what concepts are involved. In operating the fire pump, they would prefer to read about its principles of operation and to analyze the concepts involved in its operation before attempting to operate it.

Research has shown that students learn best and retain information longer when they are exposed to learning situations that include all four learning styles. That research found that group retention of information improved dramatically when instruction employed methods designed to involve more than one learning style. This is shown by the following percentages:

- Abstract = 20% retained
- Abstract and reflective = 50% retained
- Abstract, reflective, and concrete = 70% retained
- Abstract, reflective, concrete, and active = 90% retained

REASONS FOR FORGETTING

You can easily understand the problem of forgetting, since we all forget at times. However, as an instructor, you need to know how you can help decrease the forgetfulness of your students.

One of the most common causes of forgetting is disuse. People tend to forget what they don't use. What we forget with ease is factual information. That's why we write down telephone numbers. People have both long- and short-term memories. For example, short order cooks who receive verbal orders from waiters and waitresses place those orders in short-term memory and as they till the orders, forgets them. So, too, we forget the telephone numbers we just looked up a short time ago. However, factual information important to daily functioning goes into our long-term memory, so we usually retain it. Data in that category includes Social Security numbers, personal identification numbers for bank cards, frequently called telephone numbers, certain addresses, and so forth.

Since your students won't remember factual information very long, plan their learning around conceptual bases. Give students a concept and the knowledge of how to research and retrieve facts about that concept and you give them permanent learning. Concentrate on concept building by reviewing frequently, providing examples, and providing time for students to practice what they are learning.

Another cause of forgetting is interference. Interference occurs when the memory of one

event hinders the recall of another. It could occur when outdated information students have learned blocks their memory of updated information. For example, former students of French who are trying to learn Spanish may keep recalling a French word while trying to remember its Spanish counterpart. The greatest help you can offer is to make sure learning is complete and conceptual. Once students have had sufficient practice to learn the information as a concept, they will retrieve the information more easily.

SUMMARY

Your practical application of the principles of learning will have a great impact on your students' ability to master course objectives. Knowing about these principles isn't enough; you must use them on a daily basis. To transfer your knowledge and skills as an expert in your field, you must understand what causes students to learn and what can interfere with that learning. Students have enough built-in obstacles to learning without you becoming one also. Learn, understand, and apply the principles of learning and you will be on your way to becoming a master trainer.

CHAPTER 5

EFFECTIVE COMMUNICATIONS

INTRODUCTION

The ability to communicate effectively is essential. Communicating is more than speaking; it involves your entire presence. How you present yourself has a great deal of impact on your students' interest and desire to learn. As a Navy instructor, you must be able to communicate your knowledge, skills, and experiences to the students in order to facilitate the learning process. How you communicate often has more impact than the content of your message. The skills and techniques explained in this chapter will assist you in strengthening your ability to communicate effectively.

EFFECTIVE COMMUNICATION PRINCIPLES

The purpose of effective communications in a training environment is to ensure students accurately understand the material presented by the instructor. There are basically two principles you need to understand that have to do with communicating effectively: (1) the identification and removal of barriers and (2) the communication process itself.

BARRIERS TO EFFECTIVE COMMUNICATION

The existence of certain barriers increases the potential for poor communication. By being aware of these barriers, you can reduce them and enhance the clear understanding of your students.

Lack of Common Core Experience

One barrier is the lack of common core experience. You are unlikely to find any group in which students have the same common core experience. For example, if you say that a kiwi tastes like a kumquat, students who have tasted one would have the experience to make the proper relationship.
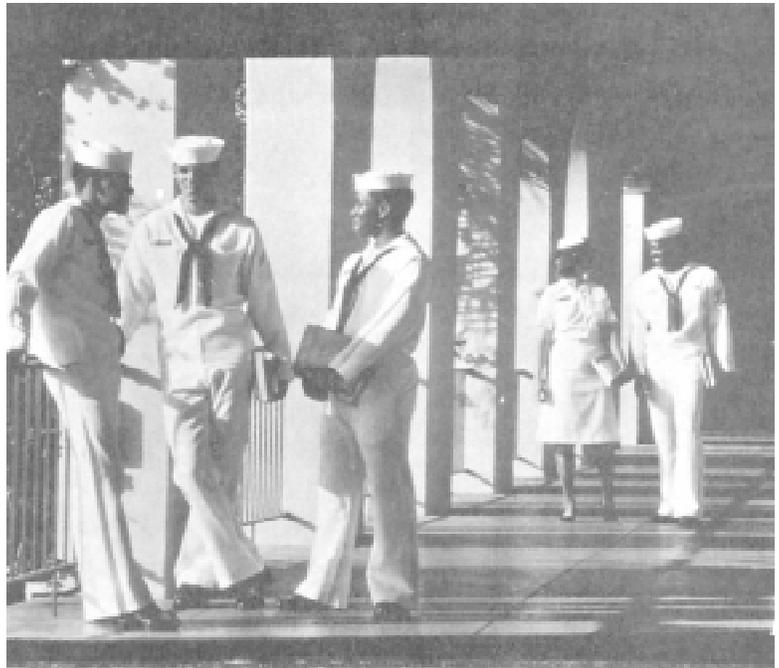
However, for the students who have tasted neither, the comparison would have no meaning. To prevent that problem, determine student experience level before you prepare your lesson. Then check for understanding as you use examples and analogies with your explanations.

Overuse Of Abstractions

Abstractions are concepts, ideas, or words that are not directly related to the subject being discussed. To avoid confusion you should speak in concrete terms--be specific. Be aware of the background and experience level of your students and use appropriate terms and examples. Remember, you will normally have more experience in the subject matter than any of your students, so you have the responsibility of ensuring understanding. This requires that you not only present the information, but also that you check to ensure the students understand exactly what you intended.

Fear

Fear may be one of the greatest barriers to effective communication. The fear of showing ignorance, fear of disapproval, fear of losing status, and fear of judgment are common barriers. Many times, students will have anxieties or fears about their abilities. Students may hesitate to take part in your discussions because they have a lack of confidence and are afraid they will appear ignorant. That, in turn, brings about a fear of judgment and a fear of losing status in front of their peers.

Try to understand your students' fears. Provide a threat-free learning environment by being encouraging and nonjudgmental of the students. Remember how long it took you to learn your subject matter. Take the time to recognize the individual differences in your students so that you will know how to motivate them.

Since you have control of the class, you must direct the class energy in a positive direction. Do not allow fellow students to make fun of or exhibit disapproval of a struggling student. Avoid embarrassing any of your students or offending human values. Follow the basic principle of motivation by giving them positive feedback.

Environmental Factors

Environmental factors such as noise and temperature may interfere with the communication process. Obviously, noise is a barrier to hearing what is being said. If students are overly hot or cold it may be difficult from them to listen attentively. However, more subtle factors may also affect the communication process. The color of the walls, uncomfortable seats, the location of pictures or illustrations, and the arrangement of students in relation to the instructor may all become barriers to effective communication.

You should constantly strive to identify and eliminate barriers to effective communication. Some will be obvious while others maybe very difficult to detect. Your awareness of barriers, along with a knowledge of the communication process, will assist you in communicating effectively.

THE COMMUNICATION PROCESS

The communication process consists of a message being sent and received. The message may be verbal or non-verbal. The same basic principles apply whether humans, animals, other forms of life, or combinations of these are involved. Your challenge, as an instructor, is to not merely communicate with your students--but to communicate effectively.

Effective communication involves a message being sent and received. Added to this however, is the element of **feedback** to ensure that the message sent was received exactly as intended. This concept may be illustrated using the three-step communications model (fig. 5-1).
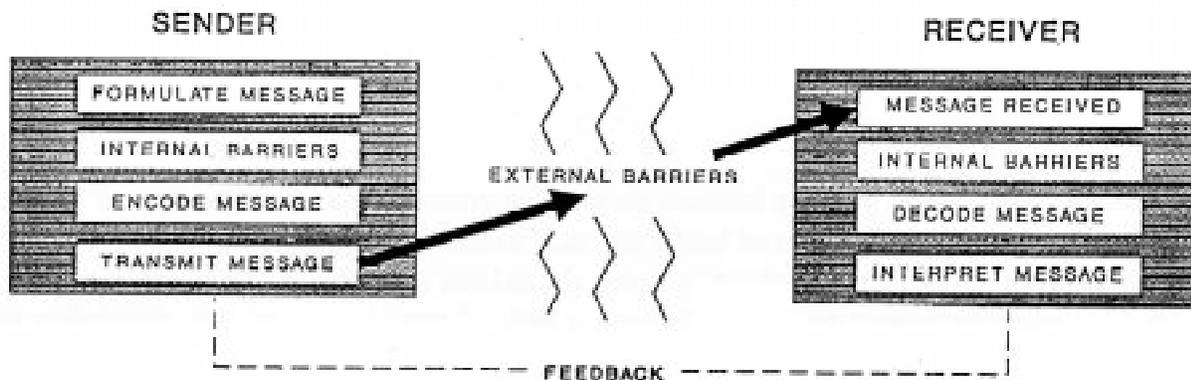
Figure 5-1.—Three-step communication process.

Sending The Message

There are four elements involved in sending a message. First, as the instructor (sender), you formulate the message you intend to communicate. Next, you consider possible barriers that may affect the message. This includes your experience, the terms you will use, and even your feeling toward the subject or the students. External barriers such as noise must also be considered. Third, you encode the message; that is, you put the message into the words you want to use. Last, you clearly communicate (send) the message.

Receiving The Message

There are also four elements involved in receiving a message. The students (receivers) will first hear and/or see the message you sent. Second, the message is affected by external barriers, if any, and the students' own internal barriers. Possible internal barriers may include the students experience level, their understanding of the terms used, their attitude toward the material, or the way they feel about you. Third, your students decode the message through the use of mental images. For instance, when you say the word **circus,** the receiver does not "see" the letters that form the word. Instead, a mental image of some sort appears. How many different mental images might arise among your students for this one word alone? A clown, a

big top, lions, acrobats, and so forth. Fourth, the students interpret the message. Clearly, at this point in the process there is no way for you to determine that all of the students received the message you intended. To determine this, you must get feedback.

Feedback

Feedback, which may take several forms, provides essential information about your success in communicating the message. To get feedback, have the students respond to oral questions and encourage them to ask questions. The students' non-verbal behaviors also provide important clues as to their understanding of the material. Facial expressions and body movements often indicate when students are unsure about the meaning of your message. You should be careful in accepting a "yes" response when you ask "Do you understand?" Obtain meaningful feedback by asking questions that require the students to provide answers which indicate that they in fact do understand exactly what you intended.

EFFECTIVE COMMUNICATION SKILLS AND TECHNIQUES

There are many skills and techniques you must master to bean effective communicator and instructor. Many of these skills you already possess, all that is required is that you use them to their best advantage. Others, you need to learn and practice.

LISTENING

Listening is one of our most important communication skills. It is an active process of hearing and understanding that demands concentration and attention. Both you and your students have responsibilities in the communication process.

You must ensure that the learning environment is free of distractions that might interfere with the students' ability to listen. Be alert to the non-verbal behaviors of your students. Facial expressions reveal much of what is happening in the mind of a student. A quizzical look indicates some misunderstanding has occurred or a question needs to be addressed. A student leaning slightly forward and maintaining good eye contact with you is probably interested and sincere about learning.   An affirmative head nod indicates approval, agreement, or understanding. Conversely, eye contact out the window or someplace other than the front of the room may indicate boredom or lack of interest. Fidgeting in the chair or a slouched posture may also bean indication of something other than effective listening. Raised hands and relevant questions are sure signs that you are communicating effectively. Learn to determine if students are listening by the type of feedback they provide. Effective listening depends on motivation, and you are the prime motivator in your classroom.

Students should arrive for instruction ready to learn. They should participate and ask questions as they arise. Students must understand that they have responsibility for their own learning. This requires active listening on their part.

EFFECTIVE INSTRUCTOR DELIVERY TECHNIQUES

Delivery style has a major impact on student motivation and determines to a great extent how well students listen. Studies have shown that spoken words alone account for only seven percent of the impact of the message. The following Factors are important considerations in your delivery of instruction.

Articulation

Articulation is simply understandable speech. You can achieve good articulation in two ways. First, enunciate; speak clearly. Second, pronunciate; accent syllables and reproduce consonant and vowel sounds in conformity with the accepted standard--the dictionary.

To be a good speaker, make crisp, distinct enunciation your goal. Avoid slurring and mumbling. Avoid slang such as jist, git, gonna, whut, watcha, or hafta. In rehearsal, exaggerate your enunciation beyond what is required in normal speech. Apply the principle of sharpened enunciation not only in your classes but in ordinary conversation. Make it a habit.

If you have a regional accent, such as a Southern drawl or a New England twang, don't try to eliminate it--make the most of it! It's part of your personality. A slight accent is pleasant and adds interest and personality to your speech. However, be sure that people from other parts of the country can understand you.

Grammar

Grammar concerns the correct usage of the spoken or written word. It is like a code. When you use the code correctly, the message comes through clearly and quickly. But when you make encoding errors, the one who receives the message has to labor to extract the precise meaning. Sometimes your message never comes through exactly right. However, as an instructor, never commit glaring grammatical errors like "him and me is going," "I seen," "he give," or "it run."

Rate Of Speech

As a speaker, you should neither talk at a slow, plodding rate that puts your listeners to sleep nor rattle off words so rapidly that they run together. As a rule, speak fast enough to be interesting yet slow enough to be understood. Just as a good baseball pitcher keeps the batter alert by changing the speed of the ball, take advantage of a vocal change of pace to hold the interest of your audience.

Your rate of speech should be governed by the complexity of the thought, idea, or emotion you are communicating. Use a fast rate for joy, excitement, or vigorous action. Use a slow rate for a deliberate or methodical presentation. Add emphasis by either slowing or speeding your rate. The normal rate of delivery is 125 to 150 words per minute.

To improve common rate difficulties, observe the following suggestions:

Slow, ponderous rate. Force yourself to think faster so that you can speak faster. Using a tape recorder, read aloud and interpret the meaning of the words by the rate at which you speak them. Then play back the recording. If your rate is still too slow, record the same

reading selection again but force yourself to use a faster rate of speech to cut down the total playback time.

Fast, machine-gun delivery. Curb your impatience to blurt out ideas. Take time to make them clear. Force yourself to slow down. Recognize the listeners' need to absorb ideas; give them time to do so by saying words clearly and by pausing longer between ideas. Read aloud, observing the marks of punctuation. Express the meaning of the words carefully at the rate that fits your interpretation. Taking care to enunciate more precisely will generally slow your rate.

Halting, choppy rate. Concentrate on speaking complete ideas or sentences. Take a deep breath before you begin a sentence; breathe between, not in the middle of, ideas or phrases. Sometimes a choppy rate results from tenseness, nervousness, or lack of familiarity with the subject matter.

Pauses. In writing, punctuation marks separate thoughts and ideas and give the desired meaning and emphasis to words. In speaking, pauses serve the same functions to a large degree. You may use pauses to gain humorous, dramatic, or thought-provoking effects. Use them as a vocal means of punctuating for effect. Proper use of pauses gives listeners a chance to absorb ideas and gives the speaker a chance to breathe and concentrate on the next point. Pauses also give emphasis, meaning, and interpretation to ideas.

The following suggestions will help you overcome common pausing difficulties:

Not enough pauses. Begin by reading aloud something that you like. Force yourself to pause between ideas and at periods, commas, and other punctuation marks. Try to adopt the attitude of the artist who makes a few brush strokes and then steps back to evaluate the results.

Too many pauses. A lack of knowledge of the subject, failure to organize material thoroughly, or inadequate rehearsals usually result in too many pauses in the speaker's delivery. Study your material and organize it on paper. Then rehearse until your thoughts and words flow smoothly. Thorough familiarity with the subject matter increases verbal fluency.

Overuse of verbal connectors. Pauses, properly placed in the flow of speech, are often more effective than words. Filling pauses with meaningless, guttural sounds gives listeners the impression that you are not confident of what you are saying, and that you are not prepared to speak to them. Too many "uhs" and "ahs" may be detrimental to an otherwise effective lesson presentation. To improve on this difficulty, use the same techniques suggested for eliminating too many pauses and leave out the "uhs" and "ahs."

Inflection

Inflection is a change in the normal pitch or tone of the speaker's voice. Just as musical notes become melody when arranged in different relative positions on the musical scale, your voice becomes more interesting and words more meaningful when you use changes in pitch. Using inflection can increase the emphasis on certain words.

The following example illustrates how inflection on different words changes the meaning of a question. Say the question to yourself, raising your pitch (but not your volume) on the underlined words, as indicated:

<u>What</u> am I doing?

What <u>am</u> I doing?

What am <u>I</u> doing?

What am I <u>doing</u>?

Inflection is the key to expression of mood. It can be emotional, persuasive, or convincing. Using inflection can move an audience to tears or laughter and create a lasting impression. Without inflection, the audience may fall asleep.

Like pauses, inflection is a way of punctuating speech; it can put the question mark at the end of a question, make a statement of fact more positive, or help to put an exclamation mark at the end of a strong statement. Inflection is the principal difference between just saying words and speaking ideas with meaning.

Try the following suggestions to improve inflection:

Read aloud and communicate your emotions. Inflection conveys feeling and meaning. However, feeling also produces good inflection. As an instructor, you must show your feeling about what you say. To practice using inflection, read aloud and communicate your emotions. Using a tape recorder is a good way to improve inflection because you must communicate emotion entirely through your voice; gestures or visible facial expressions provide no help.

Downward and upward inflection. Generally, downward inflection at the end of a sentence expresses conviction. However, downward inflection within the sentence itself gives a sense of finality to the thought and creates a mental break in the listeners' thoughts. Use slight upward inflection within the sentence to indicate that the thought is not yet complete; that serves to bind ideas together and to give unity to the thought. Use upward inflection at the end of a sentence only when you ask a question or imply uncertainty.

Force

Forceful speech combines the volume or carrying power of the voice with the demonstrated vitality, strength, and conviction of the speaker; it includes the proper placement of stress or emphasis on key words and phrases. Like rate, pauses, and inflection, force is a way of conveying conviction, of giving meaning, or of adding emphasis. Yet, unlike rate, pauses, and inflection, it cannot be set apart distinctly. Force involves rate, pauses, and inflection plus carrying power, fullness of tone (or body), and proper regulation of loudness.

Listeners will not respond to a speaker who shouts and is insensitive to their feelings. Neither will they be convinced by the cool, detached manner of a speaker who is consistently calm, quiet, or patronizing. To communicate, you must awaken reactions and feelings in your listeners.

Knowledge of the subject and of the sequence in which you plan to present ideas will help you to calmly lead the thoughts of your audience. You can then drive home a point with power and

let silence underline the significance of your words.

Through your gestures, voice, movement, eye contact, and choice of words, you can convey force to your listeners. But your listeners will neither hear you nor see you unless you project words and actions with a vitality and strength of conviction. Force is not loudness, shouting, wild gesturing, or vulgar language. Force is knowing what you want to say and then saying it with implicit firmness and undeniable confidence.

The following common difficulties with force have accompanying suggestions for improvement:

Lack of volume. To increase volume, select someone in the back of the room and concentrate on making him or her hear you. Rehearse in an empty classroom and speak to an imaginary person in the back of the room. Since these exercises will make you aware of the distance involved, they will motivate you to increase your volume. When you speak with increased volume, you will be able to feel your diaphragm working.

Dropping volume at end of words or sentences. Dropping volume usually results when a speaker incorrectly associates a drop in volume with downward inflection. Develop the habit of paying attention to the sound of your own voice so that you can judge whether you are being heard. Practice lowering the pitch of your voice without dropping the volume. Record your voice so that you can hear how you sound to others. Read aloud, and concentrate on projecting every word in a thought or idea to an imaginary listener seated in the back of the room.

Failure to give emphasis to main points or key words. To emphasize main points and key words, you must first know your subject well. Then you can communicate main and subordinate ideas by stressing key words and phrases using volume, pitch, rate, and pauses. That will result in convincing and authoritative presentations.

SPEECH IMPROVEMENT

This chapter has addressed specific ways to correct common difficulties; however, two methods will improve all aspects of your speaking voice. First, listen closely to polished speakers on television, such as popular newscasters. Their techniques of speech make them good models for study. Don't try to imitate them exactly, but study how they use their voices to give meaning to their words and emphasis to their ideas. Second, listen to yourself daily as you instruct and casually converse with your contemporaries. Make a habit of constantly evaluating how you use the speech factors listed in this section.

EYE CONTACT

The most powerful element of instructor presence in front of a class is direct eye contact with your audience. By looking directly in the eyes of each of your students, you personalize the lesson being presented and stimulate the desire for them to listen more intently. Each student should have your direct eye contact several times during an instructional period. Make and maintain this eye contact for 3 to 5 seconds. This time interval is appropriate for personal contact without being overbearing or creating some level of discomfort for individual students. Scan the entire class without developing a mechanical pattern. Avoid the common pitfall of

talking to the chalkboard or visual aid panel or to any other training aid you may be using. Maintaining effective eye contact enhances your credibility. Another important reason for looking directly at your students is to observe their nonverbal reactions to your instruction. Feedback provides you with the opportunity to judge your effectiveness and make necessary adjustments as discussed later in this chapter.

BODY MOVEMENT

Body movement is an important part of successful communication; it reinforces, emphasizes, and clarifies verbally expressed ideas. Because body movement is so easily adaptable for communicating, skilled pantomimic actors can tell complicated stones involving many characters through physical movement alone. However, your actions while instructing must reinforce rather than contradict your words. Make sure the image you present and your body movements strengthen your communication.

Movement is the motion of the whole body as you travel about the classroom. Movement attracts the attention of the listener because the eye instinctively follows moving objects and focuses on them. Movement can help you convey thoughts to your audience.

The basic rule in movement is moderation. Do not remain glued to one spot, but do not keep on the move all the time. As your skill and experience increase, your movement will become less obvious and more meaningful. Learn to modify the degree of movement to make it natural and meaningful.

Plan your movement so that you are at the proper place at the proper time. For example, when using an overhead projector with a transparency, plan movement so that you are at the machine when it should be turned on; when you need to open the curtains, plan movement so that you are at the curtain control point at the time the curtain should be opened.

GESTURES

A gesture is a natural movement of any part of the body that conveys a thought or emotion or reinforces oral expression. Your arms, hands, and facial expressions are your principal tools of gesture. Your gestures will depend to a large extent on whether your personality is vigorous and dynamic or calm and easygoing. Regardless of your personality, gestures will add to the effectiveness of your speech if you relax your shoulders, arms, and hands and concentrate on communicating to the audience the meaning and importance of your ideas. When the gesture is natural, it is effective. If the gesture is artificial, posed, or strained, it detracts rather than reinforces. Practice gestures as a natural part of your speaking manner; they should arise spontaneously from enthusiasm and conviction.

Descriptive gestures portray an object or illustrate an action. Describe the size, shape, or movement of an object by imitation. Show a vigorous punch by striking with your fist; show height by holding your hand at the desired level; show speed by a quick sweep of your arm. Pantomime a complicated or humorous movement as you describe it. Use your hands to sign a message, such as a *"V"* formed with two fingers as a symbol of victory.
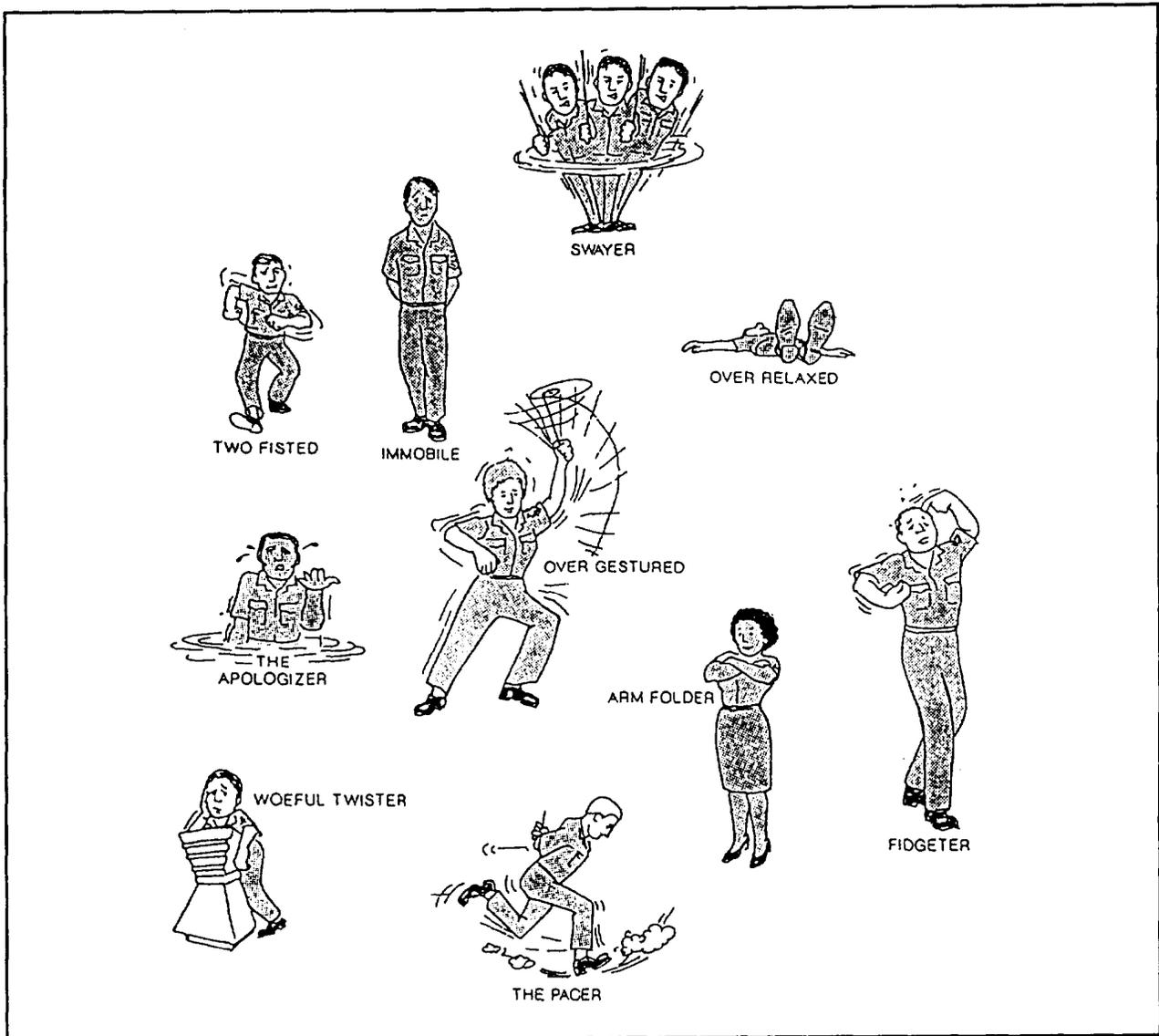
Figure 5-2.-Body movement and gestures to avoid.

Facial expression is a type of gesture. To change opinions or to inspire or interest people, your face must show what you are feeling and thinking. Facial expressions show many feelings, such as joy, dejection, anger, and poise.

The most common fault in facial expression is the deadpan face that shows a total lack of expression. Another common difficulty is the use of a constantly intense expression, usually manifested by a frown. Overcome this problem by relaxing all over; then use your intensity only on key ideas.

Finally, remember that you are neither a wooden statue nor a clown. You are a human being. The more natural you appear and act, the more you will influence your listeners. The classroom is no place for a poker face.

ATTITUDE

Your speech reveals how you feel about what you say. It has an emotional impact on others. Thus, emotion indicates how you feel about all that surrounds you--it shows your attitude. Attitude affects the words you use. The four specific indicators of a good speaking attitude are sincerity, confidence, enthusiasm, and humor.

Sincerity, from the speaker's point of view, is the apparent earnest desire to convince the audience of the truth and value of an idea. The two sources of sincerity are a personal, intense belief in your subject and a belief in the value of your subject to your listeners. The first of these sources is ideal because intense personal belief is natural sincerity that shows in your every word or gesture. The second source is more rational than emotional. If you know your teaching material is valuable, you will present it in an honest and forthright manner. You will not rely on gimmicks or questionable reasoning to make your presentation look good.

By showing that you believe in what you say, you convince your students of the importance of the subject. Sincerity shows in a number of ways: directness of manner, facial expressions, clarity of explanation, proper combination of humility and authority, and the effective use of the voice and body to reinforce and emphasize ideas. Remember that students must see, hear, and feel that you believe in what you say.

Confidence is a personal attitude or feeling of assurance. It is belief in your ability to perform a task well. To be confident and control stage fright requires two prerequisites: knowledge of the subject and belief in your ability to speak. You obtain knowledge of a subject through research and study. Belief in your ability comes from rehearsal and experience. These requirements are entirely up to you to accomplish in your own way.

ENTHUSIASM

Enthusiasm is the outward manifestation of sincerity and confidence. From the speaker's standpoint, enthusiasm is a strong personal excitement or feeling about a cause or a subject .

Enthusiasm is not shouting; it is not phony, overdramatic speech ; it is not waving of the arms and leaping about on the platform. Rather, it is the way you show your belief in your subject! How you show enthusiasm is governed by your personality. If you are a vigorous and dynamic person, you may show enthusiasm by brisk, energetic movement; sweeping gestures; a rapid rate of speech; widely-varying inflection; and plenty of vocal force. If you have a more subdued nature, you will move and gesture with less energy and speak in more measured

tones. You will use force only on the key words and ideas; make more use of the pause for effect; and maintain a calm, pleasant, but confident and authoritative manner. Most instructors show enthusiasm by combining characteristics from both of these styles.

HUMOR

You may be a sincere, confident, and enthusiastic instructor, yet still lack the humor needed for effective instruction. If you lack a sense of humor, you will seem unreal, inhuman, or very conceived. Humor shows that you are, after all, just another human being and that you have a warm, lively interest in all that goes on around you. Having a sense of humor does not necessarily imply an ability to tell funny jokes, although tasteful, relevant jokes certainly have a place in good instruction.

A more effective type of humor is spontaneous humor. Take advantage of unexpected humorous classroom situations that sometimes arise--make a brief comment, pause, or simply smile. Humor directed at yourself is very effective. Most people laugh when someone important is receptive to being the object of good humor.

In addition to decency, the only rule to follow in using humor is good judgment. Take care not to direct humor at a specific person. Students may resent having a classmate singled out. Be sure your humor is good natured and lightly done. Clean humor is as American as the hot dog and will often assist student learning.

FEEDBACK

Observation of your students provides important feedback that will help you in evaluating the effectiveness of your communications skills. Puzzled brows, frowns, and whispered questions between students indicate that you have not communicated effectively. The students have unconsciously shown signs of a lack of understanding.

The observation of these signs and their on-the-spot analysis is called feedback. That again underlines the importance of maintaining good eye contact with your students.

Students can also send signs of positive feedback. You may often observe students at the very moment they gain new knowledge. When you see a student's face light up, you are seeing understanding take place. This positive feedback is one of the most personally rewarding experiences of an instructor.
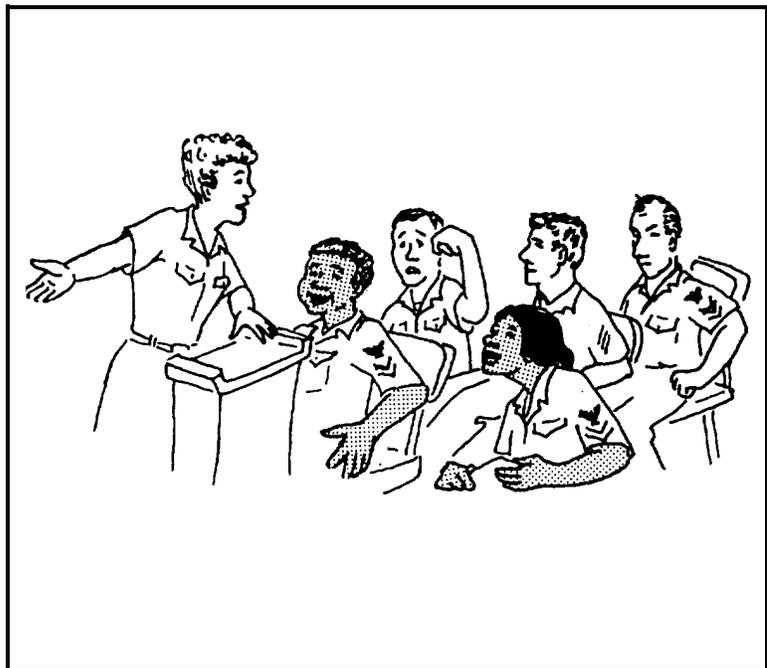
Feedback is important because it indicates how you must adjust your instruction to communicate effectively. If the students have obviously not learned, then you must modify your instructional approach.

Feedback makes the learning process an intercommunication between the students and the instructor. As such. it is critical to the success of the instructional mission.

ORAL QUESTIONS

For two-way communication to take place between you and the students, you must use good, thought-provoking questions throughout the lesson. The use of oral questions allows you to determine from time to time if you are maintaining essential communication. When properly planned, implemented, and evaluated, oral questioning improves effectiveness and, more importantly, student learning.

The greatest resource for enhancing your classroom instruction is the students themselves. Training is most effective and learning more permanent when the students take an active part in the process. Students need to interact with the subject matter and the instructor during the lessons rather than just at test or performance time.

The responsibility of active class participation lies with you, the instructor. Avoid over using the questioning technique of asking "are there any questions?" That does not stimulate much thought or generate productive class participation.

As an instructor, always remember that one purpose of questioning is to help students get involved in learning the material at hand. Some instructors have mastered the technique of teaching a lesson almost entirely through the use of oral questions. Questions add variety to a lesson and require active student involvement. However, questions are only as effective as the manner in which they are used. You can defeat the whole purpose of the questioning technique by using it improperly, so make sure you learn how to use questions properly.

If you don't have a natural knack for oral questioning, you can develop some degree of skill by setting yourself a goal for improvement and then practicing constantly.

Try to decrease the amount of one-way communication in the classroom by asking questions as much as you make statements. You will find that you have a natural compulsion to "tell," which is understandable. After all, that is probably what your instructors did. Studies show that in a typical classroom, someone is talking two-thirds of the time; and of that time, the instructor does two-thirds of the talking. You can see the students get only one-third of the response time in those classrooms. Through good questioning techniques, you can increase and improve the amount of student responses beyond the one-word contribution.

A key point to remember is that the intent of a question is to elicit a response. Effective use of questions will result in more student learning than any other single technique. Becoming skillful in the art of questioning will increase your effectiveness as an instructor.

PURPOSES OF ORAL QUESTIONING

The primary purpose of oral questioning is to stimulate the students to think. Navy requirements call for people who can operate complex equipment and carry out those troubleshooting and maintenance procedures needed to keep the equipment operating at peak performance. To perform those duties effectively, sailors must be trained to analyze, compare, and interpret facts, data, and methods, all of which require a high caliber of thinking.

Oral questioning also provides you with a practical means for establishing the level of instruction. Students may vary greatly in the quantity and quality of background knowledge they have acquired through previous training and experience. You must determine the level of achievement of the students before proceeding with the presentation of new subject matter. Although you may use a pretest or a questionnaire for this purpose, the quickest and simplest means is a series of oral questions.

Oral questioning has three other important purposes: First, it arouses interest in the subject matter. Second, it focuses attention upon a particular area of the subject matter. Third, it drills students on subject matter they must recall precisely, such as correct terminology, functions of parts, and safety precautions.

Use questions to achieve the following benefits:

- Discover each student's interests, abilities, and depth of knowledge.
- Arouse student interest in the subject matter of the lesson.
- Stimulate discussion, and keep it closely tied to the subject matter.
- Review and summarize important points.
- Test students' knowledge of what the lesson has covered, and check the effectiveness of the instruction.

CHARACTERISTICS OF A GOOD ORAL QUESTION

Questions that are poorly worded, vague in meaning, or ambiguous will frustrate both you and the students. Students who do not comprehend the true meaning of poorly phrased questions will hesitate longer than usual and then give uncertain answers. You may feel dissatisfied with the answers and reprimand the students for their lack of attention and understanding. The students, knowing that they have answered unsatisfactorily through no fault of their own, may lose enthusiasm and withdraw from active participation. You can avoid frustrations of this kind by planning your questions well in advance as well as carefully choosing and arranging words and phrases.

The construction of good oral questions requires three considerations; level of instruction, use of interrogative, and clarity of meaning.

Level of Instruction

In asking questions, use simple words, correct grammar, and complete sentences. Use words the students know and understand. As the course progresses, introduce new terms and more technical phraseology.

Ask questions at times that suit your presentation of course material. Plan questions that require students to think before answering. Don't use questions that give away the answer or that students can answer with a simple yes or no.

Use of Interrogative

Use the interrogatory word or phrase at the beginning of your question so that students know immediately when you are asking a question. Let's consider two examples where this is not done: (1) The two sizes of firehose most frequently used in the Navy are what? and (2) You can determine whether or not explosive vapors are in a compartment by what means?

Questions worded in this way handicaps the students in at least two ways. First, the students are expecting a declarative statement, not a question. Second, they cannot identify the meaning of the question until the final words are spoken. Note the improvement in these same questions when the interrogatory word or phrase is placed at the beginning: (1) What are the two sizes of firehose used most frequently in the Navy? and (2) By what means can you determine whether or not explosive or toxic vapors are in a compartment?

Clarity of Meaning

Avoid the use of catch or trick questions as a teaching device, especially for beginners. Make sure the wording of the question conveys to the students the true or intended meaning. The students must understand what you want, regardless of whether they know the correct answer. "Where are storm warnings flown aboard ship?" is a good question; but "Where are storm warnings flown?" fails to indicate what point is being tested.

Make your questions brief, and limit them to one thought. To include too many factors in a single question confuses the students. Ask well-stated, clearly understood questions in a normal conversational tone as part of the lesson. After each lesson, reevaluate your questions in light of how the student responses contributed to better learning.

TYPES OF ORAL QUESTIONS

Learn to use oral questions throughout the lesson. Use them in the introduction to create interest and focus attention on the subject matter and during the lesson presentation to ensure student understanding. Then use them at the end of the presentation for review and drill purposes.

Feel free to ask factual, thought-provoking and interest-arousing questions as often as you choose. Other types of questions may serve one or more useful purposes if used sparingly, but may prove ineffective if you use them too often.

Factual Question

The factual question asks for specific information; for example, "When was the first U.S. nuclear powered submarine built?" Although the primary purpose of the factual question is to help students memorize facts, it may, under certain conditions, have important secondary

purposes. For example, you could use a factual question to arouse interest, to focus attention upon certain parts of the subject matter, and to assist in determining the level of instruction.

Thought-Provoking Question

A thought-provoking question normally begins with such interrogatory expressions as "What is the advantage of," "What is the difference between," "Why is this method considered superior to," "How would you solve the problem if," and so forth. The value of this type of question is that a single question, properly used will stimulate the students to think. Prepare good, thought-provoking questions on key lesson points in advance.

Interest-Arousing Question

An interest-arousing question may sound, superficially, like a factual question. "How many Navy ships were involved in collisions at sea during the past year?" Since the question calls for an exact number, students will doubtless attempt to recall the collisions about which they have read or heard. When asking an interest-arousing question, however, you are not interested in exact numbers, exact names of ships, or exact situations. Your main purpose in asking the question is to focus the students' attention and get them thinking about the subject you are about to present.

Multiple-Answer Question

A multiple-answer question is one that has more than one correct answer. It can be used to increase student participation or cause students to think about the other students' answers. A multiple-answer question generates a high interest level and improves listening skills.

A factual, thought-provoking, or multiple-answer question may also be one that is interest-arousing. That depends upon your intention in asking the question, not upon its form or content. However, if you overestimate the knowledge of your students, a question intended to be factual may turn out to be thought-provoking. If you underestimate the students' knowledge, a question intended to be thought-provoking may turn out to be factual.

As previously mentioned, certain kinds of questions are effective if used occasionally but are detrimental if used frequently. Typical of these types of questions are the yes or no question, the leading question, and the canvassing question.

Yes/No Question

The yes or no question, of course, calls for a simple answer--yes or no. This type of question has value in arousing interest, focusing attention, encouraging student participation, and serving as a lead-in to other kinds of questions, such as "Why do you believe that to be true?" An excessive use of yes or no questions tends to encourage students to guess.

Leading Question

A leading question is one that suggests its own answer; for example, "You wouldn't smoke in the paint locker, would you?" or "The 40mm gun is larger than the 20mm gun, isn't it?" If used properly, leading questions have value in focusing attention, in arousing interest, and in emphasizing a point. You can also use leading questions to help the student think the matter through to the right answer. If you notice students groping for the right answer, ask a question that directs their attention to information they know but have overlooked in answering the question. That has value when used skillfully because it builds a student's confidence. Occasionally. use the leading question to help awkward students, saving them the embarrassment of failure in front of the class. If used too frequently, leading questions discourage any real thinking and become boring to the students.

Canvassing Question

Use a canvassing question to determine those who are familiar with a specific area of subject matter. If you are teaching damage control for instance, you may ask "How many of you have been involved in an actual shipboard fire?" A show of hands provides information about student experiences that you may find useful as your lesson progresses. It gives you a great opportunity to bring some real life examples into your lesson and to provide some individual recognition for student contributions. Canvassing questions can also help to determine class level.

TECHNIQUES OF ORAL QUESTIONING

The AAUW Report: How School Shortchange Girls was addressed earlier. Gender bias has also played a significant role in questioning techniques within the school system. As mentioned earlier, boys demand more attention and get it. When boys call out answers, teachers usually listen while the same behavior exhibited by girls is corrected. Even when boys do not volunteer, teachers are more likely to call on them than girls. Girls receive less teacher praise, fewer remedial comments on their work, and less specific comments about their performance. The implication for you as an instructor is to be aware these behaviors will continue in class unless you correct them. Set the same standards for responding to questions and enforce them uniformly. Provide remediation to both males and females in coaching them through incorrect responses. Do not spend an inordinate amount of time taking questions from males alone. Know that females may be hesitant to respond to questions, but by providing a safe environment for all your students, you will gain culturally-sensitive class and curriculum include more favorable attitudes toward other groups, a reduction in stereotyping, and increased academic achievement.

Five Step Questioning Technique

A recommended technique of oral questioning consists of five steps: asking the question; pausing; calling upon a student; evaluating the student's answer; and finally, emphasizing the correct answer. Put time and thought into making each step count in the teaching process.

The **first step** in good questioning techniques is to **state the question.** Since the intent of questioning is to provoke thought, ask the question before calling on a person to answer. That encourages each member of the class to formulate an answer. Many instructors make the mistake of calling on a student before stating the question. That allows the rest of the students to relax and not formulate an answer. When you state the question first and then pause for a few seconds, everyone will begin actively thinking of an answer. This thinking process enables students who you do not select to answer the question time to think so that they may add to the response. Identifying the respondent before asking the
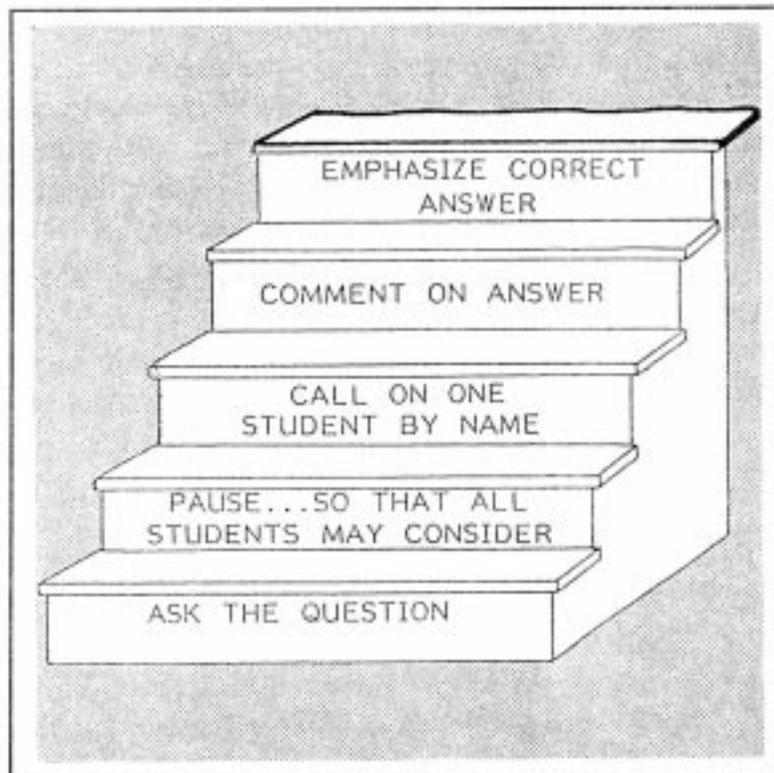
Figure 5-3.-Five step questioning technique.

question may startle and fluster some students so much that they may not be able to respond, even if they know the answer. State the question clearly, giving one central thought, by placing the interrogative word at the beginning of the statement to alert students that a question is coming. Do not repeat the question or change the wording of the question unless necessary.

After asking a question, **pause** to allow the students time to think through their answers. Vary the duration of the pause depending on the difficulty of the question and the level of the students. Most instructors fail to pause long enough after asking their questions. Calling on a student too quickly is as detrimental as calling on the student before asking the question.

After pausing for a reasonable time, **call on a student** by name to answer the question. That satisfies a basic student need for recognition. If students feel you recognize their individual efforts, they will put forth greater effort. When selecting a person to respond, consider both the difficulty of the question and the individual abilities of students. Consistently assigning a difficulty question to a slower learner will remotivate that student. Spread the questions around without establishing a predictable pattern. A predictable pattern includes calling on students either in alphabetical or seating order or calling upon a select few whose names you know. Scattering questions also prevents mental loafing. Faster learners will dominate the class if you do not control student participation. Achieve a balance between calling on volunteer respondents and nonvolunteers. Allow only one student to answer at a time, but encourage all students to participate and volunteer answers. Although you may not call upon every student, let students know you expect them to take an active part.

The next step is to **comment** on the given answer or acknowledge the response. That

demands a careful and quick mental evaluation of the answer for accuracy and completeness. Provide feedback to the responder and class on the quality of the answer. When a student gives an incorrect answer, be critical only of the answer and not the student. Be sure to provide positive reinforcement for correct answers. The strength of the reinforcement depends on the difficulty of the question asked and the relative difficulty level for the student selected. Do not overdo the reinforcement. A simple "correct" or "thank you" may suffice.

The fifth and last step in the process, which is optional, is to **emphasize or repeat the answer** given. Avoid the tendency to repeat each answer as that has the effect of diminishing the student's response. Remember that the student's answer has an importance for the class as well as for you. Insist that answers be clearly spoken; heard by all; phrased intelligibly; and if possible, stated in the terminology of the lesson.

Other Questioning Techniques

The following techniques may be used in addition to or in conjunction with the five step questioning technique.

- Focus on the non-volunteer students; avoid eye contact with the active participants when asking a question. This will encourage the quieter students to reply. Assign a question to a student who does not have a hand raised; then provide appropriate recognition for that student's contribution. This technique will increase class involvement, attention, and participation because all students will know you may call on them regardless of whether they volunteer.

- Sometimes you may need to prompt a student who has given a weak, incorrect, or an "I don't know" response to your question. Help the student to arrive at a correct answer by asking questions that contain direct hints or clues to the correct answer. The key to effective prompting is to begin on a simple enough level that the student can relate to the material. The questions in the prompting sequence depend on the student's previous response. To begin the sequence, refer to material the student already knows.

  If the initial student response was partially correct, provide reinforcement by telling the student what was right. Then ask prompting questions until the student can give the entire correct response. If the student's first answer is "I don't know," rephrase the question or provide an example to eliminate any confusion, ambiguity, or vagueness in the original question.

  Acknowledge the final correct student response in the same manner as if the student had given the correct response the first time. Do not allow the prompting technique to result in student badgering.

- Seek further clarification when a student gives a response that is poorly organized, lacking in detail, or incomplete. Do not provide the student with any hints (prompts), clues, or additional information, but ask the student to do so. Request clarification when you believe the student has guessed at an answer by asking the student to justify the answer.

  Example: *"What else can you add?"*

- Use the reverse technique (answering a question with a question) to get students to think,

make associations, and discover the answer to their own questions.

Example: The student asks, *"Why did the Chief give that order?"* The instructor might respond, *"If you were in the same situation, what order would you have given?"*

- Use a redirected question to increase class involvement and provide recognition for students' answering questions. A redirected question occurs when you assign a question asked by one student to another member of the class for answering. **Note:** Never use this technique unless you know the answer and believe the student to whom you redirect the question also knows the answer.

- Use the technique of refocusing when you want the student to relate a correct answer to another topic. This technique helps students to consider the implications of their response within a broader framework by noting relationships with other topics studied.

SUMMARY

As an instructor, you give an impression to your class from your appearance, speech, habits, questions, and overall manner every time you present a lesson. This impression has a strong impact on the learning process. You must be an enthusiastic, positive motivator in your classroom. You control the energy and dynamics of the learning process. Remembering and applying effective communication and oral questioning techniques will improve your presentations and assist your students in learning the material.

CHAPTER 6

INSTRUCTIONAL METHODS

INTRODUCTION

The definition of instructional methods is "an educational approach for turning knowledge into learning." Instructional methods are the "how to" in the delivery of training. You have all heard the old saying that there is more than one way to skin a cat. Likewise, there is more than one method to use in training your students. The methods used in any learning situation are primarily dictated by the learning objectives decided upon by the course developers. In many cases a combination of methods are used to intensify the learning experiences. As an instructor, you need to understand the following methods and your responsibilities in using them: lecture, lecture with audiovisuals, lesson, demonstration, role-playing, case study, and discussion. The lesson method and the demonstration method are the two most commonly used in Navy training. However, for purposes of this chapter the methods are discussed as sequenced above.

LECTURE

The lecture method is an instructional presentation of information, concepts, or principles. Its main purpose is to present a large amount of information in a short period of time.

The lecture method is an efficient way to introduce a new topic of study or present background material students need for future classes. A lecture allows instructors to present a subject to a large audience because they use no visuals and there is no interaction between the students and the instructor. In fact, with the use of closed-circuit television, audience size is essentially unlimited. A lecture may be presented to thousands of persons at a time through the use of the closed
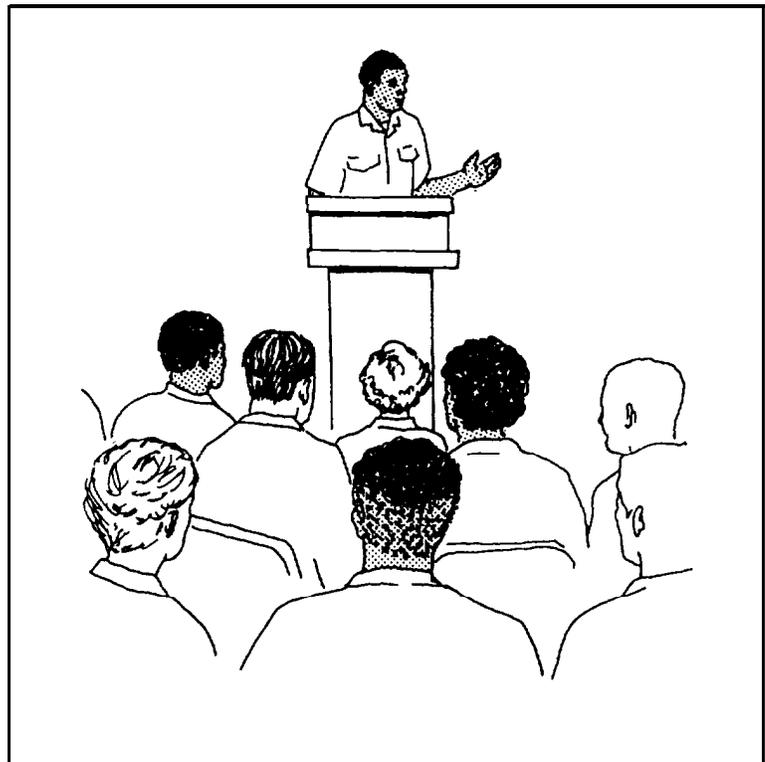
circuit television (CCTV) system.

Since the lecture method depends primarily on student listening and note-taking skills for the transfer of learning, you must have effective speaking skills. Your speaking skills can help you overcome some of the major shortcomings of no active student participation.

In preparing to deliver a lecture, set clear-cut goals and objectives. Make sure you have an in-depth knowledge of the subject matter, and find realistic examples and analogies to use with your explanations. As with any presentation, apply the laws of learning in your preparation and delivery.

Remember, the only feedback you will get is the nonverbal communications from your audience, if you can see them. Since your audience will quickly get bored with no active part in the instruction, your lecture should last no more than 30 minutes. Lectures should be short, well organized, and to the point.

LECTURE WITH AUDIOVISUALS

A lecture with audiovisuals includes visual and/or audio aids. Navy training frequently uses this instructional method of presenting information, concepts, and principles. As you learned in the "Principles of Learning" topic, most learning takes place through the sense of sight. It follows then that all students must be able to see the visuals being used, which will limit class size.

The visual aids you use can reduce the amount of explanation time required for students to grasp concepts, structures, and relationships. You simply cannot get some ideas across to students without the use of visual aids. For example, think how difficult an explanation of the operation of the internal combustion engine would be without the use of visual aids.

When you use the lecture with audiovisuals, you must prepare properly. That includes practicing with the actual visual aids in the place you will be using them. Plan your timing of the use of visual aids to keep the students' attention and to stress important points. Since your explanation of the visual aids will require you to use effective instructor techniques, decide which ones you will use. Then mentally rehearse those techniques and practice using the visual aids until you can present your lecture smoothly.

LESSON

The most often used method of classroom instruction within Navy training is the lesson method. The lesson method is interactive in nature. This method not only includes audio/visual aids, it involves the use of two-way communication. The lesson method involves exactly what its name implies--teaching a lesson; and teaching a lesson involves much more than just presenting information. When using the lesson method, you will follow a lesson plan written by curriculum developers. You will incorporate questions into your lesson to encourage student thinking and check for understanding throughout the lesson. Even though you have a lesson plan, you must anticipate student questions. That means you must have a thorough

understanding of the subject matter.

The lesson method involves the use of training aids to support and clarify the main teaching points of your presentation. Follow the same procedures used in the lecture with audiovisuals method: prepare, plan the timing of their use, and practice. To strengthen the effect of training aids, ask questions that require students to analyze and evaluate concepts and principles while referring to the audiovisual materials. Your use of audiovisuals with the lesson method dictates a limited class size of between 5 and 40 students. Less than five presents a problem in generating meaningful class participation. Besides the problem of poor visibility of training aids, more than 40 students presents the problem of keeping students actively involved in the lesson.
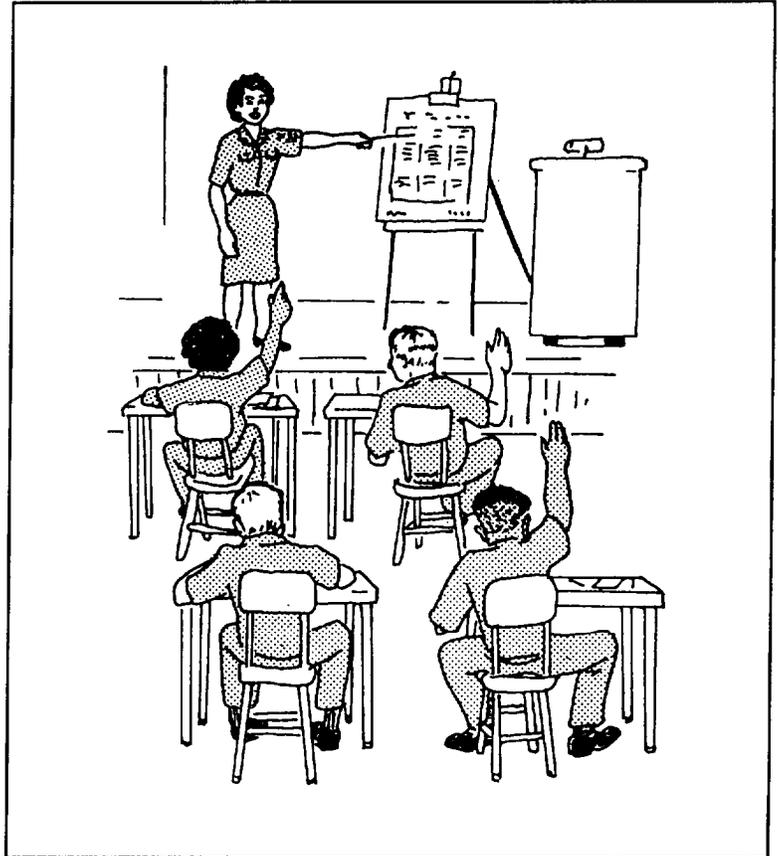
Because the lesson method of instructing is versatile, it may employ many different instructor techniques. Regardless of the techniques used, the lesson method involves three basic elements: the introduction, presentation, and review or summary. You have specific responsibilities for each element.

In the **introduction,** you must create interest in your topic and establish why students need to pay attention and learn the material. Begin by introducing yourself and telling about your background experience with the topic. Explain the objectives of the lesson and stress the importance of the students' being able to master them. Remember the laws of readiness and effect as you prepare your students for learning. Motivation is the key. If you can help students see how they will benefit from your training, you give them reason to pay attention and learn. Get the students to share experiences that show why they need to learn the material. That helps to establish their responsibility for learning. Ask questions to break down barriers early in the training session. Then establish ground rules by providing students with an overview of what you expect of them and how you will conduct the lesson. Last, make a smooth transition into your presentation.

The introduction only represents small amount of the time spent in a lesson, but its importance cannot be overemphasized. Students will form their first impression of you during your introduction. Since you only get one chance to make a first impression, make a good one. Use the Introduction to get the attention of and to motivate every student in your class.

The **presentation** is the part of the lesson in which you teach the lesson objectives. The lesson plan outlines the learning objectives and provides all the technical support you need for your presentation. As you use this material in your teaching, apply the law of primacy. Begin teaching the new information at a level that students can understand; move from the known to the unknown. Teach information in a logical sequence, making associations to previously learned information. Use examples and analogies to appeal to different learning styles and to reinforce the learning process. Actively involve your students throughout the presentation. Ask questions, plan group exercises, encourage discussions and note taking. Use training aids at appropriate times to support explanations and to stimulate and maintain student interest. Many times, the training aids will prompt student questions that can lead to a class discussion. While you want to encourage discussions, keep in mind that you have a limited amount of time to teach each lesson. Make effective use of the training time allotted. Don't get bogged down in discussions that do not relate directly to the lesson objectives. Control the pace of the instruction so that you will have enough time to properly close your lesson.

In the review or **summary,** recap the information taught in the presentation. Go over the main discussion points of your lesson; don't try to reteach it. Ask questions that help students mentally review what has been taught. As your students respond, reinforce important points (safety, steps of procedure, concepts, etc). Clarify and correct misconceptions and errors so that students don't leave the class with poor understanding. Finish your lesson strongly with positive statements about the importance of the topic, its relationship to the job, and the responsibilities of the students.

The lesson method is the most flexible and perhaps the most useful of all the methods in the training environment. The use of questions and visual aids contributes to maximum class activity and better maintains student attention. The student involvement builds teamwork and helps students understand their responsibility toward learning. The lesson method develops more positive attitudes and provides motivation, not only from the instructor's viewpoint but" from the viewpoint of the group itself. As a Navy Instructor, resist the temptation to lecture; instead use the positive aspects of active student involvement.

DEMONSTRATION

The basic, and most often used, method of instruction for teaching skill-type subjects is the demonstration method. It covers all of the steps your students need to learn a skill in an effective learning sequence. This method always includes a demonstration step and a performance step and allows you to use other steps as needed.

DEMONSTRATION STEP

Related to every Navy skill, mental or physical, is a body of background knowledge students must know to perform the skill properly. You can best teach some kinds of background knowledge in a standard classroom with adequate provisions for comfortable seating and for the display of training aids. You must present other kinds of background knowledge by actual demonstrations conducted in laboratories.

To present background knowledge and develop proper attitudes, vary your use of the learning techniques discussed in earlier chapters. Use the following techniques when giving an actual demonstration:

- Position the students and training aids properly. If you direct the students to gather around a worktable or a training aid, make sure every student has an unobstructed view.

- Show and explain the operations. Perform the operations in step-by-step order. Whenever possible, present the telling and doing simultaneously. Do not hurry; you will not normally emphasize speed in performing operations or in moving from one operation to another in the demonstration step. Make certain the students understand the first step before you proceed to the second, and so on. Repeat difficult operations. Pause briefly after each operation to observe student reaction and to check student comprehension.

- Observe safety precautions. Rigging a safety line, donning a safety mask, or tagging an electric cable may take a few more seconds, but you have not wasted the time. Instead, you have impressed the students with the importance of exercising extreme care in dealing with potentially dangerous equipment.

- Give proper attention to terminology. Call each part of a training aid by its proper name each time you call attention to it. Getting students to retain the correct nomenclature requires more than just mentioning the name. The following suggestions should prove helpful:

  — List the names of parts.

  — Refer students to any available chart that shows the parts and names of parts.

  — Conduct a terminology drill on the parts of the training aid while the aid is assembled or disassembled, as appropriate.

- Check student comprehension carefully. Ask questions during the demonstration step that require the students to recall nomenclature, procedural steps, underlying principles, safety precautions, and the like. Watch the class for reactions indicating lack of attention, confusion, or doubt; but do not depend solely upon visual observations.

When teaching skills, such as donning an oxygen breathing apparatus (OBA), in which a distinction between right and left is important; ask an assistant instructor or a well-coached student to help you. Ask the assistant to stand so that the class may see what he or she is doing. Then direct the assistant in performing the activity while you observe the reaction of the students.

Remember the law of primacy when performing the demonstration step. Always proceed from simple to complex in logical sequence; show the correct way to perform the steps the first time you demonstrate them. Along with teaching a skill, develop proper attitudes, such as the desire to perform safely, and the desire to exercise economy of time and effort.

REPETITION STEPS

When using the demonstration method, you will always provide a demonstration step and a performance step. Generally, you will include one or more repetition steps between the demonstration step and the performance step.

In deciding how many and what kinds of repetition steps you should include, consider several elements, the most important being the complexity of the skill. As a general rule, the more complex the skill, the greater the need for repetition steps. Also consider the nature of the skill. For example, some skills involve visual signaling in which speed is important. Other skills may involve ease of manipulation, conservation of materials, and safety. Always consider the ability of the students to acquire the skill and the amount of time available for training.

Four repetition steps used with good results in Navy schools are described in the following paragraphs:

Instructor repetition step

When using this step, repeat the job without noticeable interruptions, restating the procedure and the important safety factors as you perform the steps. This step has two important purposes: to show continuity (how the procedural steps follow each other under actual operating conditions); and to set standards of ease, speed, and accuracy. Related techniques of instruction are as follows:

■ Introduce the step properly. Motivate the students to pay close attention by explaining the nature of the step and by stressing the primary and secondary values.

■ Perform the job with the proper degree of ease, speed, and accuracy. Streamline your oral explanations to the point that they do not hinder your performance. The proper degree of speed is the standard speed you expect the majority of students to attain by the end of the scheduled practice period. A lower standard may fail to challenge the average and fast learners; a higher standard may cause many students to feel the goal is impossible to reach.

■ Avoid any activity that might break the continuity of your performance. For example, discussion or questions during this step may distract you as well as the students. However, give students an opportunity to ask questions at the conclusion of the instructor repetition step. You may need to include more than one instructor repetition step.

Student repetition step

In the student repetition step, select a student to repeat the job, restating the procedure and the important safety factors as the student performs the steps. This step will motivate the students by proving that they can do the job with the instruction given. It will show you those areas of instruction you need to strengthen.

One of the advantages of this step over an instructor repetition step is the great amount of student interest generated when a student, rather than the instructor, performs the job. The other students will put themselves in the selected student's place and perform the job mentally. Related techniques of instruction are as follows:

■ Introduce the step properly. Motivate the students to pay close attention by explaining the nature of the step and what the selected student must do. In teaching a mental skill involving computation, set up the problem as part of the introduction. Always use new values (not those used in your demonstration step) in the problem the student will solve.

■ Call upon a student from the average learner group to perform the job.

- Give the selected student adequate directions. These directions should include where to stand, what to do, and how to hold and manipulate training aids. Direct the student in the use of any other techniques that would benefit the class.

- Correct errors, but do so in a constructive fashion. Remember that the selected student is under some degree of mental pressure. Give the student an opportunity to correct his or her own errors before calling upon other students to help. Avoid the use of mechanical guidance. When the student has completed the job provide positive reinforcement and feedback.

Group performance repetition step

When using the group performance repetition step, repeat the job slowly, one step at a time, while the students observe and imitate you, one step at a time. Use this step for teaching simple and nondangerous physical skills, such as knot tying, sending semaphore, and performing the manual of arms. To use this step, you must be able to readily see the students' movements and they must be able to see yours. Also use it to teach mental skills, such as solving mathematical or maneuvering problems or filling in forms. The following are related techniques of instruction:

- Position the students properly. The position should provide an unobstructed line of vision both for you and for students.

- Introduce the step properly. Cover orally the general plan. Stress the need for close observation and exact imitation; the need for the students to keep in step with and not to get ahead of you; and the need for students to hold and manipulate training aids (if any are used) so that you can easily see each student's work.

- Perform the job properly, one step at a time. For the first repetition, explain the movements or operations as you perform them. For subsequent repetitions, you may use briefer directions. Use the techniqum discussed in the section on the demonstration step.

- Correct errors. Call attention to errors, demonstrate the correct movements, and then require the students to repeat the movements correctly. Remember that this is a repetition step only. It does not take the place of the performance step, during which students practice individually until they have attained the required standards of proficiency.

Coach-Pupil repetition step

The Coach-pupil repetition step requires you to divide students into small groups. If a group consists of two students, one (as the pupil) performs the job while the other (as the coach) checks the "pupil's" performance. After the pupil has acquired a certain degree of proficiency, they reverse positions. This step is particularly useful in imparting skills in which performance involves potential danger to personnel or equipment; for example, firing small arms or troubleshooting electronics equipment. You use a job sheet with this repetition step. The following are related techniques of instruction:

- Introduce the step properly. Assemble the students in one group, and give all necessary preliminary instructions. Include the location of each coach and pupil group in the training area, the time allowed each pupil to practice, and the specific duties of the coach and pupil.

- Position the small groups properly. Make a preliminary check to ensure that all groups are in their assigned positions and that the coach and pupil relationship is being observed.

- Maintain adequate supervision. Although theoretically the coaches are acting in the capacity of assistant instructors, they are still students. Maintain close supervision over all groups to ensure the students are observing safety rules and regulations and are making good use of the available time.

PERFORMANCE STEP

The performance step is the step in which the students practice under supervision until they have attained the required proficiency. During this step, the students apply what they have previously learned as a result of the preceding demonstrations. Consequently, the term *application* or *supervised application* may be used to identify the activity in which the students are engaged.

The performance step involves many kinds of application. Some skills (knot tying, welding, machinery repair) result in a finished product. The application of such skills consists of students practicing a procedure until they reach the required standards of ease and precision. Normally, speed is not important. Other skills (typing, visual signaling, radio code receiving) involve speed and accuracy. The application of these skills consists of students practicing until they reach the required proficiency in speed and accuracy.

Broadly speaking, the performance step involves several instructor duties. You must brief the students on the application activity, organize the students into working groups, supervise the activity, reteach as necessary, evaluate the results, and keep records. The following instructional techniques elaborate on these duties:

- Give the students a clear understanding of the work required of them. That includes definite answers to questions of what they must do and when, where, how, and why they will perform the required work.

  - WHAT must be made, done, or practiced? Tell the students exactly what they must do. For complex skills, supplement oral instructions with instruction sheets--job sheets for physical skills and problem sheets for mental skills.

- WHEN should the required work be done? Give specific periods in the class schedule, a specified time limit, or a specific date for work completion.

- WHERE should the required work be done? Tell students whether it is to be done in classroom, workshop, laboratory, or operating space.

- HOW should the required work be done? Explain the procedures to follow as well as the style of work, degree of neatness, or degree of proficiency required.

- WHY should the required work be done? Explain how the work will affect the mission of their unit and the Navy as well as their future career.

■ Provide adequate supervision. Make sure students follow the correct procedural steps, observe safety precautions, observe good housekeeping rules, take advantage of available time, and develop good work habits.

■ Reinstruct the students when necessary. Teach students to be self-reliant; but if a student gets stuck at some point, help the student get started on the right path. If Several students appear to be having the same difficulty, call them aside and reinstruct them as a group.

■ Evaluate the results. Determine whether or not the students have met the required performance criteria. Provide feedback to students regarding their performance in order to reinforce desired behaviors and correct areas that need improvement.

■ Maintain required progress records. Keep a record of the day-to-day progress of students, or give performance tests at periodic intervals and record the results. Even when the curriculum does not specify graded applications, keep some progress records.

Do not overlook the law of effect. Students naturally want to succeed, to know their progress, and to be recognized by those in authority over them. Encourage wholesome competition, and frequently advise the students of their progress.

ROLE PLAYING

Role playing requires the students to assume active roles in a simulated situation followed by a group discussion. It is particularly useful in teaching the development of leadership or counseling skills. However, it is also used in the training of skills such as darnage control where training simulators are used to create "real life" simulations.

Many Navy jobs, such as those performed by personnel in supervisory or administrative billets, require two different kinds of skill. One kind is specialized and pertains to the occupational specialty. The other kind is skill in human relations.

Personnel can acquire this latter skill only through practice. The practice may involve the handling of actual human relations situations during on-the-job training or practice in handling simulated human relations in a school. From a training standpoint, the simulated situation is preferable because instructors can note and correct student errors. Errors made in a real life situation usually result in serious consequences, such as failure to get the job done, dissatisfaction, blame, and even reprimand. The role-playing method, therefore, is designed to

impart human relations skills without the risk inherent in training by other methods.

To use this method, first describe the situation. Then select students to play the parts of the principal characters and give them a short time to think through what they are going to say and do. Next, let the students enact the situation. Finally, under your direction, allow the group to analyze the enactment. Help them to evaluate what the characters said and did, how they felt, how they reacted, and how they might have reacted differently.

Successful role-playing provides a chance for every student to take part in the lesson. It provides vivid experiences both for the participants and for the observers. Remember, however, that students can completely develop their human relations skills only through experience.

CASE STUDY

When using the case study method, focus the attention of the students upon a specific case, which can be hypothetical or real. Collisions at sea, fires, flooding, grounding, and aircraft casualties all make good case studies. You will normally present the class with a case study in printed form. You may also present case studies through the use of pictures, films, role-playing, or oral presentations.

After presenting the case study, divide the class into groups to analyze why or how the incident happened and how it can be prevented in the future. Have each group briefly explain their conclusions so that the class can learn if more than one correct alternative exists.

The main objective of a case study is for students to learn from experience and develop problem solving skills. Use it to help students identify safety violations that have led to incidents, accidents, or casualties and how they can be prevented in the future. Proper planning and organization are your keys to getting results in using this method of instruction.

DISCUSSION

The discussion is an activity in which people talk together to share information about a topic or problem or to seek possible available evidence or a solution. When you use discussion, make sure the seating arrangement allows all participants to have eye contact with each other. This necessarily limits class size.

This method involves an interchange of ideas by the students while you provide guidance. Used alone or in combination with other methods, it stimulates every student to think constructively. It also encourages students to share their personal experiences and knowledge with their classmates and to contribute ideas as a means of solving problems.

Initiating discussion and channeling students' thinking and responses along predetermined lines is called "directed discussion." This method is useful in teaching skills such as problem solving and understanding cause-and-effect relationships.

Directed discussion is often used in training that is conducted for the purpose of developing favorable attitudes toward a subject or situation. When that is your purpose, directed discussion

gives students more freedom to express their opinions. The success of directed discussion depends to a large extent on your leadership.

As in previous methods discussed, the success of a discussion depends on careful planning. Remember that some elements of the discussion method are included in every other method of instruction except for a straight lecture. Your goal in using the discussion method is to actively involve your students in the learning process. The old Chinese proverb, "I hear and I forget, I see and I remember, I do and I understand," certainly applies in the training arena. Strive for maximum student involvement.
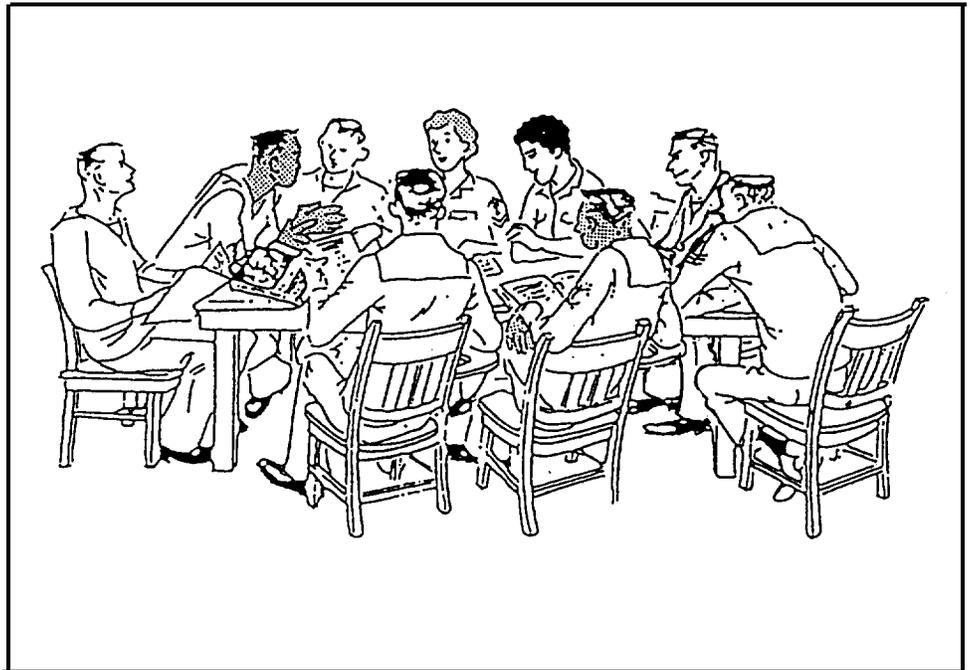
SUMMARY

Every course you teach will require you to impart knowledge to, and develop the skills of your students. In teaching those knowledge and skills you may use different instructional methods. A combination of methods allows you to add variety to reach the diverse group of students you may have. Your skill and flexibility in using the different methods will be the determining factor in how effective the training is in accomplishing the objectives of the course of instruction.

The learning objectives determine the primary method you will use in a given training setting. As a Navy instructor, you must be competent to use each of the methods dictated for your particular courses. That requires research, observation, and practice. You can never learn too much about training. Constantly strive for improvement and mastery.

CHAPTER 7

LEARNING OBJECTIVES

INTRODUCTION

What are learning objectives? Why are learning objectives used? Perhaps you have asked yourself these or very similar questions. An objective is a description of a performance you want students to demonstrate before you consider them competent. An objective describes an intended result of instruction. Objectives provide direction for instruction, guidelines for testing, and convey instructional intent. Objectives provide the foundation upon which course curriculum is built as well as the road map for the delivery of course content. They define what you will teach and how you will measure student accomplishment of learning objectives. In addition to having a knowledge of the purposes of objectives, you must have an understanding of the classifications, elements, and types of learning objectives.

LEARNING OBJECTIVE CLASSIFICATION

Instructional objectives are broadly classified as knowledge or skill objectives. The "Taxonomy of Educational Objectives," was developed to help identify and define instructional objectives. This classification system, is based on the assumption that learning outcomes can best be described as changes in student behavior. The taxonomy is divided into three main parts or domains: (1) the cognitive, (2) the affective, and (3) the psychomotor. This chapter concentrates on the cognitive and psychomotor domains because of their application to Navy training.

THE COGNITIVE DOMAIN

The cognitive domain contains the following six major categories. The example given in each category illustrates the level of understanding the student should be able to demonstrate as a result of the instruction provided.

Knowledge (Level 1)

Knowledge is defined as the remembering of previously learned information. All that is involved is the recall of the appropriate information. Knowledge represents the lowest level of learning outcomes in the cognitive domain. Objectives at this level require students to demonstrate their knowledge of the subject, but not their understanding of it.

EXAMPLE: State the three elements of learning objectives.

Comprehension (Level 2)

Comprehension is defined as the ability to grasp the meaning of material. These learning outcomes are more complex than simple recall of information and represent the lowest level of understanding.

EXAMPLE: Explain the use of oral questions in a lesson introduction.

Application (Level 3)

Application is the ability to apply learning in new and concrete ways. Application differs from comprehension in that application shows that a student can use (apply) learning correctly.

EXAMPLE: Demonstrate effective communication skills and techniques.

Analysis (Level 4)

Analysis is the ability to separate material into its component parts to arrive at an understanding of its organizational structure. Analysis requires a higher level of understanding than either comprehension or application. Learning outcomes that involve decision making, problem solving, or troubleshooting skills normally require this level of understanding.

EXAMPLE: Distinguish between appropriate and inappropriate motivation techniques.

Synthesis (Level 5)

Synthesis refers to the ability to reason from the general to the particular. Synthesis stresses creative behavior that combines many parts into a meaningful whole.

EXAMPLE: Prepare self, materials, and environment to deliver instruction.

Evaluation (Level 6)

Evaluation involves the ability to judge the value of material based on defined criteria. Learning outcomes of this category contain elements of all the other cognitive categories in addition to value judgments. This category represents the highest level of understanding within the cognitive domain.

EXAMPLE: Evaluate the effectiveness of another instructor's performance.

When using the objectives in this domain, you must make sure they are realistic. You must

make sure they reflect an accurate indication of the desired learning outcomes and, in fact, measure what you think they are measuring. You cannot measure level three outcomes by level one objectives. Nor can you measure student comprehension by asking "recall" level questions.

The responsibility for ensuring learning outcomes falls largely to you, the instructor. If the intended outcome of instruction is for the student to be able to "apply" theory, principles, or concepts (level three of the cognitive domain), then objectives must developed and taught at that level.

Domains involve a "hierarchy" of learning outcomes. Those outcomes allow you to provide instruction in a defined sequence. Thus, you present facts, methods, basic procedures, and terminology. Then you can measure your students' accomplishment of those objectives (by testing) before teaching higher levels of information.

The objectives show students what they are expected to learn from instruction. The objectives tell the instructor at what "level" to present information. If the purpose of a topic, as defined by the learning objectives, is to cover information at the knowledge level, be careful not to go into too much detail. Conversely, if the purpose is to teach students to apply the information presented, don't make the critical error of presenting information only at the knowledge level.

THE AFFECTIVE DOMAIN

The affective domain defines learning outcomes associated with emotions and feelings, such as interest, attitudes, and appreciation. Measuring the accomplishment of objectives in the affective domain is generally more difficult than in the other domains. In this domain we are not only interested in a "correct response" but also in determining the student's feeling, attitude, and interest toward the subject.

THE PSYCHOMOTOR DOMAIN

In Navy training a large percentage of course objectives are associated with the cognitive domain while a relatively small percentage are associated with the affective domain. Because of the nature of technical training, the Navy places a great deal of emphasis on learning outcomes of the psychomotor domain.

In the chapter on "Principles of Learning," you read about the ways people learn. They included imitation, trial and error, transfer, association, and insight. While none of these ways are unique to any one domain, imitation, trial and error, and transfer are closely associated with the psychomotor domain.

Students accomplish much of their skill learning by imitating behaviors they observe in others. They acquire some skills by trying something until they hit upon a satisfactory (though not necessarily correct) solution or outcome.

Transfer, you remember, is applying past learning in new ways. You cannot always provide students with skill training on actual equipments. Thus, you must strive to create realistic learning situations that will enable students to "transfer" that learning to their actual job.

The categories of the psychomotor domain are as follows:

Perception (Level 1)

Perception concerns the students' use of their sensory organs to obtain cues that guide their motor activity. It involves the students' learning from sensory stimulation (awareness of a sight, sound, or scent) and from recognition of the stimulus (identification of the object, sound, or scent) to perform certain actions.

EXAMPLE: Choose appropriate colored markers for lettering charts.

Set (Level 2)

Set refers to the student's being ready to perform a particular action. Perception of cues serves as an important prerequisite for this level. This category includes mental set (mental readiness to act), physical set (physical readiness to act), and emotional set (willingness to act).

EXAMPLE: Display proper student behavior in a learning environment.

Guided Response (Level 3)

This level involves the early stages of learning a complex skill. It includes learning through imitation and trial and error. Adequacy of performance is normally judged by another person or by the use of defined criteria.

EXAMPLE: Display proper instructor behaviors in a training environment.

Mechanism (Level 4)

This level concerns performance skills of which the learned responses are more practiced than in the previous level, but are less complex than the next higher level. You expect the student to be able to perform these skills with some degree of confidence and proficiency.

EXAMPLE: Use the chalkboard/visual aids panel as instructional media.

NOTE: Before going onto the next level, we must point out that this example objective could apply equally as well to levels two and three as it does to level four. Obviously, however, you would measure student accomplishment of the objective differently. You should expect much more of a student in the way of proficient performance at level four than at level two. That is why you need to understand the intended level of the instruction and the learning outcomes expected as a result of that instruction. While that is specifically the responsibility of curriculum developers, you, the instructor, must accomplish the desired training outcomes of the learning objectives.

Complex Overt Response (Level 5)

At this level within the domain, you should expect the student to demonstrate a high degree of proficiency. This level includes highly coordinated motor activities.

EXAMPLE: Demonstrate the procedure for disarming live ordnance.

Adaptation (Level 6)

Adaptation concern highly developed skills. Transfer learning is associated with this level in that students use previously learned skills to perform new but related tasks.

EXAMPLE: Adapt your instructional style to the appropriate level of the students.

NOTE: You are more likely to find behaviors at levels six and seven outside of the training environment because of their complexity. The example objective used in level six might be more appropriate to an evaluation program for experienced instructors than to students in an instructor training course.

Origination (Level 7)

Origination refers to a student's ability for new and creative performance after having developed skill. Learning outcomes at this level emphasize creativity in responding to a particular situation or specific problem.

EXAMPLE: Develop alternative strategies for delivering instruction.

The "Taxonomy of Educational Objectives" provides a three-domain system for the classification of instructional objectives. Each domain is subdivided into categories arranged in hierarchical order from simple to complex. These categories aid in (1) identifying objectives for an instructional unit, (2) stating objectives at the proper level for the defined learning outcome, (3) defining objectives in the most relevant terms, (4) checking the comprehensiveness of objectives, and (5) communicating to others the nature and level of intended learning outcomes.

LEARNING OBJECTIVE ELEMENTS

Learning objectives are composed of three elements: the behavior, the condition, and the standard. These elements define what the student will be able to do, under what conditions, and to what degree of proficiency.

THE BEHAVIOR ELEMENT

The behavior defines what the learner should be able to do as an outcome of training. It may include application of knowledge, accomplishment of a skill, or demonstration of an attitude. This element of the objective always specifies student performance. You must be able to observe the behavior and to measure what the student must do to demonstrate accomplishment of the objective. The significant parts of the behavior element are the (1) subject, (2) performance-oriented verb, and (3) object.

The student is always the subject. Commonly, the phrase: "Upon successful completion of this topic, the student will be able to . . ." introduces learning objective statements. When a topic lists several learning objectives, the introductory statement appears once with all of the objectives grouped beneath it.

The performance-oriented verb, or "action" verb, immediately follows the introductory statement and expresses the student performance required to demonstrate achievement of the objective. Learning objectives should contain only verbs that express active, measurable performance. Objectives should not contain verbs that are vague, such as "understand," "know," and "realize," as they are open to interpretation and can be measured in many different ways.

The object of a behavior element is a word or phrase that denotes what is acted upon. The object should include all modifiers needed to define what the student will be acting upon. For example, consider the following objective: "Upon successful completion of this topic, the student will be able to state the three elements of a learning objective." The "student" is the subject, "state" is the action verb, and the phrase "the three elements of a learning objective" is the object.

THE CONDITION ELEMENT

The condition basically defines aiding and limiting factors imposed upon the student in satisfying the performance requirements of the objective. This element may also define the degree of interaction with the training environment that the learner may expect. One of the major concerns in Navy training is to ensure that the conditions of the training environment approach those of real life. You may encounter objectives that contain several conditions or none at all. In some instances, objectives may contain no aiding or limiting factors, or the conditions of performance may be obvious. The objective should not include conditions that are not legitimate training concerns. The following are some examples of conditions:

. . . given a list of . . .

. . . without the use of references . . .

. . . provided with a Model X calculator . . .

. . . in a damage control wet trainer . . .

When combined with the behavior element, the condition element provides a clearer understanding of the learning outcome defined by the objective.

THE STANDARD ELEMENT

The standard specifies the criteria the students' performance must meet. Standards are normally defined as time, accuracy, quantity, speed, or some other quantifiable measurement. As with the condition element, whether the standard element appears in the objective depends on how critical it is to determining the students' accomplishment of the objective. If you must measure student accomplishment against some criteria, then the learning objective will include the standard element. If not included, the standard is assumed to be 100 percent. Examples of standards are as follows:

. . . 40 words per minute.

. . . plus or minus one gram.

. . . without error.

TYPES OF LEARNING OBJECTIVES

There are several types of objectives you may encounter due to different terminology between various development approaches. The types you are most likely to find, however, are course, terminal, topic, and enabling objectives.

Course Learning Objectives (CLOs). CLOs reflect the specific skills and knowledge required in a job. The CLOs serve as a guide for learning and as a guide for teaching. They also serve as a guide for the instructor in measuring student performance and in duplicating job requirements in the training environment.

Topic Learning Objectives (TLOs). TLOs support course learning objectives. They state performance (behaviors), conditions, and standards for knowledge and skills students must acquire as a result of satisfactorily completing the topic.

Terminal Objectives (TOs). A terminal objective is a specific statement of the performance expected from a student as the result of training. It expresses the behavior to be exhibited, the condition(s) under which it is to be exhibited, and the standard to which it will be performed. TOs directly support the course mission statement.

Enabling Objectives (EOs). An enabling objective is a specific statement of the behavior to be exhibited, condition(s) under which it is to be exhibited, and the standard to which it will be performed. Enabling objectives contain conditions and standards appropriate to the training environment, including knowledge and skills that support a terminal objective.

CONSTRUCTION OF LEARNING OBJECTIVES

Although the writing of learning objectives is not difficult, it can present a challenge. Developers must determine the desired learning outcomes and the conditions under which the student must perform. They must also decide how to determine when a student has satisfactorily met the training requirement. After that, the information is converted into words that convey the message. Remember the following information about the construction of

learning objectives:

- Learning objectives indicate what the student will be able to do as a result of training.

- The student is always the subject of the behavioral statement. The behavioral statement will also contain a performance-oriented verb and an object.

- Most objectives describe conditions that aid or limit performance.

- Standards describe the criteria of acceptable performance. They are usually expressed as time, accuracy, or quality. The lack of a stated standard implies that 100 percent accuracy is required.

Learning objectives of Navy training courses normally fall into the categories of knowledge, mental skills, or physical skills. These objectives all contain the same elements but are written to determine different levels of understanding or achievement. For example, the following three behavioral statements pertain to the same subject but are written to determine various learning outcomes.

Upon completion of this topic, the student will be able to:

- (Knowledge) State Ohm's Law for determining voltage in a series circuit.

- (Mental Skill) Solve for an unknown value in a series circuit.

- (Physical Skill) Measure current in a series circuit.

These statements all indicate WHAT the student is expected to be able to do as a result of training. When the CONDITION statements are added, the aiding or limiting factors to performance will be known:

- State Ohm's Law for determining voltage in a series circuit <u>from memory.</u>

- Solve for an unknown value in a series circuit <u>when provded with two known values.</u>

- Measure current in a series circuit using the Model XX <u>Multimeter.</u>

When the STANDARD is added to these statements, the objectives will be complete. They will tell the students exactly what they will be expected to do, under what conditions, and the criteria of acceptable performance:

- State Ohm's Law for determining voltage in a series circuit from memory. (The standard of 100 percent is implied).

- Solve for an unknown value in a series circuit when provided with two known values. <u>Problems must be solved accurate to two decimal points.</u>

- Measure current in a series circuit using the Model XX Multimeter. <u>Measurements must be within plus or minus one milliamp of those specified on Maintenance Care 1-2-3.</u>

These examples illustrate the development of learning objectives intended to measure various levels of student achievement. You should remember and apply the knowledge for which learning objectives are written so that you can achieve specific learning outcomes. As an instructor, you are in a unique position. You will be able to determine if training is producing students with the knowledge and skills they need to perform the jobs to which they will be assigned.

SUMMARY

Learning objectives provide the foundation upon which course curriculum is built. They define what you teach and provide the basis for measurement of student accomplishment. Instructional objectives are broadly classified as knowledge and skill objectives. These classifications are divided into levels of learning within the cognitive and psychomotor domains. Your knowledge of the classification, elements, types, and construction of learning objectives will clarify your role in conducting training and strengthen your effectiveness in delivering training.

CHAPTER 8

TESTING

INTRODUCTION

Navy schools use tests to determine whether or not a student has sufficient knowledge or skill to meet the requirements established by the learning objectives; that is, whether or not the student has learned the material. The philosophy underlying Navy testing is based on the achievement of learning objectives. Tests are given to determine if a student can demonstrate, in some measurable way, achievement of the objectives.

You will fill a critical role in the testing program for the courses you instruct. After curriculum has been validated, course personnel (primarily instructors) are responsible for the development of additional versions of tests, development of additional test items, and analysis of tests and test items.

You will be concerned with two methods of testing; knowledge and performance. Knowledge tests measure achievement of objectives through the use of test items written at the appropriate learning level. Performance tests measure skill acquisition by having the student demonstrate specific behaviors defined by the learning objectives. This chapter focuses primarily on the information you will need to develop knowledge test items.

KNOWLEDGE TEST ITEM DEVELOPMENT

The behavior, conditions, and standards specified in the objectives will determine the level of learning tested. You need to know how students will use this material in the job so that you can test the material to that level. Navy training uses five levels of learning which are based on, though not identical to, the learning levels defined in Chapter 7. Definitions and examples of the five learning levels are as follows:

Recognition. Recognition is the process of verbatim identification of specific terms, facts, rules, methods, principles, procedures, objects, and the like, presented during training. Students select from two or more alternatives to identify the information. For example, a test item may ask the students to identify a particular switch on a piece of equipment by matching its name to a diagram of the switch. That is a recognition test item if the student has been taught that specific information during training.

Recall. Recall is the verbatim remembering of specific terms, facts, rules, methods, procedures, principles, and the like. To correctly answer a recall test item, students remember and respond exactly as taught. A recall test item requires students to respond from memory instead of selecting the response from two or more alternatives. Listing the steps of a maintenance procedure and answering a completion question by labeling parts on a diagram are

examples of recall test items. Always test recall with closed book tests, otherwise you are not testing the students' ability to remember information.

Comprehension.   Comprehension is understanding what was taught rather than simply memorizing the words. It can be demonstrated by interpreting, explaining, translating, or summarizing information. When measuring the students' understanding of an objective, you must avoid the use of verbatim recall or recognition types of items. Comprehension requires you to paraphrase the material presented in the item rather than taking it word for word from the text. Asking a student to explain how a device works is an example of a comprehension item.

Application.   Application involves the ability to use acquired knowledge in a job-related situation. Application questions require students to demonstrate knowledge through mental skill exercises such as solving a computational problem or determining resistance values from circuit diagrams. You must use different problems or circuits from the ones you used in class to develop application questions.

Analysis/Evaluation.   Analysis involves the understanding of the elements of data and relationships among the data that make the meaning of information explicit. Evaluation involves the judgment of the value or the effectiveness of procedures or solutions based on data, criteria, and standards. For example, consider a question that asks the student to select the best approach to meet a stated objective. The question would require the student to know or determine which options would meet the objective (analysis) and which single option would be best (evaluation).

In developing knowledge test items, focus on the learning level being tested and write the test items to that level. You may use five types of knowledge test items: multiple-choice, true-false, matching, completion, and essay.

MULTIPLE-CHOICE TEST ITEM DEVELOPMENT

The multiple-choice item is the most versatile of the five types of test items. Use it to test all levels of knowledge except recall. The multiple-choice test item consists of (1) a stem containing the problem statement and (2) a list of possible answers (alternatives).

Typically, this type of test item contains four alternatives; however, depending on the nature of the content being tested, you can use more or less than four. Make one of the alternatives the correct answer to the test item and all of the others plausible alternatives.

The following sections present guidelines for stem construction, alternative construction, test item forms and formats, and common errors in item construction.

Stem Construction

A cardinal rule in test item development is to communicate effectively. Use the following guidelines as a checklist to make sure you properly write multiple-choice test item stems:

- Include all information, conditions, assumptions, and details required for the students to correctly answer the question without requiring them to refer to the alternatives.

- Phrase the stem positively.

- If you must use a negative, highlight it (in caps or underlined) so that the student will notice it and interpret the item correctly.

- Use clear, unambiguous wording so that only one answer is correct.

- Include words, phrases, and so on, that pertain to all alternatives rather than repeating them in the alternative.

- Omit information not essential to the interpretation of a test item.

- If the test item uses an illustration on a separate illustration form, refer to the illustration in the stem by figure number.

- Use complete sentences for test items in the form of questions and end them with a question mark.

- Position the completion of an incomplete statement test item near or at the end of the stem.

- Avoid the use of more than one completion position.

- Use the question form over the incomplete statement form except when it would make the test item grammatically clumsy or difficult to understand.

- Test only one idea or central thought.

Alternative Construction

You must exercise care when designing the alternatives for multiple-choice test items. Make sure the alternatives are plausible and fit well with the stem. The difficulty of the item will depend largely upon the alternatives. The more closely related the alternatives are, the more difficult it is for students to select the correct answer. A good rule is to develop alternatives based upon common misconceptions by students and inexperienced job incumbents. You may prepare alternatives based on how students might incorrectly manipulate terms, symbols, and the like. An additional rule is to look at the correct answer and determine how you may make it incorrect. Observe the following requirements in developing multiple-choice alternatives:

- Include only one correct answer.

- Use closely related alternatives.

- Use alternatives that are meaningful and not subject to automatic elimination because they are irrelevant or unrelated to the question.

- Do not use interrelated answers (e.g., "c" is true if "a" and "b" are false).

- Use terms with which students are familiar or that you can explain within the limits of the test item.

- Make all alternatives approximately the same length and of the same complexity.

- Do not use the words "always" or "never."

- Do not use alternatives of "all of the above" and "none of the above.

- Avoid using negative wording. However, if you must use negative wording, highlight it (e.g., in caps or underlined).

- Punctuate alternatives to conform grammatically with the structure of the item stem.

- If the stem is a question (i.e., a closed-stem) and the alternatives are complete sentences, begin each alternative with a capital letter and end each one with a period.

- If the stem is a question and the alternatives are incomplete sentences, begin each alternative with a capital letter and use no end punctuation.

- If the stem is an incomplete sentence (open-stem) with the response position at the end of the stem, begin each alternative with a lowercase letter (except for proper nouns) and end it with a period.

- With the incomplete sentence test item, make the wording of the alternatives grammatically related to that of the item stem.

- Randomly select the position of the correct answer among the alternatives to avoid any patterns that may bias the test.

- In items that involve numerical answers, arrange the alternatives in ascending or descending order.

Multiple-Choice Stem Formats

You will use two formats to construct the stem of multiple-choice test items; the *closed* and the *open.*

Closed stem format. You may write closed stem items as a complete statement or incomplete statement. The following is an example of a complete statement format:

EXAMPLE: Which of the following actions is required to remove a hinged
type 2 module on the MTRE Mk 7 Mod 2/4?

(a) Disconnect plates from the type 2 module.

(b) Insert "T" handle into quick release fasteners.

(c) Remove all Type 3 modules and connectors.

(d) Rotate hold down clamps to a vertical position.

The complete statement format has the advantage of forcing you to state the problem clearly in the stem. It also reduces the possibility of giving students grammatical clues. A disadvantage is that it may require lengthier responses. The following is an example of an incomplete statement format:

EXAMPLE: The setting of the AN/ABC-3Q flip-flop . . . indicates that
intent-to-fire has been energized.

    (a) B43

    (b) C21

    (C) C24

    (d) D32

When written as an incomplete statement, the completion position appears within the statement, not at the end of the stem. Although this form of test item is typically easier to write than complete statement stems, use them sparingly. They encourage lifting of test items verbatim from the material and encourage students to memorize answers.

Open stem format. This format uses an open-ended stem, which is an incomplete statement with the response position at the end of the statement. Each alternative provides a logical conclusion to the stem. Although incomplete-statement stems are typically easier to write than complete statement stems, they may cause you to avoid thinking about the question before you develop the alternatives. That may result in illogical and unrelated alternatives. Generally, the less similar alternatives are in content, the easier it is for students to select the correct alternative. The following is an example of an open stem test item.

EXAMPLE: When crimping both a stranded and a solid wire in the same
contact, the solid wire's position in relation to the stranded wire
is

    (a) above.

    (b) below.

    (c) beside.

    (d) diagonal.

Multiple-Choice Test Item Formats

You may construct a multiple-choice test item either as a question or an incomplete statement using the *standard* or *except* formats.

Standard Format. This particular format is straightforward and the easiest to develop. Use it when you only want students to select the correct answer from the four alternatives provided.

EXAMPLE: During the system verification test, what supplies voltages for
TVC position sensor tracking?

    (a) Minus 20 VDC precision power supply.

    (b) Self-test DC reference power supply.

    (c) TVC position sensor AC/DC converter.

    (d) Missile command module.

Except Format. Use the except format when three or more equally correct alternatives answer the question. This format requires students to recognize which alternatives are correct and to select the one that is incorrect. Always capitalize or underline the word "EXCEPT" in the stem. Use the "EXCEPT" format sparingly.

EXAMPLE: A specific torquing pattern and associated torque values can be
found in the SINS technical manual for all of the following
assemblies or components EXCEPT

    (a) An azimuth synchro assembly mounted to the stem.

    (b) A velocity meter mounted to the platform.

    (c) A replacement gyroscope mounted to the stable platform.

    (d) A platform stem mounted to the bedplate.

There are several common errors that you need to avoid when developing multiple-choice test items. Listed below are four examples of common errors:

Do NOT use similar wording in both the stem and ONLY the correct alternative. It suggests the correct answer.

Example of an inappropriate test item: (error underlined):

What is the purpose of the MARDAN maintenance test set?

(a) Monitors the C.P. operations.

(b) Furnishes power to MARDAN.

(c) Functions as a running time meter.

(d) Provides static testing of MARDAN.

Do NOT state the correct alternative in greater detail than the other alternatives. This practice often cues the correct answer.

Example of an inappropriate item (error underlined):

When all weapon power is removed from the PIP, which of the following statements is true?

(a) All power is lost to the MCC equipment.

(b) The MCC equipment is furnished power from NAV via the MSR.

(c) The DCCs have heater power applied.

(d) Power from the ship control center may be present in MCC since it only goes through the SHIP JP.

Do NOT use two or more alternatives that have the same meaning. It eliminates them as useful alternatives and simplifies the choice. In the following example, alternatives 1 and 2 have the same meaning. Thus, they reduce the number of realistic alternatives from three to one.

Example of an inappropriate item (error underlined):

What is the final step in performing post maintenance checks?

(a) Secure the front panel to the chassis.

(b) Make sure the front panel is secure.

(c) Set manual test switch to "OFF."

(d) Rerun the diagnostic tests.

Do NOT use alternatives that are included in other alternatives. In the following example, alternative 2 includes alternative 1. If alternative 2 is correct, then so is alternative 1.

Example of an inappropriate item (error underlined):

What is the operating time, in seconds, for the pressurization/compensation blow valve to roll from shut to open?

(a) 1 to 3

(b) 1 to 4

(C) 4 to 6

(d) 9 to 11

TRUE-FALSE TEST ITEM DEVELOPMENT

The true-false item is a two-response multiple-choice item. Use it only when one plausible alternative to an item exists. A major drawback to the true-false item is that it is susceptible to guessing. A student who does not know the correct answer has a 50-percent chance of responding correctly to the item. Use true-false items to test recognition, comprehension,

application, or evaluation. Use the following guidelines when writing the true-false test item.

True-False Test Item Format

The true-false item format is straightforward. Write the stem as a direct statement and label the two alternatives "true" or "false."

EXAMPLE: (TRUE/FALSE) When placing the CA in stowage, you must make sure the CA temperature is normal before securing heater power.

      a. True

      b. False

True-False Test Item Construction

Observe the following rules for constructing true-false items:

- Include all relevant information and conditions required for the students to correctly answer the item in the descriptive statement.
- Make the statement concise and clear. Make sure the proposition that makes the statement true or false is evident.
- Make sure the statement is clearly true or false.
- Place the TRUE/FALSE identification before the item.
- When possible, make a false statement consistent with a typical misconception.
- Do not use specific determiners (e.g., always, never, none, all, may, sometimes).
- Keep items short. Long items are harder to read and more difficult to judge true or false.
- When possible, use positive statements to minimize confusion.
- Do NOT lift test items verbatim from the curriculum.

MATCHING TEST ITEM DEVELOPMENT

The standard matching format consists of two lists containing related words, phrases, or symbols. Students must match elements on one list with associated elements on the other list based on specific instructions. Students pair the elements in each list and record the answer. Matching test items are ideally suited for testing recognition but may also test comprehension and application.

Test Item Format

The matching test item consists of a stem and two columns listed below the stem. The stem provides directions on how the student must match the items in the two columns. One column contains the questions or problems to be answered and the other column consists of the answers.

EXAMPLE: Using the FCDs in OP XXXX, match the circuit element listed
             in column B to the signal it generates in (column A). Write the
             letter representing your answer in the blank to the left of each
             signal in column A. You may use a letter in column B once,
             more than once, or not at all.

COLUMN A	COLUMN B
1.___DATA CHK NOT OK	a. Bl0
2.___DATA CHK OK	b. Bl3
3.___DRY RUN	c. Bl6
4.___EQ CONT RST 2	d. B46
5.___DATA CHK REQ	e. B49
6.___DATA CHK ALM	f. C30
	g. D56

Test Item Construction

Use the following guidelines when constructing matching test items:

■ Clearly specify in the stem (directions) how the students are to match the question and the answer.

■ Always place the questions in the left-hand column. Place answers in the right-hand column.

■ When feasible, use single words, numbers, codes, symbols, short phrases, and the like, in the answer list.

■ Make all answers relate to the question. That helps to prevent elimination of unrelated answers.

■ Specify in the directions how often students may use the answers.

■ When possible, arrange the answers according to some system (e.g., arrange numerical answers in ascending or descending order).

■ Place options on the same page. Students should not have to turn back and forth for the answer.

COMPLETION TEST ITEM DEVELOPMENT

The completion test item is a free response type of item in which the student must supply the missing information from memory. You may make the completion item a listing test item in which the student must supply the required list of part names, procedural steps, and so on, from memory. An advantage of the completion item over the multiple-choice or the true-false types is that it requires more than simple recognition of information. That eliminates the possibility of guessing.

Completion items are easy to construct. You will find them useful in situations in which

students must write a computational equation, define terms, list part names and functions, and the like. The disadvantage is that it is more difficult to score and must be accompanied by grading criteria.

Test Item Format

You can construct completion items using three basic formats:

- Students supply the word or phrase that completes the statement.

  EXAMPLE: The station clock and time display tests check the performance of the individual stages of the register designated . . .

- The student provides a definition, term, formula or similar response to a question.

  EXAMPLE: What is the name of the unit that detects angular motion and supplies an output through precession?

- The student supplies a list of procedures, steps, and so forth, from memory. This type of test item may be expressed in question or statement form.

  EXAMPLE OF STATEMENT FORM: In the space below, list in order the steps for placing the GA in stowage.
  EXAMPLE OF A QUESTION FORM: What are the steps for performing a MARDAN maintenance test?

Test Item Construction

Use the following guidelines when constructing completion items:

- Word the test item clearly and comprehensively enough to allow a student who is knowledgeable in the subject area to answer correctly.

- Make sure the missing segment of the incomplete statement item is important, such as a key element of a process or a piece of equipment.

- In incomplete statement items, do not omit too many words or the statement will become unclear and force students to guess.

- In incomplete statements, make sure the response position appears near or at the end of the stem. Items with the response position near the beginning are harder to read and take longer to answer.

- Provide sufficient space on the answer sheet for students to enter their response.

- Use a direct question to test for comprehension of technical terms or knowledge of definitions.

- Do not make the correct answer a "giveaway" word that could be guessed by students who do not really know the information. In addition, avoid giving grammatical cues or other cues to the correct answer.
- Avoid using statements taken directly from the curriculum.
- Develop grading criteria that lists all acceptable answers to the test item. Have subject matter experts determine the acceptable answers.

ESSAY TEST ITEM DEVELOPMENT

The essay test item requires the student to answer a question with an original written response. Use comprehension essay test items for testing the student's ability to organize data and express thoughts clearly in writing. Do not use them to test recall. Essay tests involve a relatively subjective scoring process since many factors may enter into the correctness of a response.

The disadvantage to essay test items is that they are time-consuming and difficult to score. The essay item must be scored by an individual knowledgeable in the subject area, unless only one basic response is possible to a given question or requirement,

Test Item Format

You can use an essay question to assess learning of a comparatively large body of information, as well as individual elements within that body. Use the following guidelines for formatting the essay test item:

- State clearly and precisely what type of response is required.
- If possible, place limits on the response by identifying the major points the students should address, the length of the response required, or time students may spend on the response.

    EXAMPLE: Compare the gas turbine and the 1200 PSI propulsion plants. Your discussion should include descriptions of the major components of each system. Partial credit will be given.

Test Item Construction

The following are examples of types of information for which you might want to use essay test items:

- A comparison or contrast of items and procedures.
- A decision for or against system or equipment operation.
- Relationships such as causes and effects.
- Illustration (sketch) of principles learned.
- Statement of purpose in the selection of a method or technique.
- Criticism of the adequacy or correctness of a diagram or procedure.

- Discussion of primary, alternate, or emergency procedures.

- Explanation or definition of tasks.

- Observation from illustration or operation.

- Evaluation of the appropriateness of a procedure or technique.

Model Answer or Grading Criteria

The essay test item must also contain a model answer you will use to grade the question. Observe the following guidelines in developing a model answer:

- Make sure the grading criteria identifies all of the essential information a knowledgeable student should be able to supply.

- Make sure it promotes objective scoring of the test item by establishing a standard answer from which to judge all others.

- Make sure it identifies how much each item or part of an item is worth.

Validation Of Test Items

Once you have constructed the test items, and before you actually assemble the test, validate the content of the items. Make sure they are technically and grammatically accurate, that they measure the objective, and that the items adhere to the guidelines presented in the preceding paragraphs. Have technically qualified SMEs perform the validation process. The individuals validating the test item should answer the following questions:

- Is the item technically accurate and is the correct response keyed?

- Is the item written to measure the objective?

- Does the item measure a knowledge critical to the task associated with the objective?

- Is the item written to the appropriate learning level?

- If recognition, recall, or comprehension of the knowledge being tested is required for competent performance on the job, is the item a closed-book item?

- If the knowledge being tested is normally looked up during performance of on-the-job task(s), is the item an open-book item and is the essential reference material supplied?

- Are all words spelled correctly? Is the grammar correct?

- Does the item meet format construction guidelines?

If the answer to any of the preceding validation criteria is NO, correct the discrepancy and revalidate the test item. If the item meets the validation criteria, then it should be approved for use.

Test Item Analysis

After the test items have been reviewed for content validity and administered to the students, statistics will be kept by the course personnel to complete the validation process. These statistics include discrimination; difficulty; and for multiple choice items, effectiveness of alternatives.

Curriculum development manuals NAVEDTRA 130 and 131, in addition to NAVEDTRA 135, contain additional information on tests and test-item analysis.

PERFORMANCE TEST DEVELOPMENT

The goal of many courses, as reflected in the learning objectives, is to teach students to perform skills needed on their job. Therefore, performance testing will constitute a significant portion of the testing for many courses. Objectives that require the demonstration of observable skills are tested by performance tests. Performance tests include the following considerations:

- Performance tests are simulated work situations in which students demonstrate their ability to complete procedures, produce a product, or a combination of both.

- Evaluation of performance usually involves the detailed observation and critique of a student's performance by a trained evaluator or instructor. The evaluation is supported by checklists or rating scales.

- The performance is observed and evaluated under the conditions and standards set forth in the learning objectives.

- A final product performance test involves comparing the student's efforts to an acceptable completed example.

- Skill objectives to be performance tested are identified and rated as to their relative importance in measuring student attainment of the related job skills.

Development of performance tests can be very involved. Performance tests consist of a simulated work situation in which the student performs a task based on a skill objective. Two types of performance tests are used to measure skill achievement: process and product. The development steps are essentially the same for both types with the exception of the final evaluation device. Some performance tests require a combination of both process and product measurement. NAVEDTRA 130 and NAVEDTRA 131 provide detailed information about the development of performance tests and their elements.

SUMMARY

Assessing a student's mastery of objectives in a knowledge test or skill acquisition in a performance test is a natural progression in the learning process. For the assessment to be accurate, test items should be directly related to the level of learning you want to measure and they should be validated and analyzed by subject matter experts. Instructor Training School uses both types of tests, and students are able to experience firsthand the benefits and limitations of each.

CHAPTER 9

COURSE MATERIALS

INTRODUCTION

Course materials are the tools used to lay the foundation, prepare the framework, and construct the bridge over which your students must pass to attain the knowledge and skills defined by the objectives of the course. Course materials include lesson plans, instruction sheets, and instructional media. You must be proficient in the use of all course materials to conduct effective instruction. These three, however, are the primary materials you will use in presenting instruction.

LESSON PLANS

The lesson plan is the most important document available to you as an instructor. Specifically, it is the blueprint that ensures instruction is presented in proper sequence and to the depth required by the objectives. The lesson plan accomplishes the following:

- Ensures you have considered all factors necessary to

  conduct a safe and effective lesson
- Guides you in conducting lesson activities
- Helps you maintain a constant check on your activities and

  your students' progress
- Standardizes instruction
- Informs training managers of what is being taught

The format of lesson plans differs somewhat depending on how they were developed. However, the major elements are common to most lesson plans you will use.

FRONT MATTER

The front matter of a lesson plan provides essential information regarding the course of instruction. You must read and understand this information to comply with the course developer's intent regarding instruction.

LESSON TOPICS

The lesson topics are the documents from which you conduct each lesson. They include required instructor preparation and an outline of the instruction. The lesson topic consists of

live basic elements. You must have a complete understanding of each element and its purpose in the lesson topic to be able to teach the knowledge and skills identified by the learning objectives. The elements and instructor actions are as follows:

- Introduction
- Presentation
- Review and summary
- Application
- Assignment

Introduction

The introduction is one of the most crucial elements of the lesson. During the introduction, you introduce yourself and the topic, state the learning objectives, make motivating statements, and provide a topic overview. As a part of the motivating statement, you should explain why the students need to learn the material and how they will apply it on the job. Besides telling students how and why the lesson is important, you must show your own motivation and enthusiasm toward the information. From the students' perspective, the introduction builds emotional involvement, arouses interest, promotes motivation, builds a sense of purpose, and focuses attention on the subject matter.

Presentation

The presentation element is the main body of the lesson. It is when you teach and otherwise explain the objectives of the lesson. Properly prepared and taught, the presentation serves to build student understanding of facts, procedures, rules, and principles.

Review and Summary

The review and summary element of the lesson provides you with an opportunity to summarize the topic's major points. You review the lesson to reinforce learning and to get valuable feedback on what learning has taken place. To get this feedback, you must ask questions that require your students to think and to respond beyond the recall level of learning.

Application

This element enables the student to apply the knowledge to a physical or mental skill. It allows students to practice their skills, use the material they have learned, and get feedback about their knowledge and skill. You evaluate the students' performance as they perform the skill. You provide reinforcement and feedback to each student by pointing out student errors and suggesting how to correct them. The application element is used with topics teaching a skill.

Assignment

You use the assignment element to provide students with practice of the lesson information or prepare them for the next lesson.

LESSON PLAN PERSONALIZATION

You will be provided with the approved lesson plan for the course you instruct. Add your own personalization to tailor the lesson plan to your style of teaching.   Lesson plan personalization provides the information you need to make the instruction uniquely yours without deviating from the approved course of instruction.

Types of Personalization

Personalization includes adding subject matter detail needed to cover the topic discussion points to the required depth. Also add notes to indicate when you want to stress a point, relate a personal experience, or use an example or analogy.

Subject Matter Detail. Use this type of information to provide technical data such as purposes, descriptions, facts, operations, and functions. Course reference materials provide this information.

Instructional Techniques. Use carefully written questions, well-planned visual aids, or additional student/instructor activities to enhance the lesson.

Personal Experiences. Relate your own on-the-job experiences to the lesson to increase student interest. Relating your personal experiences has the positive effect of reinforcing the practical application of the material. It also serves to increase student interest and motivation.

Examples and Analogies. When possible, support main points of the lesson plan by examples and analogies to simplify the concepts or ideas being taught. Use them as a part of your personalization of each lesson. For example, suppose your lesson is on the way sound waves travel through air, but your class has difficulty understanding that concept. Then perhaps an analogy such as "it is similar to the way ripples travel after a stone is dropped in water" will help them understand.

Steps of Personalization

When personalizing the lesson plan, follow these specific steps:
- Read the learning objectives to obtain an understanding of what the objectives are trying to achieve.
- Read through the entire lesson plan to gain an understanding of the contents.
- Research the reference materials to obtain subject matter detail needed to support the major discussion points.
- Observe a qualified instructor's presentation of the lesson and discuss it with him or her before personalizing the topic.
- Personalize the lesson plan. By understanding the requirements of the objectives, you can

put into your own words the information that will help you present the lesson.

- Update personalization as necessary. Review your lesson plan personalization for completeness and accuracy each time you teach.

The lesson plan provides you with the necessary support to effectively teach all required information.

INSTRUCTION SHEETS

In addition to the lesson plan, use instruction sheets to provide students with information or directions they need to complete a particular course of study. You can use them to convey to students certain detailed information, instructions for a task, or a learning activity they must undertake. You may use six types of instruction sheets: assignment, diagram, information, job, problem, and outline. When a course requires a large number of instruction sheets, they are normally combined into a document known as a trainee guide.

ASSIGNMENT SHEETS

Assignment sheets (fig. 9-1) are designed to direct the study or homework efforts of a student. Assignment sheets simplify the students' search for relevant data and direct their efforts to the proper source. The sheets may direct students to information contained in various manuals; reference documents; or, in some cases, other instruction sheets. Each assignment sheet is divided into four sections: the introduction, the topic learning objectives, the study assignment, and the study questions.

Introduction

The introduction provides information on the purpose of the topic,

Topic Learning Objectives

The assignment sheet lists the topic learning objectives, which are identical to the objectives in the applicable lesson plan.

Study Assignment

The study assignment tells the students what they must do to complete the assignment. If the assignment requires students to read the reference material, it identifies the paragraph, page, figure, and diagram numbers. If it requires some other activity, it gives students directions for completing the activity.

Study Questions

Study questions help students comprehend their assignment and check their ability to apply the information.

ASSIGNMENT SHEET 4-1-2-1

GENERAL, PHYSICAL, FUNCTIONAL, AND
INTERFACE DESCRIPTION OF THE AN/BRR-6

INTRODUCTION

This lesson will show how the AN/BRR-6 operates and its effect on the system as a whole.

TOPIC LEARNING OBJECTIVES

Upon successful completion of this topic, you will be able to:

1. State the functions of the AN/BRR-6.

2. State that the AN/BRR-6 consists of the following major functional areas. Include the function of each to support normal operations.

   a. Towed Buoy TB-17/BRR-6 (Bangor) or Towed Buoy TB-18A/BRR-6 (Kings Bay)

   b. Receiver Group OR-197/BRR-6

   c. Special Purpose Electrical Cable Assembly CX-13053/BRR-6

   d. Buoy Cradle MT-4905/BRR-6

   e. Reeling Machine RL-275/BRR-6

   f. Sensor Group OA-8906/BRR-6

   g. Buoy Door Sensing Switch

   h. Buoy Control Indicator C-0256A/BRR-6

   i. Antenna Control Indicator C-10257/BRR-6

   j. Buoy Depth Control Indicator C-10258A/BRR-6

   k. Relay Assembly RE-1115/BRR-6

   l. Interconnecting Box J-3461/BRR-6

   m. Towed Array Control Indicator Panel

3. Define the abbreviations and terms used with the AN/BRR-6 to support all operations and preventive maintenance.

4. State the operational characteristics and capabilities of the AN/BRR-6 to support all operations and preventive maintenance.

5. State the security requirements for the AN/BRR-6 to support all operations and preventive maintenance.

6. Describe all major and associated components of the AN/BRR-6 to support all operations and preventive maintenance. Include names, nomenclature, physical appearance, reference designators, locations, and construction features.

Figure 9-1. Example Assignment Sheet. (Sheet 1 of 3)

    a. Towed Buoy TB-17/BRR-6 (Bangor) or Towed Buoy TB-18A/BRR-6 (Kings Bay)

    b. Receiver Group OR-197/BRR-6

    c. Special Purpose Electrical Cable Assembly CX-13053/BRR-6

    d. Buoy Cradle MT-4905/BRR-6

    e. Reeling Machine RL-275/BRR-6

    f. Sensor Group OA-8906/BRR-6

    g. Buoy Door Sensing Switch

    h. Buoy Control Indicator C-10256A/BRR-6

    i. Antenna Control Indicator C-10257/BRR-6

    j. Buoy Depth Control Indicator C-10258A/BRR-6

    k. Relay Assembly RE-1115/BRR-6

    l. Interconnecting Box J-3461/BRR-6

    m. Towed Array Control Indicator Panel

7. Describe the controls and indicators directly associated with the AN/BRR-6 to support all operations and preventive maintenance. Include names, reference designators, positions, conditions, colors, locations, and functions.

8. Describe how the AN/BRR-6 works (functional operation) to support all operations and preventive maintenance. Include signal flow, sequential operation, and indications.

    a. Towed Buoy TB-17/BRR-6 (Bangor) or Towed Buoy TB-18A/BRR-6 (Kings Bay)

    b. Receiver Group OR-197/BRR-6

    c. Special Purpose Electrical Cable Assembly CX-13053/BRR-6

    d. Buoy Cradle MT-4905/BRR-6

    e. Reeling Machine RL-275/BRR-6

    f. Sensor Group OA-8906/BRR-6

    g. Buoy Door Sensing Switch

    h. Buoy Control Indicator C-10256A/BRR-6

    i. Antenna Control Indicator C-10257/BRR-6

    j. Buoy Depth Control Indicator C-10258A/BRR-6

    k. Relay Assembly RE-1115/BRR-6

    l. Interconnecting Box J-3461/BRR-6

    m. Towed Array Control Indicator Panel

9. Describe the functional interface between the AN/BRR-6 and related external equipments to support all operations and preventive maintenance.

    a. Power sources

    b. Input signals

    c. Output signals

Figure 9-1. Example Assignment Sheet. (Sheet 2 of 3)

STUDY ASSIGNMENT

1. Study EE125-FA-MMF-010/E110-BRR-6, FOMM Technical Manual Support Volume for Radio Receiving Set AN/BRR-6, Volume 1, glossary; tables 1-1 and 2-1 through 2-7; paragraphs 1-1, 1-2, 1-2.1 through 1-2.12, and 1-3 through 1-6; and figures 2-1 through 2-8, 5-1, and 5-3.

2. Study NAVSEA S9SSB-X9-SSM-900/(U)726V6P3B13 (SSM V76P3B13), Habitability, Ship Handling, and Emergency Systems Operating Instructions, 01637-11, paragraph 1-1.

STUDY QUESTIONS

1. How many units comprise the BRR-6?

2. What is the frequency range of the BRR-6?

3. What is the maximum speed allowable for towing the buoys'?

4. What is the maximum speed for launching a buoy?

5. Is it good practice to stream the buoyant cable and fly a buoy at the same time?

6. How many buoys are associated with each BRR-6?

7. What is the minimum depth for launching a buoy'?

8. How much cable does each cable have?

9. What does FOMM mean?

10. Which units of the BRR-6 are located in the IRR?

11. Which units of the BRR-6 are located in the Command and Control Center?

12. How many antennas are associated with the Towed Buoy?

13. What is the purpose of the Depth and Destruct Canister? Where is it located?

14. Which unit controls all the buoy electronics?

15. How close to the surface must the buoy be before Unit 10 can take over depth control?

16. How does Unit 9 (Towed Buoy Antenna Control Unit) communicate with the buoy electronics'?

17. Where are the tow cable cutters located?

18. Where does the BRR-6 receive its 115 vac 60 Hz power from?

19. Do the navigation center signals go through the AIS cabinet in the IRR?

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Figure 9-1. Example Assignment Sheet. (Sheet 3 of 3)

DIAGRAM SHEETS

Diagram sheets (fig. 9-2) provide students with illustrative material or with material to support other instruction sheets. They provide the student with a diagram, schematic, or illustration to eliminate the need for the student to copy such information during the lesson.

INFORMATION SHEETS

Information sheets (fig. 9-3) provide information related to subject matter contained in texts or references required for the course but not readily available to students. Each information sheet contains three sections: the introduction, references, and information.

Introduction

The introduction provides a general explanation of how or why an understanding of the covered material benefits the students.

References

The references section consists of a listing of all publications used to develop the information. Each reference fully identifies the document by number, volume, part, and complete title, as applicable.

Information

The information section is written to a level consistent with the course content. Reference is made to information in technical manuals or other approved publications.

JOB SHEETS

Job sheets (fig. 9-4) direct the students in the step-by-step performance of a practical task they will encounter in their job assignment. Job sheets provide a means for students to apply the knowledge they obtain during instruction through the use of technical documentation in performing the task just as they would on the job. The job sheet is made up of four sections: the introduction, required equipment, references, and job steps.

DIAGRAM SHEET 9 - 1 - 2

BLADED PROPELLERS
(Looking from Stern toward Bow)

CLOCKWISE

#2   #3

PROPELLER HUB

#1   #4

EYEBOLT
FITTING

4 - BLADED PROPELLER (TYPICAL)

CLOCKWISE

EYEBOLT
FITTING

#1

#5   #2

HUB

#4   #3
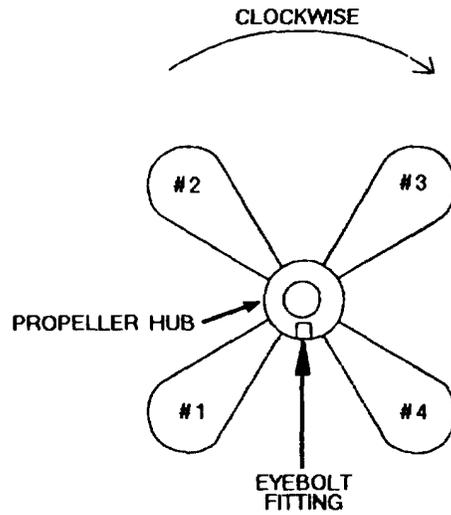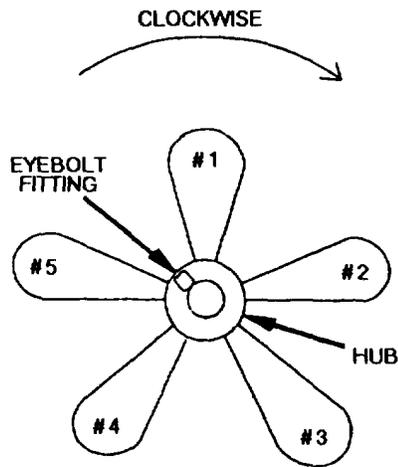
5 - BLADED PROPELLER (TYPICAL)

Figure 9-2. Example Diagram Sheet. (Sheet 1 of 1)

INFORMATION SHEET 4-1-3-1

SAFETY POLICY FOR CONDUCTING TRAINING

A.   INTRODUCTION

   1. This information sheet is designed to provide you with an understanding of Navy policy regarding training safey.

   2. This information sheet covers "Training Time Out" procedures that are to be used during the conduct of this course.

B.   REFERENCES

   1.   CNETINST 1500.20 series, Safety Procedures for Conducting Training in Arduous or Potentially High Risk Activities

C.   INFORMATION

   1.   The mission of the Navy dictates the need for an aggressive training program to prepare personnel to perform professionally and competently in many high risk activities under diverse and possible adverse conditions. Potentially high risk training includes, but is not limited to, training requiring exposure to potentially hazardous conditions involving the environment (water entry, temperature extreme-), atmosphere (fire fighting, use of solvents), explosives (weapons), electrical mechanical or hydraulic training devices or equipments.

   2.   It is the policy of the Chief of Naval Education and Training (CNET) to provide required training under controlled conditions, within practical and realistic limits, to obtain desired training outcomes while maintaining the maximum margin of safety. Included in this policy is the requirement that in the event a trainee is apprehensive of his personal safety while undergoing training, that concern shall be addressed.

   3. TRAINING TIME OUT (TTO)

   Any time a trainee or Instructor has apprehension concerning his personal safety or that of another, he shall verbally signal "TRAINING TIME OUT" to stop the exercise and receive rovide additional instruction as appropriate in accordance with CNEINST 1500.0 series.

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FIGURE 9-3. Example Information Sheet.

JOB SHEET 9-1-5

PLANNING INSPECTION STEPS

A. Introduction

Underwater hull inspection requires a thorough knowledge of the components and conditions peculiar to underwater operations. This Job Sheet will allow you to practice the step-by-step procedures required to conduct underwater hull inspections. A major benefit of this exercise is that you will have the opportunity to make the same decisions that will be required to perform this task in your duty assignment.

B. Equipment The following equipment is required:

1. Open circuit SCUBA outfit.

2. 12" rule

3. Tending lines

4. Hull inspection report

5. Underwater lights (night dives)

6. Chem-lite; one per buddy team (night dives)

C. References

1. NAVSHIPS Technical Manual, and Underwater Work Techniques Manual, Volume 2

2. Underwater Ship Husbandry Manuals, S0600-AA-010 series

3. U. S. Navy Diving Manual, Volume 1

D. Safety Precautions: Review TTO procedures in the Safety/Hazard Awareness Notice.

E. Job Steps. The following job steps apply:

1. At Diving supervisor's direction, dress in open circuit SCUBA following safety checklist in the Underwater Work Techniques Manual Vol. 2, page 3-2.

2. At Diving supervisor's direction, make proper water entry. Review safety checklist in the Underwater Work Techniques Manual, Vol. 2, page 3-3, before entering water.

3. At Diving supervisor's direction, descend on craft and make an unda-water inspection of the craft's hull. Review safety checklist in the Underwater Work Techniques Manual, Vol. 2, page 4-5 before entering water.

4. Upon surfacing, sound off, "Maximum Depth_____, Bottom Time_____." Failure to report this information will result in a failing grade for this Job Sheet.

5. At Diving supervisor's direction, make proper water exit.

6. Await further instructions from Diving supervisor.

7. Complete an underwater hull inspection report (one per buddy team).

8. Two percent will be deducted for each line pull signal not given or given incorrectly.

F. Self Test Questions:

Note: To be developed.

Figure 9-4.-Example Job Sheet.

Introduction

The introduction clearly and concisely describes the purpose of the job sheet and explains what benefits students can expect.

Equipment

The equipment section provides a complete listing of all equipment the students needs to accomplish the job.

References

The references section lists all publications students need to perform the job step portion. Each reference is identified by title, number, volume, and part, as applicable.

Job Steps

The job steps list step-by-step procedures for performing a job. Self-test questions provide students with a self-evaluation of their performance or comprehension of that job step.

PROBLEM SHEETS

Problem sheets (fig. 9-5) present practical problems requiring analysis and decision making similar to those encountered on the job. The problem sheet is an effective means of emphasizing the fundamentals of logical thinking. It is also an effective way to help students learn to problem solve and to help them gain practice in applying their knowledge to practical situations. Each sheet provides a clear statement of the problem, the conditions and parameters affecting the problem, and the directions and procedures for the solution to the problem.

OUTLINE SHEETS

Outline sheets (fig. 9-6) provide an outline of the major discussion points of the topic. The outline sheet allows students to follow the progress of a topic.

PROBLEM SHEET B000-1-24-2

DIAGNOSING GROUP PERFORMANCE

A. INTRODUCTION

The ability to evaluate student and group performance is developed by practice. The purpose of Problem Sheets B000-1-24-2 through 1-24-10 is to provide data for your consideration and allow you to determine why performance was poor. Using the data provided below, diagnose the probable cause(s) of poor group performance.

B. PROBLEM

1. Class No: 041

2. Test:

   a. New: #

   b. Existing:

3. Practice Time:

   a. Scheduled: N/A

   b. Receivcd: N/A

4. Testing Schedule

   a. Day of the week: Wednesday.

   b. Amount of time since last test: One week.

5. Prerequisite Skills: A check of the training background of the class revealed that the students came to class having mastered supporting objectives in previous lessons.

6. Test Item: Passing test score is 63. Test questions and objectives will not be available to you for analysis to determine test item quality, you will only have the data in Items 1-5 and the information in the chart below to determine test item quality.

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Figure 9-5.-Example Problem Sheet. (Sheet 1 of 4)

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TEST ITEM MISSED BY CLASS NO.041

	1	2	3	4	5	6	7	8	9	10
STUDENT 1	x		x			x			x	
STUDENT 2					x	x		x		x
STUDENT 3		x				x			x	
STUDENT 4				x	x	x				
STUDENT 5			x				x	x		x
STUDENT 6						x				
STUDENT 7	x	x		x		x				
STUDENT 8		x			x			x	x	
STUDENT 9			x			x	x			x
STUDENT 10	x		x			x	x			

TEST ITEM(S)	OBJECTIVE SUPPORTED
1,2,3	1.1
4, 5	1.2
6, 7, 8	1.3
9	1.4
10	1.5

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Figure 9-5.-Example Problem Sheet. (Sheet 2 of 4)

7. Instruction: N/A

    a.   Data:

From this instructor's previous class on same test as Class No._

	1	2	3	4	5	6	7	8	9	10
STUDENT 1										
STUDENT 2										
STUDENT 3										
STUDENT 4										
STUDENT 5										
STUDENT 6										
STUDENT 7										
STUDENT 8										
STUDENT 9										
STUDENT 10										

From another instructor's class on the same test.

	1	2	3	4	5	6	7	8	9	10
STUDENT 1										
STUDENT 2										
STUDENT 3										
STUDENT 4										
STUDENT 5										
STUDENT 6										
STUDENT 7										
STUDENT 8										
STUDENT 9										
STUDENT 10										

Figure 9-5.-Example Problem Sheet. (Sheet 3 of 4)

C. PROBABLE CAUSE(S) Put a check mark beside the probable cause(s) of the poor group performance of class No. 041.

  1. Incorrect Answer Key: _____

  2. Insufficient Practice: _____

  3. Poor Test Scheduling: _____

  4. Lack of Prerequisite Skills: _____

  5. Poor Test Items: _____

  6. Poor Instruction: _____

FOR TRAINING USE ONLY

Figure 9-5.-Example Problem Sheet. (Sheet 4 of 4)

OUTLINE SHEET 9-1-1

UNDERWATER HULL INSPECTION

A. **Introduction**

Underwater hull inspection involves the examination of the exterior underwater hull and components to determine the condition and needs for maintenance and repair. In this topic, you will be taught the components to be inspected and the procedures for inspection.

B.   Enabling Objectives:

7.1   IDENTIFY the components of the ship's hull in accordance with the Underwater Work Techniques Manual, Volume 2.

7.2   DESCRIBE the stages of growth commonly found on underwater hulls in accordance with the NAVSHIPS Technical Manual, Waterborne Underwater Hull Cleaning of Surface Ships, Chapter 081, and the Underwater Work Techniques Manual, Volume 2.

7.3   **STATE** the general contents of the Fouling Rating Scale, and the Paint Deterioration Rating Scale, in accordance with NAVSHIPS Technical Manual and Waterborne Underwater Hull Cleaning of Surface Ships, Chapter 081.

7.4   **DESCRIBE** the fouling areas of hulls in accordance with the NAVSHIPS Technical Manual, Waterborne Underwater Hull Cleaning of Surface Ships, Chapter 081, and the Underwater Work Techniques Manual, Volume 2.

7.5   **APPLY** the safety precautions associated with underwater hull inspections in accordance with the U. S. Navy Diving Manual, Volume 1; the Underwater Work Techniques Manual, Volume 2; and the NAVSHIPS Technical Manual, Waterborne Underwater Hull Cleaning of Surface Ships, Chapter 081.

7.6   PERFORM underwater hull inspections by day in accordance with the NAVSHIPS Technical Manual and Underwater Work Techniques Manual, Volume 2.

7.7   PREPARE the ship's hull inspection report in accordance with the Diving Training Standards.

C.   Topic Outline

 1. Introduction

 2. Ship Hull Components

 3. Stages of Sea Growth

 4. Fouling Rating Scales

 5. Critical Fouling Areas

 6. Planning for a Dive

 7. Use Repair Safety Checklist

 8. Perform Underwater Hull Inspection

 9. Hull Inspection Report

 10. Summary and Review

 11. Assignment

Figure 9-6.-Example outline sheet

INSTRUCTIONAL MEDIA MATERIAL

Some Navy instructors think of instructional media material (MMM) as being synonymous with video tapes. Others think IMM is an instructor crutch to relieve the burden of teaching, and still others consider IMM to be sources of entertainment. Just what is IMM? It is any device or piece of equipment that is used to help the student understand and learn. More specifically, IMM is a specially prepared chart, poster, illustration, video tape, slide picture, motion picture, model, mockup, recording, or piece of equipment that will assist student understanding and expedite learning. Showing is often easier than telling. Utilizing the sense of sight in parallel with hearing creates more effective instruction and greater retention of information by the students.

PURPOSES OF INSTRUCTIONAL MEDIA MATERIAL

The most important purpose of IMM is to increase student understanding. Other important purposes are to increase student retention, interest, and motivation and to provide uniformity in training.

Increases Student Understanding

It is possible and quite probable for a group of students to form entirely different ideas about the same thing as a result of a verbal description. Although you might describe in detail a piece of navigation equipment, such as a sextant, unless the students have seen one, they may develop a completely wrong idea about it. To form a more complete understanding, students need to see the sextant or a model of it to supplement your description.

Students may have problems understanding the proper relationships of the various parts of an object from a verbal explanation only. In the case of the sextant, you would have difficulty making students understand the functions and relationships of the parts without the use of a working model, cutaway, or series of charts. IMM brings subjects into perspective, produces accurate interpretations, and aids in the understanding of relationships.

Increases Student Interest and Motivation

IMM is far more effective in attracting attention and creating interest than a verbal description given without the use of an aid. Use IMM that will capture your students' attention and continue to hold their attention as the lesson progresses.

Students may not be attracted by a description of the various types of small arms; but their curiosity will be aroused immediately by the display of a rifle, pistol, shotgun, or carbine.

Focus the attention and concentration of the entire group on the specific part you are teaching about. Our minds tend to concentrate on the thing upon which our eyes are focused (sense of sight).

The satisfiaction of having done a job well is a feeling familiar to everyone. A similar reaction occurs in a training situation when a student feels the instruction is of definite value. The

student achieves a sense of personal satisfaction from the learning and feels motivated to learn more. You can achieve motivation early in a course of instruction by using IMM. The continued use of IMM to make the instruction concrete and meaningful will sustain student interest and motivation.

Increases Student Retention

Most of people forget what they hear in a relatively short time and have difficulty recalling the information accurately. On the other hand, things they see make a more lasting impression and help them to recall the object or process more accurately. Students can recall the mental images created by pictures and models more easily because of their increased interest at the time of reception. Students have a greater interest in the realistic and concrete than in the symbolic and abstract. The average student will easily forget your verbal explanation of how an internal combustion engine operates. However, an actual engine, a model, or a video tape shown with your explanation will make a fixed impression on students that is easier to recall.

IMM uses the multiple-sense approach to learning to increase retention. The following information supports the importance of using the sense of sight in learning:

STUDENTS WILL RETAIN

10% OF WHAT THEY READ

20% OF WHAT THEY HEAR

30% OF WHAT THEY SEE

50% OF WHAT THEY SEE AND HEAR

Increases Uniformity of Training

In classroom situations in which the instructor uses no aids, student learning depends on the presentation method. While some instructors may express themselves fluently, others may be somewhat inarticulate although they know their subject well. The use of standardized training aids makes the presentations more uniform.

CHARACTERISTICS

All IMMs must have certain characteristics to be effective and to support the purposes for using them. Course developers provide IMMs for established courses. Individual instructors or training sites should not develop their own IMM without the approval of the curriculum control authority (CCA). However, as a classroom instructor, you must know what characteristics IMMs should have. You can then recognize an IMM's shortcomings and recommend changes through the proper chain of command. All IMMs should be accurate, simple, visible, and necessary.

Accurate

First and foremost, visual aids must accurately depict the instructional intent. Use of

outdated or incorrect visuals defeats the purpose of displaying IMM. You cannot adequately explain away inaccuracies--students remember what they see more than what they hear. If your IMM is not accurate, none of the other characteristics will matter.

Simple

The simplest version that will do the job is best. Visual aids that contain unnecessary data confuse students and may arouse their curiosity in a direction contrary to the one intended.

Visible

The IMM must be visible for all students from all areas in the training environment. The two preceding characteristics (accurate, simple) will be of no value unless all students can see all aspects of your visual aid. The use of bold block letters best ensures readability. Readability also depends on the spacing between words and lines, which should be uniform and appropriate to the size of the lettering. You can estimate the size of lettering students can easily see. As a general rule, comfortable reading from the back of a 32-foot long room requires lettering at least 2 inches high.

Necessary

The IMM must support specific learning objectives. It must meet one or more of the purposes for using IMM. Do not use IMM as a time filler just because it is available.

USE OF IMM

When you are going to use IMM, you must plan in advance exactly how it is going to fit into your lesson. The techniques discussed in this section provide clear-cut guidelines for using instructional media materials.

BEFORE THE LESSON

Refer to your lesson plan to determine exactly what IMM you need to support each lesson. Obtain the IMMs you need and then preview each one you plan to use to ensure it is complete, readable, and in a useable condition. Organize the IMMs in the proper sequence. Make sure all needed supporting equipment is available and working. Make proper preparations for the use of IMMs so that you can detect possible problems and make alternate plans if required.

DURING THE LESSON

Display the IMM in a timely manner at the point called for in your lesson plan. Direct the students' attention to specific portions of the IMM either verbally or by using a pointer whwn necessary. After using it to support your lesson, remove it from sight. Use the IMM as naturally as possible. One of the greatest distractions in the classroom is an instructor who

fumbles around with the visual aids.

AFTER THE LESSON

You have a responsibility to your fellow staff members to return all IMMs to the proper storage area in an orderly, organized condition. If you find missing, defaced, or broken items, inform the proper persons to initiate action to correct any discrepancies.

INSTRUCTIONAL TECHNIQUES

The instructional techniques you employ in the use of IMM can greatly add to or distract from their effectiveness. This section provides suggestions on techniques to consider when using the IMM.

Slides

When you are going to use slides to support your lesson, first ensure all slides are in the carousel in the proper sequence, right side up, and not backwards. Preview the entire slide run to verify correctness before going into the classroom to teach. Preview in the classroom where you will teach using the slide projector you will use during the lesson. That allows you to become familiar with the operating controls and characteristics of the slide projector and the physical setup of the classroom. For best visibility, place the projection screen in a corner of the room and angle it toward the center. Check for visibility from all areas of the classroom.

During class, display slides as called for in your lesson plan. Explain each slide as you show it. When you finish your explanation, move on to the next slide or turn the projector bulb off. Use a pointer to direct student attention to specific information on the screen. Be cautious not to block the projector image.

Transparencies

Although transparencies are easy to use, many instructors have problems using them effectively. However, many of the same instructional techniques used for slides also apply to transparencies. Verify correctness before going into the classroom to teach. Become familiar with the operation of the overhead projector and the physical setup of the classroom. Be sure to position the overhead projector so that everyone can see the transparencies. Measure the required height of the screen and the distance of the projector from the screen. Then put a piece of masking tape on the floor so that you can quickly put the projector in the correct position before the class begins.

During your instruction, face the class while talking, but don't stand in front of the screen. Since transparencies can be seen in a regularly lighted room, don't turn off the lights. A darkened room creates an atmosphere in which people sit back and listen passively. You can, however, dim the lights slightly if you want. Keep your transparencies in focus. Place the transparency on the glass before turning on the projector. When showing the transparency, block off unnecessary detail with a piece of paper or a card.

Be sure to move the projector when you have completed showing the transparencies. Don't leave the machine in front of the class unless it is in use it becomes a distraction and a barrier between you and the learners. Don't leave a bare light projected on the screen. Don't be clicking the projector off and on excessively. Turn off the projector when finished. That ensures the class is not left hanging or distracted by a blank screen.

Films/Video Tapes

Motion pictures, which you can show using films or video tapes, present action and can recreate real or imagined situations. The film of the *USS Franklin,* which has been around since 1945, is still shown to make a vivid point about the importance of all-hands damage control training. Using motion pictures in your classroom is not the same as having your students watch a movie. You must view the entire motion picture before class to ensure you are aware of its intent and all key information contained in it. While previewing, become completely knowledgeable of all equipment controls and check for clear visibility from all seating areas.

Before you begin showing the film/tape to your class, introduce it by telling the students specifically what to look for. Develop questions for students to answer after viewing the film/tape. Placing these questions on the visual aids panel or easel chart further focuses student attention to the main thrust. Follow up the film/tape with a discussion of answers to the questions. Having students watch the film/tape is not enough. You must turn it into a learning experience by introducing and summarizing the film/tape for the students.

Newsprint And Wall Charts

Newsprint is another widely used flexible visual aid. It is a powerful tool when used well, but boring and a waste of time when used poorly. In the Navy classroom, you can use it effectively to record, illustrate, or organize information contributed by the class as a lesson takes place. By recording information on newsprint during a class discussion, you can increase class participation, student interest, and motivation.

If you area slow writer or poor speller, using newsprint in a spontaneous manner may hinder your ability to instruct. If you think it will hinder you, prepare or develop newsprint in advance. That allows you to have information neatly arranged and spelled correctly before the class begins. Using newsprint also allows you to maintain your position in front of the students without having to turn away from them to write. When prepared in advance and attached to an easel, you can turn pages over to reveal the new information as the lesson progresses. When using newsprint prepared in advance, make sure you have had ample practice before conducting the class. The following techniques will increase your effectiveness in using newsprint:

■ Add tabs to help you turn pages when using the easel.

■ Pencil your notes in lightly on the newsprint before you begin the   lesson.

■ Use brightly colored felt tip markers to write in the words.

■ Use dark colors for lettering

■ Use various colors to enhance your work and distinguish between   information

■ Leave the bottom third of your sheets blank to enable the students in the back of the class to see the entire sheet.

You can refer to newsprint at a later date as a review (such as an agenda). For future reference, display your newsprint in a corner of the room or by taping it to the side walls. Place information you have already covered in the back of the room for students to review during their break. Don't clutter the walls with too much information. Remove all unnecessary newsprint to prevent distractions.

You can also use wall charts. They are relatively easy to prepare, and those made of heavy poster board material last a long time. They are versatile in the classroom and easy to display on poster board clips or the easel. By attaching magnetic strips on the back, they easily adhere to most visual aids panels. You can use professionally prepared charts or make them yourself.

To make a wall chart, project an image from an opaque projector on the poster board; trace the outline and then apply colors, titles, and labels as appropriate. Make titles and labels of sufficient height for everyone in the class to see them.

Models, Mockups and Simulators

Models, mockups, and simulators make good sense for many training applications. They can save time and reduce hazards while providing hands-on experience. At the very least, they provide another form of learning reinforcement; at the most, they can help you illustrate and explain things that otherwise would be difficult or dangerous. The model introduces accurate and authentic realism into the learning situation. A model may be an enlargement, a reduction, or the actual six. A scale model represents an exact reproduction of the original. Some models are solid and show only the outline of the object they portray, while others are working models (mockups). Mockups are three-dimensional working models. Use them for training or testing in place of a real object that is too costly, too dangerous, or difficult to obtain.

A simulator is any device that has the form, sound, and even the appearance of the actual equipment. Simulators allow the students to gain "hands-on" experience. You normally use them when they are safer, less costly, or provide better instruction than the actual equipment. Simulators provide a realistic setting and permit a high degree of transfer of learning when the students switch to the actual equipment. Some examples are damage control wet trainers, flight simulators, and submarine control simulators.

Chalkboard/Visual Aids Panel

Two very important visual aids are the chalkboard and visual aids panel (VAP). They are probably the most frequently used visual training aids. You may use them at any time during a lesson to display terms, definitions, examples, problems, drawings, or diagrams. Since most chalkboards and VAPs have a metal backing, you may easily display information on them using poster board with magnets attached. Their flexibility allows you to adapt them to almost any instructional need. Since they are available in most classrooms, labs, and shops, they are an excellent tool for recording student responses, encouraging class involvement, and note taking. You can use the chalkboard/VAP when teaching almost any knowledge subject. The

chalkboard/VAP is essential when you are teaching mental skills involving computations and calculations.

When you plan to use the chalkboard or VAP, you need to take several steps before your presentation. Gather all materials required (chalk or markers, eraser, pointer, straight edges, etc.) for the chalkboard/VAP portion of the lesson and place them in the classroom. Be sure to clean the chalkboard/VAP before using it. Determine what parts of the lesson are important enough to emphasize with board work and will help students meet the objectives. Information should clearly relate to the objectives of the lesson. Also determine the amount of time the board work will take and how it will look when finished. Practice to ensure the information will fit in smoothly with the lesson. That will help you build confidence in using the board and reduce the amount of time you spend erasing and rewriting or redrawing information.

Develop chalkboard/VAP work logically. Sequence the work so the relationship of each new item to the previous is readily apparent. Develop concepts, procedures, diagrams and other information step-by-step and in the most logical sequence. Use the chalkboard/VAP information to develop one point at a time and progress from the simple to the complex. For example, a drawing to illustrate the operation of a basic steam cycle would consist of a boiler, turbine, condenser, pumps, and necessary steam lines. Introducing the students to one component at a time and gradually leading them to the completed cycle supports the law of primacy. It also develops better understanding of the relationships of the components. Write in straight lines. Avoid the natural tendency to write in either an uphill or downhill line. Use color with restraint and only to emphasize key information.

Besides using neat and legible penmanship, make sure you use correct spelling and grammar. Incorrect spelling and poor grammar are not only detrimental to the students, but may discredit you. Check for correct spelling and grammar during practice. To ensure proper spelling and grammar, use lesson plan notes or 3 x 5 cards that correspond with what you plan to write on the board.

Keep all writing or drawings during the lesson brief and to the point. Prolonged writing or drawing disrupts the flow of the lesson and may cause the students to become distracted or bored. Write a comment or draw a portion of a diagram on the board. Then turn to the class to solicit input and generate discussion about the information. This technique promotes good eye contact and encourages class participation.

When preparing a chalkboard/VAP drawing, use some type of drawing aid to keep the drawing as neat as possible. You might use compasses for drawing circles and rulers or T-squares for drawing straight lines. Use templates (shapes cut from poster board) that you can trace onto the chalkboard/VAP if you plan to use the drawing often.

If using a pointer to draw attention to a point or drawing, keep your arm straight while pointing. Consider the pointer as an extension of your arm. Use the hand nearest the object you point out instead of allowing your arm to cross your body. Stand to one side to prevent obstructing the students' view, and avoid talking to the chalkboard/VAP. When you talk to the board, students have difficulty understanding your words, and you lose eye contact. Pause frequently to maintain student attention. Explain what you are doing and check for student reaction. Additionally check the drawing or writing from the students' viewpoint.

During your presentation, keep the board as clean as possible. Erase all information you are not using. A cluttered board with scattered, unrelated materials hinders your presentation and student understanding. Put the eraser back in the dust tray when you finish making your point. Do not cause a distraction by carrying it around. Also, you should avoid walking in front of displayed information whenever possible. As with other forms of IMM, erase or cover the chalkboard/VAP work as soon as you finish the presentation to prevent it from becoming a distraction.

SUMMARY

To be an effective instructor, you must be familiar with the materials required to teach the course of instruction. You must use the approved lesson plan and personalize it to cover all discussion points exactly as you intend.   Use instruction sheets to reinforce your lesson presentations and to provide students with the learning opportunities provided by these materials. When using instructional media materials, prepare the materials in advance, practice your use of the materials, and follow proper techniques when using these materials in the learning environment.   The proper use of all course materials will greatly enhance your effectiveness as an instructor.

The effective use of IMM is not limited to any one phase of the instructing-learning process. You can use films, video tapes, slides, and transparencies to add interest as well as to supplement verbal explanations.   Posters and newsprint make discussions more realistic and interesting. Models, mockups or simulators enhance demonstrations. Remember, IMM give meaning to the instruction, but they cannot take the place of effective instruction.

CHAPTER 10

INSTRUCTOR EVALUATION

INTRODUCTION

Evaluation of instructors and curriculum for the purpose of improving the quality of training is an ongoing process. As an instructor, you should welcome every opportunity to be evaluated by others. Through this evaluation process, you will receive feedback on your strengths as well as those areas in which you may need improvement.

Basically, two types of instructor evaluations are conducted. Personnel considered to be subject matter experts (SMEs) in the area of instruction conduct evaluations to ensure the subject matter qualifications of the instructor. Trained instructor evaluators from the command conduct evaluations to ensure the instructor uses the most effective techniques to accomplish training.

Evaluations may be conducted on a scheduled or unscheduled basis. Each method of evaluation has its advantages and disadvantages. A scheduled evaluation allows the instructor to prepare for the evaluation. It may also allow the instructor time to prepare a "show" that is not typical of usual performance. Remember, evaluation is for the purpose of improving the training provided. You should not change your teaching style just because you are being evaluated. An unscheduled evaluation permits the evaluator to observe the instructor in a normal mode, which can result in a more realistic appraisal of the instruction. The drawback to an unscheduled evaluation is that it may cause an inexperienced instructor to feel threatened and thus to fail to perform as well as usual. Whether the evaluation is scheduled or unscheduled, you should never switch from your usual performance for the benefit of the evaluator.

PREPARING FOR EVALUATION

In preparing to teach, always ensure that your instructional materials are ready, that you have prepared yourself for the lesson, that the classroom or laboratory is prepared, and that all training equipment is available and in working order. Follow these steps each time you instruct. That will prevent you from having to interrupt the lesson because you forgot to properly plan and prepare.

View the evaluation process as an opportunity to gather information that will help you become more effective as an instructor. A preliminary meeting with the evaluator aids in the preparations to conduct the evaluation. Answer any questions they may have, and provide them with any materials they may need to conduct the evaluation.

Always be prepared for an evaluation, because you are always being evaluated when you

instruct--by your students. You need to know how the evaluation process works and what the evaluators will look for during the evaluation. This knowledge will help you refine your instructional techniques. It will also build your confidence because you will know what is expected of you.

EVALUATION CHECKLISTS

Evaluators use two separate checklists in evaluating instruction. These are the **Classroom Instructor Evaluation Checklist** and the **Laboratory Instructor Evaluation Checklist.**

The Classroom Instructor Evaluation Checklist is divided into four major categories:
- INTRODUCTION
- PRESENTATION
- INSTRUCTOR-STUDENT INTERACTION
- SUMMARY

The Laboratory Instructor Evaluation Checklist is divided into three major categories:
- INSTRUCTOR PERFORMANCE
- STUDENT PERFORMANCE
- FACILITIES

NOTE: Evaluators pay close attention to student safety and safe instructional practices in the laboratory.

CLASSROOM EVALUATION FACTORS

Familiarity with classroom evaluation factors will greatly benefit you in presenting your lessons. The following information presents those factors the evaluator will use to judge your performance and how you should conduct your instruction to meet that criteria.

LESSON INTRODUCTION
The introduction sets the stage for the lesson. You must present it in an interesting and motivating manner to prepare the students to learn. The following information provides the Factors used in the evaluation of your introduction:

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Display Course Name and Topic Title

■ Write this information on the board, or display it in some other manner.

Introduce Self

■ If you are meeting with the students for the first time, provide background information about yourself to establish credibility y with the students.

■ Present the introduction in an interesting manner.

■ Provide personal experiences that enhance the lesson and are directly related to the topic and/or objectives. One personal experience is generally adequate for the introduction.

Explain How the Material Fits Into the Overall Course

■ Explain the importance of the material not only to the course but to the students' future jobs in the fleet. This requires that you to be knowledgeable of material that has been previously covered in the course and what will be covered in future lessons.

Explain Objectives

■ Explain to the students that the objectives are not just for the lesson, but should also be the students' objectives. Simply reading or having the students read these objectives is not adequate.

■ Explain how each objective applies to what the students are about to learn and what the students must do to accomplish the objective.

■ Check with the students to determine their degree of understanding of the objectives.

Stress the Importance of Safety

■ Address safety at the beginning of each lesson, where applicable.

Explain The Importance of Satisfactory Performance

■ Stress to the students how important it is for them to achieve the objectives. Make the explanation on a positive note rather than stressing punishment.

Motivate Students To Do Their Best

■ Motivate the students to take pride in their work and to do their best.

■ Tell the students to ask questions and to get involved.

■ Make the students feel at ease about asking questions when they do not understand something.

■ Inform students how they will be able to use the information and benefit from it.

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LESSON PRESENTATION

The presentation deals with how well you are prepared to teach and how well you deliver the material. While personal characteristics will vary between instructors, everyone can use several tools of the trade to enhance the effectiveness of the lesson. The evaluator will judge your presentation based on the following factors:

Lesson Plan Personalization

- Personalize every lesson. Simply highlighting the existing material is not enough.
- Make sure you have the approval of your course supervisor or some other command-designated authority for your personalization.

Classroom And Materials Are Ready For Training

- Make sure the classroom is physically ready for the student to receive training; that is, seating arrangements are adequate; training equipment is in good working condition and available as required; materials such as transparencies, slides, and charts are accurate and in good working condition.

Information Technically Accurate

- Ensure the technical accuracy of information you present. Only an evaluator who is a subject matter expert in the area of instruction will complete this category.

Cover Major Discussion Points

- Follow the teaching points as approved in the lesson plan. Do not omit or skip material.

Do NOT Read From The Lesson Plan

- When you must read an important point, also teach it for emphasis.
- Use the lesson plan as a guide, NOT as a book to be read to the students. Excessive reading from a lesson plan may indicate a lack of preparation or confusion with the subject matter.

Transition And Chain Material Effectively

- Use transition statements that allow you to move through the lesson smoothly. Transitions signal to the students that you are progressing to a new point.
- Chain material (that is, tie it together) in a meaningful manner. Link material previously taught with the present material, or link the present material with what will be taught later.

Use Questioning Techniques Effectively

- Use questions to get students involved in the lesson.
- Phrase questions clearly and concisely.
- Use several different types of questions and questioning techniques during your presentation.
- Ask questions that promote thought and discussion.
- Ask questions that are not too simple or too complex.
- Allow adequate time for students to respond, and make sure you allow them to complete their response.
- Give complete and accurate answers to questions asked by the students.
- Maintain psychological safety in the classroom. Never embarrass a student who gives an incorrect answer. That discourages further participation.
- Do not answer your own questions.

When asking questions, make sure they accomplish your purpose for asking them. Many excellent reasons exist for using questions. They involve the students in the learning process and provide feedback on student comprehension of the subject matter. They also allow you to resolve areas of confusion and determine student accomplishment of learning objectives. **Properly used, questioning techniques are one of the most powerful tools available to you as an instructor.**

Use Training Aids Effectively

- Effectively use transparencies, wall charts, movies, films, slides, and the like, to receive the full benefit from them.
- Make the training aid visible to all students.

Maintain Proper Eye Contact

- Maintain eye contact with students to hold their attention and to gather nonverbal feedback from them.
- Avoid excessive reading from the lesson plan or talking to the board. As a general rule, you should talk only when looking at the students.

Display Enthusiasm

- Show a positive and enthusiastic attitude toward the subject.
- Use enthusiasm to maintain student interest.

Use Gestures Effectively

- Use gestures to stress a point.
- Use gestures that are natural and appropriate to the lesson.

Maintain A Positive, Professional Attitude

- Show a sincere concern for student comprehension. Never display cynicism, intimidate students, or use profanity or off-color remarks.
- Project professionalism by presenting a smart, concise, and meaningful presentation.

Use Time Effectively

- Stay on time throughout the lesson. That shows you are well prepared.
- Follow the instructional time allowed in the approved curriculum.

Avoid Distracting Mannerisms

- Avoid distracting behaviors, such as playing with a marker or pointer, sticking your hands in your pockets, or using gestures excessively.

Use Communication Skills Effectively

- Make sure your voice is reasonably pleasant (quality), easily understood (intelligibility), and expresses differences in meaning (variety). Quality includes not only the sound of the voice but the feelings projected when you speak. Intelligibility refers to clear articulation, correct pronunciation, and the use of correct grammar. Variety includes the use of variation in rate, volume, force, and pitch of your speech.

Maintain Flexibility

- Be open to discussions that enhance the lesson but do not lose sight of the lesson.
- Offer to meet students outside the classroom to discuss their thoughts when too much time is being spent in areas not related to the lesson.

Use Personal Experiences And Examples

- Use personal experiences that are related to the subject.
- Use examples throughout the lesson.

Explain Material Clearly

- Explain the material at a level the students can understand.
- If students appear to be confused, then you should explain the material in a different manner.

INSTRUCTOR-STUDENT   INTERACTION

This area deals with your effectiveness in keeping the students involved in the learning process. It also has to do with your ability to manage the instructor-student interactions.

- Establish and maintain student attention.
- Encourage student participation.
- Check for student comprehension.
- Establish and maintain proper instructor-student relationship.
- Stress the importance of the individual student while remaining clearly in control of the class.

LESSON   SUMMARY

The lesson summary is used to recap the major discussion points of the lesson and to ensure that the students understand the subject matter you have presented.

Summarize Learning Objectives

- Since the objectives are what the student is trying to accomplish, restate or paraphrase the objectives and discuss their relationship to the lesson material.

Summarize Lesson Properly

- Summarize the material in the lesson at least once to ensure student understanding, In some cases, you may need to summarize more than once. When or how often the summary is conducted is not the issue; rather, did you summarize and was the summary effective?
- Summarize the major teaching points of the lesson.
- When summarizing at the end of a lesson, use the major teaching points and objectives as an outline for the summary.
- Use summaries to maintain continuity within a lesson or to emphasize areas of importance.

Check Student Understanding

- Ask questions that help determine if the students understand the material.
- Ensure questions require students to respond at the learning level required by the objectives.
- Ask thought-provoking questions related to the objective(s).

Emphasize Safety

- Stress safety in the introduction, presentation, and summary when safety is a factor in the lesson.

LABORATORY EVALUATION FACTORS

As with classroom evaluation factors, you must be familiar with the evaluation factors used to evaluate laboratory instruction. Some of these factors are very similar to those used in the classroom. Others are specific to laboratory instruction. Safety is frequently of greater concern in the laboratory than in the classroom. You must ensure that safety is stressed and safety procedures adhered to. The laboratory checklist is used to evaluate the instructor, the students, and the facilities.

INSTRUCTOR PERFORMANCE

The *Laboratory Instructor Evaluation Checklist* contains the following factors concerning instructor performance.

Work Spaces/stations Ready For Class

Prior to the start of the laboratory session you should ensure that:

- Each work station is fully equipped.
- Equipment, tools and material are ready for use.
- Instructional materials are available and in usable condition.
- The laboratory area is clean and free of safety hazards.

Explain The Objectives

- Ensure students understand the objectives and all safety related considerations.
- Relate the objectives to the job sheet(s).
- Tell the students if the laboratory session is a test.
- In addition to explaining the objectives, you may want to provide partially finished or completed projects for the students to examine.

Review Safety/sanitation Procedures

At the beginning of the lab you should review the following procedures as appropriate:

- Training Time Out (TTO).
- Personnel and equipment safety procedures.

- Sanitation and hazardous waste disposal.
- If the laboratory extends beyond one training day, you should review the appropriate procedures at the beginning of each day.

Review Instructional Materials

- Ensure the students know what instructional materials are available and how to use them.
- Thoroughly explain the job sheet(s).

Relate Classroom Instruction To Laboratory Performance

- Explain to your students how the information presented in the classroom relates to the laboratory application.
- When conducting a demonstration, make sure all the students can see the demonstration. Emphasize safety at the appropriate points of the demonstration.

Issue Tools And Materials

- If tools and/or materials must be issued, ensure that you explain the procedures for issue and turn-in.
- Keep work areas free from unnecessary clutter with tools or materials.

Emphasize Safety

- Explain safety precautions and closely monitor students to ensure compliance with safety procedures.
- You must always follow safety procedures and may want to demonstrate the procedures for the students.

Assist Students As Necessary

- provide an environment for your students to learn by doing. Assist them as necessary, but do not do their work for them.
- Depending upon the type of training, it may be appropriate to use more capable or experienced students to assist other students. However, you must be particularly watchful to ensure that proper procedures are being followed. It would not be appropriate to have students aid other students when safety is involved.

Recognize Individual Student Differences

- Do not compare any student's performance with that of other students.
- Check for student understanding of the assignment.
- Provide assistance only as required.

- Maintain patience with students that are experiencing difficulty.
- Encourage students to do their best.

Provide Related Instruction When Needed
- You should provide instruction when it is needed in order for the students to accomplish the objectives.

Check Student Progress And Understanding
- Monitor students to ensure they are progressing through the assignment.
- Ensure that the students are using the job sheet(s) and related instructional materials correctly.

Ask Thought Provoking Questions
- Use thought provoking questions to cause the students to think about what they are doing and why they are doing it.
- Use questions to check for student understanding. Also, questions are effective in helping students who are experiencing difficulties.

Critique/Review The Laboratory Session
- Conduct a critique of the training session by emphasizing the objectives and how they were accomplished.

Manage Time Effectively
- Ensure your students are progressing through the assignment in an appropriate period of time.
- Provide assistance to students who are experiencing difficulties which may prevent them from completing the assignment.

Lesson Plan Personalization
- Your lesson plan personalization must be current and complete.
- Use your lesson plan to ensure that you cover all objectives and major teaching points.

STUDENT PERFORMANCE

In addition to evaluating your performance, students are observed because their performance provides important information on the quality and safety of the training. The following Factors are used in this area:

Appeared To Understand The Assignment

- Students should be able to independently start the assignment after you have provided the necessary instructions.

- Students should complete the assignment correctly.

- Students should be able to complete the assignment without frequently having to ask questions or request your assistance.

Used Instructional Material

- You should ensure that the students are correctly using all of the instructional materials provided.

Sought Help When Needed

- Your students should be encouraged to request your assistance when it is required.

- Monitor your students to ensure they are progressing through the assignment without difficulty.

Observed Safety/Sanitary Precautions

- Students should observe all applicable precautions. Monitor the students to ensure they follow the prescribed procedures.

Participated In The Critique/Review

- Encourage student participation. Ask them questions and invite them to ask questions. You may use the redirected questioning technique to encourage student participation.

FACILITIES

The final area of the laboratory evaluation checklist is the facilities. The condition of the training facilities are vitally important to safety, quality of life, and student learning. Always check the facilities prior to use and ensuring that they are ready. You should ensure that the lighting and ventilation are adequate. Equipment and tools must be properly maintained and prepared for the training session. Check to ensure that safety precautions are properly posted. Finally, ensure that all equipment safety devices are in place and in good condition. Safety is the number one concern in the training environment. Report and ensure correction of any unsafe condition prior to conducting training.

SUMMARY

Instructor evaluation is an important aspect of the Navy training program. Along with evaluation of curriculum and all other elements of the overall program, instructor evaluation contributes significantly to the improvement of training.

You will be evaluated in the performance of your duties as an instructor. You may also be involved in the evaluation of others. In both situations, use these opportunities to learn new ways of making your instruction, and that of your peers, more efficient and effective.

ASSIGNMENT 1

Textbook Assignment: Chapter 1, "Navy Training"; chapter 2, "The Navy Instructor"; and chapter 3. "Motivation," pages 15 through 18.

Learning objective: Identify the purpose of the Navy Training program.

1-1.   What is the primary purpose of the Navy training establishment?

1.   To coordinate training
2.   To monitor the quality of education
3.   To maintain close liaison with the Deputy Chief of Naval Operations
4.   To provide the operating forces with trained personnel who can maintain fleet readiness

1-2.   Two-thirds of all people in the Navy are involved in some kind of training at any one time.

1.   True
2.   False

1-3.   What is the purpose of the Navy's training system?

1.   To determine training requirements and develop training
2.   To determine the purpose of training within various commands
3.   To acquaint instructors with details of the Navy's formal training system
4.   To ensure a systematic approach for determining what to train and how best to accomplish that training

1-4.   How does the Navy ensure that the training provided meets the needs of its operational forces?

1.   Through the preparation of training
2.   Through the availability of training
3.   By using a systems approach to training
4.   By using a formal delivery system

Learning objective: Identify the procedures for training development.

1-5.   Once a training requirement is validated, curriculum managers determine if the required training is available.

1.   True
2.   False

1-6.   During training development, the functional commander and the training activity must take which of the following actions?

1.   Set course outcomes
2.   Establish uniform training
3.   Submit a course description
4.   Determine the training requirements

1-7. What is the goal of the systems approach?

1. To achieve uniform delivery of training
2. To evaluate the training program
3. To establish uniform training
4. To manage technical training

1-8. The responsibility of instructors of Navy training courses is to develop curriculum.

1. True
2. False

1-9. Who is responsible for the development of new course materials?

1. Program supervisor
2. Course supervisor
3. Course director
4. Program manager

Learning objective: Identify the responsibilities for training management.

1-10. Which of the following policies or conditions determines Navy training requirements?

1. Chief of Naval Education and Training policy
2. Chief of Naval Operations policy
3. Needs of the fleet
4. New technology

1-11. What is the primary concern of training management?

1. Safety of students and staff
2. Classroom management
3. Filling of billets
4. Needs of students

1-12. The principles and procedures the instructor adopts in classroom management contribute to the success of the instruction.

1. True
2. False

1-13. Who is responsible for the evaluation of training?

1. Instructors only
2. Commanding officer only
3. All members of the command
4. Training administrators only

1-14. Who has responsibility for classroom management?

1. Instructors
2. Quota control
3. Course supervisors
4. Training administrators

Learning objective: Identify the procedures for the evaluation of training.

1-15. Training evaluation is divided into which of the following categories?

1. Feedback and evaluation
2. Instruction and course
3. Internal and external
4. Formal and informal

1-16. Which of the following elements is NOT part of the internal evaluation of a course of instruction?

1. Fleet feedback
2. Safety programs
3. Test-item analysis
4. Attrition and setback data

1-17. In the training chain, which of the following people is the most essential link?

1. Commanding officer
2. Training manager
3. Instructor
4. Student

1-18. Which of the following factors will
NOT help you attain the vast store
of knowledge required in your role
as an instructor?

1. Study
2. Practice
3. Attitude
4. Research

1-19. The Navy training system is a
relatively simple system.

1. True
2. False

_____

Learning objective: Determine
the responsibilities of the Navy
instructor.
_____

1-20. Which of the following terms
identifies an effective instructor?

1. Subjective
2. Indurative
3. Creative
4. Rigid

1-21. Which of the following topics is
NOT included in Navy instructor
training?

1. Communications
2. Correspondence
3. Motivation
4. Testing

1-22. The art of instruction cannot be
developed; it must be taught.

1. True
2. False

1-23. Instructor training includes the
practice of which of the following
skills?

1. Teaching
2. Counseling
3. Analyzing data
4. Developing curricula

1-24. Which of the following traits is
NOT indicative of an effective
instructor?

1. Ability
2. Knowledge
3. Personality
4. Self-actualization

1-25. As an instructor you should conduct
training to meet the needs of the
individual, not the Navy.

1. True
2. False

1-26. You are likely to be assigned
curriculum development duties as an
instructor.

1. True
2. False

1-27. Which of the following objectives
should training accomplish?

1. Attain personal goals
2. Produce changes in opinions
3. Acquire knowledge for its own
sake
4. Develop knowledge, skills, and
attitudes

3

1-28. When students understand the need to learn, they are more likely to give their full attention to your. instruction.

1. True
2. False

1-29. An instructor should have which of the following basic types of abilities?

1. Natural
2. Artistic
3. Analytic
4. Instructional

1-30. A Navy instructor should exhibit leadership by what method?

1. Indifference
2. D i r e c t i o n
3. Coercion
4. Example

1-31. What is your greatest source of information in helping students learn?

1. Experience
2. Student records
3. Previous education
4. Interaction with students

1-32. Job experience and formal training are sufficient preparation to instruct others.

1. True
2. False

1-33. Displaying a professional attitude as an instructor causes students to

1. want to know you better
2. feel you are one of them
3. respect you as an instructor
4. have tolerance for long lessons

1-34. Which of the following rules of conduct should an instructor follow?

1. Use sarcasm
2. Don't bluff
3. Be emotional
4. Use profanity sparingly

1-35. Which of the following personal traits could cause you to lose the respect of your students?

1. Sarcasm
2. Patience
3. Sincerity
4. Professionalism

1-36. You should view your students as being immature and adjust your instruction accordingly.

1. True
2. False

1-37. Which of the following responsibilities do you have to your students?

1. Set a good example
2. Teach experiences
3. Show disinterest
4. Be impatient

Learning objective: Identify training safety and security responsibilities.

1-38. Which of the following commands issues policy to ensure safety in the training environment?

1. NAVEDTRACOM
2. COMTRALANT
3. CNTECHTRA
4. CNATRA

4

1-39. Which of the following factors is an integral part of the Naval Education and Training Command?

1. Safety
2. Control
3. Security
4. Leadership

1-40. When teaching, you should disclose classified information to which of the following personnel?

1. Any enrolled personnel
2. Personnel properly cleared only
3. Personnel with a need to know only
4. Personnel properly cleared with a need to know only

1-41. Which of the following elements of curriculum maintenance is NOT affected by a technical change?

1. Lesson objective
2. Course content
3. Resources
4. Revision

1-42. Which of the following curriculum modifications will change course length and/or resources?

1. Change
2. Revision
3. Interim change
4. Technical change

Learning objective: Specify the responsibilities of the Navy instructor in preventing fraternization and sexual harassment.

1-43. Fraternization is NOT a factor in personal relationships between which of the following personnel?

1. Officers and enlisted
2. Instructors and students
3. Civilians and dependents
4. Seniors and subordinates

1-44. Which of the following processes provides for the ongoing evaluation of training?

1. Technical feedback
2. Course validation
3. Surveillance
4. Revision

1-45. Instructors must account for classified material at all times.

1. True
2. False

1-46. Which of the following practices undermines the integrity of the instructor-student relationship?

1. Frequent testing
2. Disciplinary action
3. Giving negative feedback
4. Engaging in sexual harassment

1-47. Which of the following acts does NOT constitute sexual harassment?

1. Request for sexual favors
2. Unwelcome sexual advances
3. Verbal or physical conduct
4. Dating

1-48. Which of the following personnel is/are responsible for the prevention of sexual harassment?

1. Instructors only
2. Students only
3. Officers only
4. All personnel

1-49. Verbal or physical contact of an offensive nature is considered to be

1. sexual harassment
2. appropriate
3. acceptable
4. a joke

1-50. What is the traditional term used to identify personal relationships that violate the customary bounds of acceptable senior-subordinate relationships?

1. Appropriate behavior
2. Sexual harassment
3. Fraternization
4. Misconduct

Learning objective: Identify the various procedures for motivating students.

1-51. Which of the following statements is correct concerning motivation?

1. All behavior is motivated
2. Test failures are caused by insufficient effort
3. Lack of participation indicates a lack of motivation
4. Incomplete homework assignments indicates a lack of motivation

1-52. As a Navy instructor you can increase a student's desire to learn by creatively using which of the following techniques?

1. Disciplinary
2. Motivational
3. Questioning
4. Application

1-53. What is the greatest challenge for an instructor in motivating students to learn?

1. Teaching only approved material
2. Maintaining a high degree of interaction
3. Teaching the subject in an interesting manner
4. Getting students involved and interested in learning

1-54. To provide appropriate incentives for students to learn, you should identify which of the following factors?

1. Needs
2. Concerns
3. Backgrounds
4. Knowledge

1-55. The goal of instruction is to motivate students to achieve personal objectives.

1. True
2. False

1-56. Which of the following factors is a growth need?

1. Esteem
2. Physiology
3. Self-actualization
4. Safety

1-57. Which of the following motivation principles refers to a person's view of an activity as worthwhile?

1. Needs
2. Drives
3. Values
4. Interest

1-58. Which of the following actions should you take to generate student interest?

1. State the purpose at the beginning of the lesson
2. Give students detailed feedback
3. Relate personal experiences
4. Use a variety of gestures

1-59. A deficit or lack that causes a desire for satisfaction is defined as a

1. desire
2. want
3. need
4. goal

1-60. Which of the following characteristics would you draw on to capture a student's interest?

1. Attitude
2. Interest level
3. Personal values
4. Internal motivation

1-61. Which of the following factors is a key principle of the motivation theory?

1. Participation
2. Achievement
3. Involvement
4. Ego

1-62. Students can rely upon their instructors to provide necessary motivation for success in learning.

1. True
2. False

1-63. Which of the following examples is a technique of motivation?

1. Establish goals
2. Apply emphasis
3. Analyze values
4. Satisfy needs

1-64. The environment in which learning is to take place should meet which of the following requirements?

1. Be located near dining facilities
2. Be appealing and well-equipped
3. Provide for outside interest
4. Be physically and psychologically safe

ASSIGNMENT 2

Textbook Assignment: Chapter 3, "Motivation," pages 23 through 27, and chapter 4, "Principles of Learning."

Learning objective: Identify the procedures for motivating students.

2-1. Which of the following techniques will NOT assist you in developing motivational strategies for instruction?

1. Providing informative feedback
2. Enforcing the student's point of view
3. Showing an interest in your students
4. Making the subject matter interesting

2-2. You may affect a student's feeling of success or failure by using which of the following motivation techniques?

1. Lecturing with authority
2. Establishing personal goals
3. Providing meaningful feedback
4. Encouraging student participation

2-3. Which of the fallowing teaching factors can suppress student motivation?

1. Taking an interest in your students
2. Encouraging student participation
3. Using various techniques to motivate students
4. Assuming the class will understand the information

2-4. Motivation will have which of the following effects at the beginning of a lesson?

1. Place participants in a passive mood
2. Encourage self-confidence
3. Arouse student curiosity
4. Set challenging goals

2-5. The techniques of motivation do NOT apply in which of the following components of the lesson presentation?

1. Summary
2. Assignments
3. Introduction
4. Presentation

2-6. Besides showing a need for learning the information, the introduction also serves what other purpose?

1. Focuses on the importance of the student
2. Gives students specific examples
3. Links present and past lessons
4. Reduces peer pressure

2-7. For most instructional methods, the introduction of the lesson should achieve which of the following results?

1. Establish personal goals
2. Direct student performance
3. Show the value of the system
4. Provide a road map for learning

2-8. The lesson introduction is used to accomplish which of the following actions?

1. To recapture student attention
2. To motivate students to learn
3. To maintain student interest
4. To stimulate thinking

2-9. In the lesson presentation, on what should you focus student attention?

1. Questions
2. Test scores
3. Study habits
4. Subject matter

2-10. Which of the following methods of instruction should you use to provide an interesting introduction to a lesson?

1. Tell a story
2. Read the lesson plan
3. Encourage participation
4. Tell an irrelevant story

2-11. Which of the following course objectives is NOT accomplished by the introduction to a lesson?

1. Develop main teaching points
2. Develop the students' interest
3. Let the students know what you expect of them
4. Direct the students' thinking along desired lines

2-12. One of the best motivators to use during the lesson presentation is to

1. use quotations
2. use training aids
3. use overhead questions
4. review the lesson summary

2-13. To meet the learning objectives of the lesson, you do NOT need to know which of the following details?

1. What you are going to teach
2. How you will teach the lesson
3. Time allocation for the topic
4. Extraneous facts about the subject

2-14. What type of question do you direct to the students but don't expect them to answer?

1. Rhetorical
2. Factual
3. Direct
4. Essay

2-15. What is the purpose of the summary?

1. To inspire students to want to retain and use what they have learned
2. To assess each student's achievement level and learning style
3. To cause students to remain motivated
4. To motivate students to learn

2-16. You should give a final summary at what point in the lesson presentation?

1. Before reviewing the lesson
2. After giving the lesson objectives
3. Before giving the lesson introduction
4. After giving the main teaching points

2-17. Which of the following factors is NOT important in determining the readiness of each student to learn?

1. Motivational patterns
2. Achievement level
3. Ethnic background
4. Learning style

2-18. Which of the following statements describes what a lesson summary accomplishes?

1. Provides positive feedback and sets challenging goals
2. Creates an environment that encourages students to learn
3. Recaptures the students' attention and builds to a motivational climax
4. Motivates students by relating information to future lessons

2-19. The process of applying past learning to new, but somewhat similar, situations is identified by which of the following terms?

1. Insight
2. Transfer
3. Association
4. Trial and error

2-20. Instructors should display which of the following types of behavior?

1. Curious
2. Exciting
3. Partiality
4. Professional

Learning objective: Identify the principles of learning.

2-21. Imitation, trial and error, association, insight, and transfer are best described by which of the following terms?

1. Ways of learning
2. Methods of teaching
3. Plans for evaluating
4. Procedures for instructing

2-22. A change in behavior as a result of experience describes which of the following terms?

1. Transfer
2. Learning
3. Association
4. Trial and error

2-23. All students learn in the same way and at the same rate.

1. True
2. False

2-24. Which of the following ways of learning begins early in a person's life and lasts throughout his or her lifetime?

1. Insight
2. Transfer
3. Imitation
4. Association

2-25. Trial and error is sometimes referred to as which of the following types of learning?

1. Reinforcement
2. Association
3. Discovery
4. Transfer

2-26. The Navy's damage control team training is an example of which of the following training methods?

1. Insight
2. Transfer
3. Association
4. Trial and error

2-27. When learners suddenly understand the elements of a problem situation, they have experienced learning through which of the following ways?

1. Readiness
2. Imitation
3. Insight
4. Effect

2-28. The act of learning has which of the following objectives?

1. To be meaningful
2. To identify the lesson
3. To serve the learner in the future
4. To provide positive reinforcement to students

2-29. Which of the following terms applies to association learning?

1. Using actual experiences
2. Applying past learning in new ways
3. Comparing past learning to new situations
4. Making common sense applications

2-30. You use comparisons, contrasts, and examples to reinforce your explanations when you want students to learn through which of the following ways?

1. Insight
2. Transfer
3. Imitation
4. Association

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2-31. Laws and principles of learning are attempts to define which of the following factors?

1. The ways people learn
2. How people apply what is learned
3. Why people learn
4. The conditions of learning

2-32. Which of the following laws of learning is based on the maxim that practice makes perfect?

1. Effect
2. Exercise
3. Intensity
4. Readiness

2-33. Which of the following laws of learning has a direct relationship to motivation?

1. Effect
2. Primacy
3. Readiness
4. Intensity

2-34. Which of the following principles is the basis of the law of effect?

1. Clarify misunderstandings
2. Gain the confidence of your students
3. Teach the correct information and procedures
4. Provide positive reinforcement to the students

2-35. Which of the following statements applies to the law of primacy?

1. Learn from unknown to known
2. Learn from complex to simple
3. Unlearning bad habits is easy
4. Initial learning is retained longer

2-36. Which of the following teaching methods would you use to help students gain insight?

1. Encourage thought
2. Compare past learning
3. Provide proper supervision
4. Provide positive reinforcement

2-37. Which of the following laws of learning states that a vivid experience is learned better and retained longer?

1. Exercise
2. Intensity
3. Readiness
4. Motivation

2-38. Learning arithmetic by repeatedly solving addition problems is an application of which of the following laws of learning?

1. Effect
2. Primacy
3. Exercise
4. Readiness

Learning objective: Determine the factors that affect learning.

2-39. Which of the following factors has an impact on the scholastic ability be a student?

1. High ASVAB scores
2. Average ASVAB scores
3. High motivation to learn
4. High level of prior experience

2-40. Requiring students to use all of their senses in skill training may increase their retention to what percentage?

1. 50%
2. 70%
3. 90%
4. 100%

2-41. Which of the following senses is the second most important in learning?

1. Touch
2. Taste
3. Smell
4. Hearing

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2-42. By asking questions to stimulate thinking, you can increase student retention to what percentage level?

1. 60%
2. 70%
3. 80%
4. 90%

2-43. It has been estimated that people retain what percentage of the information they read?

1. 10%
2. 20%
3. 30%
4. 50%

2-44. Kinesthesia involves all the senses in addition to which of the following skills?

1. Psychomotor and perceptual
2. Psychic and perceptual
3. Natural and learned
4. Perceptual and psychic

2-45. To help students learn a complex mechanical skill, you should use which of the following methods of instruction?

1. Meaningful stimulation
2. Structured experience
3. Applied applications
4. Correct practice

2-46. We all make mistakes because of what common personal characteristic?

1. Incompetence
2. Insincerity
3. Fallibility
4. Immaturity

2-47. Of the common characteristics most students share, which of the following causes students to form opinions quickly?

1. A need for self-confidence
2. A belief in their maturity
3. An ability to evaluate
4. A need for recognition

2-48. You should emphasize adult learning techniques that require which of the following types of experience?

1. Hands-on
2. Leadership
3. Supervisory
4. Professional

2-49. Which of the following senses is a valuable learning tool in certain limited applications?

1. Sight
2. Touch
3. Smell
4. Hearing

2-50. Which of the following learning factors usually determines whether or not a student can master the course objectives?

1. Learning senses
2. Self-discipline
3. Attention span
4. Motivation

2-51. You can motivate students to learn by taking advantage of the basic human need for

1. recognition
2. fulfillment
3. acceptance
4. love

2-52. Students have a high regard for instructors who show a sense of

1. partiality
2. practicality
3. recognition
4. fair play

2-53. Which of the following individual differences is the most obvious among learners?

1. Physical
2. Emotional
3. Attitudinal
4. Intellectual

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2-54. Which of the following individual differences plays a major role in training?

1. Social
2. Gender
3. Physical
4. Emotional

2-55. Which of the following individual differences plays a major role in the composition of most classes?

1. Backgrounds
2. Attitudes
3. Physical
4. Aptitude

2-56. Training is aimed at what type of learner?

1. Above average
2. Average
3. Slow
4. Fast

2-57. Which of the following is a basic learning style?

1. Fixed
2. Active
3. Passive
4. Projected

2-58. Which of the following types of learners prefers an experience-based approach to learning?

1. Active
2. Abstract
3. Concrete
4. Reflective

2-59. Which of the following types of learners makes comparisons and contrasts before drawing conclusions?

1. Reflective
2. Impartial
3. Abstract
4. Active

2-60. DELETED

2-61. A theoretical, analytical approach to learning, such as lectures by experts, provides the best learning situation for which of the following types of learners?

1. Active
2. Abstract
3. Concrete
4. Reflective

2-62. Which of the following types of learners learns best from films and reading?

1. Active
2. Concrete
3. Introvert
4. Reflective

2-63. What is the first type of learning people experience?

1. Active
2. Sensory
3. Abstract
4. Reflective

2-64. What is one of the most common causes of forgetting?

1. Disuse
2. Reinforcement
3. Short-term memory
4. Short attention span

2-65. Which of the following individual differences injects a note of realism into training?

1. Emotions
2. Attitudes
3. Experiences
4. Physical attributes

2-66. Students will retain what percentage of a lesson in which they can see demonstrations of what they hear?

1. 50%
2. 75%
3. 80%
4. 95%

2-67. Retention of information declines and instruction may be confusing when more than one learning style is used.

1. True
2. False

2-68. Which of the following individual differences depends on a student's intelligence?

1. Aptitude
2. Maturity
3. Emotions
4. Motivation

2-69. What type of learner learns best from small group discussions?

1. Reflective
2. Concrete
3. Abstract
4. Active

2-70. The motivation level of students is apparent by which of the following individual differences?

1. Emotions
2. Attitudes
3. Backgrounds
4. Experiences

ASSIGNMENT 3

Textbook Assignment: Chapter 5, "Effective Communications," and chapter 6, "Instructional Methods."

3-1.   In addition to skills and experience, which of the following personal traits should you use to help students learn?

1.   Excitement
2.   Motivation
3.   Knowledge
4.   Interest

3-2.   Which of the following instructional factors increases the potential for poor classroom communication?

1.   Student and/or instructor experience differences
2.   Instructor confidence
3.   Student feedback
4.   Role playing

3-3.   Which of the following barriers is one of the greatest obstacles to effective communications?

1.   Fear
2.   Faith
3.   Reliance
4.   Confidence

3-4.   What is the purpose of feedback in communications?

1.   Explain issues
2.   State a position
3.   Obtain a response
4.   Ensure understanding

3-5.   Listening is an active process that must be learned. Which of the following student responses helps this learning process?

1.   Apathy and lethargy
2.   Passiveness and liberalism
3.   Concentration and attention
4.   Articulation and convolution

3-6.   Spoken words alone account for what percentage of the impact of a message?

1.   5%
2.   7%
3.   10%
4.   15%

3-7.   In your instructor delivery, you should avoid which of the following manners of speaking?

1.   Mumbling
2.   Articulating
3.   Using proper grammar
4.   Using a regional accent

3-8.   Raised hands and relevant questions are sure signs of which of the following listening factors?

1.   Positive feedback
2.   Negative feedback
3.   Poor communications
4.   Effective communications

3-9.   What is the normal words-per-minute rate of speech delivery?

1.   50-75
2.   75-100
3.   100-125
4.   125-150

3-10. Which of the following elements. concerns the correct usage of the spoken or written word?

1. Grammar
2. Inflection
3. Articulation
4. Speech improvement

3-11. The use of understandable speech describes which of the following delivery techniques?

1. Force
2. Inflection
3. Articulation
4. Speech improvement

3-12. Which of the following factors is NOT an internal barrier to effective communications?

1. Attitude
2. Experience
3. Temperature
4. Understanding

3-13. What is the most powerful element of instructor presence in front of a class?

1. Speaking
2. Gestures
3. Body movement
4. Direct eye contact

3-14. To judge your effectiveness and make necessary adjustments in your presentations, you should rely on which of the following communication techniques?

1. Force
2. Feedback
3. Inflection
4. Speech improvement

3-15. Appropriate body movements have which of the following effects on verbal communications?

1. Negative
2. Distracting
3. Reinforcing
4. Unfavorable

3-16. A natural movement of any part of the body that conveys a thought or an emotion or reinforces oral expression defines which of the following communication skills?

1. Eye contact
2. Enthusiasm
3. Gesturing
4. Listening

3-17. Which of the following teaching techniques combines volume with vitality and conviction?

1. Force
2. Feedback
3. Inflection
4. Speech improvement

3-18. To help you convey your thoughts to your audience, you should use which of the following communication skills?

1. Body movement
2. Articulation
3. Eye contact
4. Listening

3-19. When teaching a lesson, how long should you maintain eye contact with your students?

1. 15 to 20 seconds
2. 10 to 14 seconds
3. 3 to 5 seconds
4. 6 to 9 seconds

3-20. What is the basic rule in the use of a body movement?

1. Moderation
2. Confidence
3. Inflection
4. Articulation

3-21. Which of the following movements will NOT distract from your presentation during a training session?

1. Swaying
2. Fidgeting
3. Folded arms
4. Facial expressions

3-22. To add to the effectiveness of your speech, you should use which of the following teaching methods?

1. Coercion
2. Gestures
3. Reflection
4. Intimidation

3-23. Showing confidence and sincerity about a subject is part of which of the following communication skills?

1. Enthusiasm
2. Gestures
3. Attitude
4. Force

3-24. Which of the following communication skills involves a change in the normal pitch or tone of your voice?

1. Articulation
2. Enthusiasm
3. Inflection
4. Grammar

Learning objective: Identify the types and techniques of oral questioning.

3-25. What is the primary purpose of oral questioning?

1. Stimulate students to memorize
2. Stimulate students to think
3. Improve students' speech
4. Motivate students

3-26. Which of the following factors is NOT an indicator of a good speaking attitude?

1. Enthusiasm
2. Confidence
3. Sincerity
4. Knowledge

3-27. The success of the instructional mission depends on your use of which of the following means of communication?

1. Eye contact
2. Enthusiasm
3. Feedback
4. Gestures

3-28. What is the greatest resource for enhancing your classroom instruction?

1. Students
2. Textbooks
3. Visual aids
4. Previous instructors

3-29. What is the first step in establishing a good questioning technique?

1. Call upon the students
2. State the question
3. Create interest
4. Focus attention

3-30. When constructing good oral questions, you must consider the level of instruction, the clarity of meaning, and the use of

1. the interrogative
2. a lesson grade
3. training aids
4. answers

3-31. What type of question asks the student for specific information?

1. Interest-arousing
2. Multiple-answer
3. Factual
4. Leading

3-32. To generate a high interest level and improve listening skills, you should ask which of the following types of questions?

1. Interest-arousing
2. Multiple-answer
3. Yes or no
4. Leading

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3-33. Which of the following types of questions is detrimental if used too frequently?

1. Factual
2. Yes or no
3. Multiple-answer
4. Interest-arousing

3-34. How many steps constitute a satisfactory pattern of oral questioning?

1. One
2. Two
3. Five
4. Four

3-35. Which of the following types of questions is one that suggests its own answer?

1. Factual
2. Leading
3. Yes or no
4. Canvassing

3-36. What is the quickest and simplest means of determining the level of achievement of your students?

1. Pretests
2. Questionnaires
3. Oral questions
4. Written examinations

3-37. Which of the following types of questions may become boring if used too frequently?

1. Thought-provoking
2. Canvassing
3. Leading
4. Factual

3-38. To determine the students who are familiar with a specific area of subject matter, you should use which of the following types of questions?

1. Leading
2. Factual
3. Yes or no
4. Canvassing

3-39. Which of the following types of questions, if used properly, will stimulate students to think?

1. Thought-provoking
2. Multiple-answer
3. Yes or no
4. Factual

3-40. Which of the following types of questions can be used to increase student participation in the class?

1. Interest-arousing
2. Multiple-answer
3. Factual
4. Leading

3-41. If used excessively, which of the following types of questions tends to encourage students to guess?

1. Leading
2. Yes or no
3. Canvassing
4. Thought-provoking

3-42. To increase class involvement and provide recognition for students who answer questions, you should use which of the following types of questions?

1. Factual
2. Leading
3. Yes or no
4. Redirected

3-43. When you want the student to relate a correct answer to another topic, you should use which of the following oral-questioning techniques?

1. Redirecting
2. Refocusing
3. Prompting
4. Reverse

3-44. Which of the following personal characteristics will NOT have an impact on your class when you are presenting the lesson?

1. Appearance
2. Speech
3. Habits
4. Values

3-45. To get students to think, make associations, and answer their own questions, you should use which of the following oral-questioning techniques?

1. Reinforcement
2. Redirection
3. Refocus
4. Reverse

3-46. What is the primary reason for asking questions?

1. Build student confidence
2. Identify slow learners
3. Identify fast learners
4. Provoke thought

3-47. Which of the following types of questions normally begins with an interrogatory expression?

1. Thought-provoking
2. Interest-arousing
3. Multiple-answer
4. Factual

3-48. Which of the following types of questions may sound superficially like a factual question?

1. Leading
2. Yes or no
3. Canvassing
4. Interest-arousing

3-49. To save inexperienced students from embarrassment in front of the class, you should ask which of the following types of questions?

1. Thought-provoking
2. Canvassing
3. Leading
4. Factual

3-50. You can determine the knowledge and experience level of the class by asking which of the following types of questions?

1. Interest-arousing
2. Canvassing
3. Yes or no
4. Factual

Learning objective: Identify the different types of instructional methods.

3-51. What is the most often used method of instruction for teaching a skill-type subject?

1. Lesson
2. Lecture
3. Role playing
4. Demonstration

3-52. Which of the following instructional methods allows you to present a subject to a large audience?

1. Lesson
2. Lecture
3. Role playing
4. Demonstration

Learning objective: Determine the different instructional methods used in teaching.

3-53. A presentation of information, concepts, or principles constitutes which of the following instructional methods?

1. Demonstration
2. Case study
3. Lecture
4. Lesson

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3-54. To prevent your students from becoming bored, you should make sure your lecture lasts what maximum amount of time?

1. 30 minutes
2. 45 minutes
3. 60 minutes
4. 90 minutes

3-55. You can reduce the time needed to explain information by using which of the following instructional methods?

1. Discussion
2. Role-playing
3. Demonstration
4. Lecture with audiovisuals

3-56. What method of classroom instruction does the Navy use most often in training?

1. Lesson
2. Lecture
3. Discussion
4. Role playing

3-57. In what part of the lesson are lesson objectives taught in detail?

1. Review
2. Summary
3. Introduction
4. Presentation

3-58. What instructional method uses training aids to support and clarify the main teaching points of a presentation?

1. Lesson
2. Lecture
3. Student repetition
4. Instructor repetition

3-59. In the training environment, which of the following instructional methods is the most flexible and useful?

1. Instructor repetition
2. Student repetition
3. Lecture
4. Lesson

3-60. The introduction, presentation, and summary are the basic elements of which of the following instructional methods?

1. Instructor repetition
2. Student repetition
3. Coach-pupil
4. Lesson

3-61. A performance step will always be included in which of the following instructional methods?

1. Demonstration
2. Role playing
3. Lecture
4. Lesson

3-62. In what part of the lesson should you get the attention of and motivate every student in your class?

1. Demonstration
2. Introduction
3. Repetition
4. Discussion

3-63. Which of the following steps motivates the student by proving that he or she can do the job with the instruction given?

1. Group performance repetition
2. Instructor repetition
3. Student repetition
4. Demonstration

3-64. In the classroom, which of the following steps do students practice until they attain the required proficiency?

1. Instructor repetition
2. Student repetition
3. Group performance
4. Performance

3-65. When you guide students in sharing information and talking about a topic or problem during class time, you are using which of the following instructional methods?

1. Discussion
2. Case study
3. Role playing
4. Demonstration

3-66. What teaching step requires you to divide students into small groups?

1. Group performance repetition
2. Coach-pupil repetition
3. Instructor repetition
4. Student repetition

3-67. To cover all of the steps your students need to learn a skill in an effective learning sequence, which of the following instructional methods would you use?

1. Lecture with audiovisuals
2. Demonstration
3. Discussion
4. Lesson

3-68. Which of the following instructional methods involves an interchange of ideas by the students while you provide guidance?

1. Demonstration
2. Case study
3. Discussion
4. Lecture

3-69. In teaching skills such as problem solving and understanding cause-and-effect relationships, you should use which of the following instructional methods?

1. Lecture with audiovisuals
2. Directed discussion
3. Lecture only
4. Lesson

3-70. The primary method of instruction used in a given training setting depends on which of the following objectives?

1. Learning
2. Teaching
3. Long-range
4. Occupational

3-71. What part of the lesson is used to create interest in your topic and establish why students should pay attention and learn the material?

1. Sum-nary
2. Introduction
3. Presentation
4. Demonstration

3-72. Which of the following instructional methods depends primarily on student listening and note-taking skills for the transfer of learning?

1. Demonstration
2. Introduction
3. Lecture
4. Lesson

ASSIGNMENT 4

Textbook Assignment: Chapter 7, "Learning Objectives," and chapter 8, "Testing."

Learning objective: Identify the different types of learning objectives.

4-1.   Which of the following terms defines the ability to grasp the meaning of the material?

1. Analysis
2. Knowledge
3. Application
4. Comprehension

4-2.   Which of the following psychomotor domain levels involves the early stages of learning a complex skill?

1. Guided response
2. Perception
3. Mechanism
4. Set

4-3.   How many categories are in the cognitive domain?

1. Six
2. Two
3. Five
4. Four

4-4.   An objective is an explanation of a performance students must demonstrate before you consider them to be at which of the following skill levels?

1. Amateur
2. Average
3. Superior
4. Competent

4-5.   Taxonomy is divided into which of the following parts?

1. Education, sets, and cognitive
2. Domain, cognitive, and affective
3. Affective, cognitive, and psychomotor
4. Knowledge, cognitive, and psychomotor

4-6.   Students who can grasp the organization of material by separating it into its component parts have which of the following types of ability?

1. Analysis
2. Perception
3. Application
4. Comprehension

4-7.   Instructional objectives are broadly classified into which of the following categories?

1. Analysis and thought
2. Skill and knowledge
3. Application and analysis
4. Knowledge and evaluation

4-8.   At which level within the psychomotor domain should you expect students to demonstrate a high degree of proficiency?

1. Adaptation
2. Origination
3. Guided response
4. Complex overt response

4-9.   The ability to apply learning in new and concrete ways describes which of the following categories of the cognitive domain?

1. Application
2. Evaluation
3. Perception
4. Synthesis

4-10. You gain understanding of the instructional intent of a course, receive direction for instruction, and acquire guidelines for testing through which of the following course elements?

1. Illustrations
2. Introduction
3. Objectives
4. Summary

4-11. The recall of previously learned information describes which of the following categories of the cognitive domain?

1. Analysis
2. Knowledge
3. Evaluation
4. Comprehension

4-12. In which of the following cognitive domain categories does the highest level of understanding take place?

1. Synthesis
2. Evaluation
3. Application
4. Comprehension

4-13. In which of the following cognitive domain categories does the lowest level of learning take place?

1. Analysis
2. Application
3. Knowledge
4. Comprehension

4-14. Which of the following categories of the cognitive domain refers to the ability to reason from the general to the particular?

1. Synthesis
2. Evaluation
3. Application
4. Comprehension

4-15. In what domain are learning outcomes associated with emotions, attitudes, and feelings?

1. Psychomotor
2. Perception
3. Affective
4. Mechanism

4-16. Transfer learning is associated with which of the following categories of the psychomotor domain?

1. Mechanism
2. Adaptation
3. Origination
4. Guided response

4-17. What element of the psychomotor domain refers to a student's ability for new and creative performance after having developed a skill?

1. Complex overt response
2. Origination
3. Perception
4. Set

Learning objective: Determine the various learning objective elements.

4-18. The behavior element defines what the learner should be able to do as an outcome of training. It may also include which of the following factors?

1. Application of a skill
2. Demonstration of a skill
3. Application of knowledge
4. Accomplishment of the objective

4-19. Which of the following learning objective elements specifies the criteria each student's performance must meet?

1. Condition
2. Standard
3. Behavior

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4-20. How many elements does a learning objective have?

1. One
2. Two
3. Three
4. Four

4-21. DELETED

4-22. Which of the following learning objective elements defines the degree of interaction with the training environment?

1. Condition
2. Behavior
3. Standard

Learning objective: Identify the different types of learning objectives.

4-23. Knowledge and skills that support a terminal objective are contained in which of the following types of learning objectives?

1. Course learning
2. Topic learning
3. Terminal
4. Enabling

4-24. What learning objective serves as a guide for the instructor to use in measuring student performance?

1. Terminal
2. Enabling
3. Course
4. Topic

4-25. In addition to mental and physical skills; learning objectives in Navy training courses normally fall into which of the following categories?

1. Knowledge
2. Terminal
3. Enabling
4. Topic

4-26. What percentage of accuracy is required if the learning objective lacks a stated standard?

1. 100%
2. 75%
3. 50%
4. 25%

4-27. Instructional objectives are broadly classified as which of the following types of objectives?

1. Knowledge
2. Terminal
3. Enabling
4. Topic

4-28. Learning objectives are the basis for the development of which of the following course elements?

1. Tests
2. Curriculum
3. Visual aids
4. Oral questions

Learning objective: Indicate the various types of testing formats.

4-29. The Navy uses primarily which of the following types of tests?

1. Recall and analysis
2. Knowledge and performance
3. Application and performance
4. Comprehension and knowledge

4-30. The process of verbatim identification of specific terms, facts, and methods is determined by which of the following learning levels?

1. Recall
2. Application
3. Recognition
4. Comprehension

4-31. The ability to use acquired knowledge in a job-related situation involves which of the following learning levels?

1. Recall
2. Application
3. Analysis
4. Evaluation

4-32. Of the five types of test items you can write, which of the following is the most versatile?

1. Essay
2. True-false
3. Completion
4. Multiple-choice

4-33. How many formats can you use to construct the stem of a multiple-choice test item?

1. One
2. Two
3. Three
4. Four

4-34. Which of the following learning levels allows students to respond to a question from memory?

1. Recall
2. Recognition
3. Comprehension
4. Analysis/evaluation

4-35. In developing multiple-choice alternatives, you must meet which of the following requirements?

1. Use negative wording
2. Include only one correct answer
3. Use loosely related alternatives
4. Use alternatives that are not meaningful

4-36. When you want a student to select the correct answer to a multiple-choice test item, which of the following test formats should you use?

1. Open
2. Closed
3. Except
4. Standard

4-37. Navy schools administer tests for which of the following reasons?

1. To develop statistics
2. To support course missions
3. To determine achievement of the elements
4. To determine achievement of the objectives

4-38. You should develop multiple-choice test alternatives based on which of the following student considerations?

1. Interrelated answers
2. Use of negative wording
3. Common misconceptions
4. Experienced job incumbents

4-39. Which of the following types of test items contains only two responses?

1. Essay
2. Matching
3. True-false
4. Completion

4-40. When three or more equally correct alternatives answer the question, you have written the stem in which of the following formats?

1. Open
2. Except
3. Closed
4. Standard

4-41. Which of the following guidelines is NOT used in constructing matching test items?

1. Place options on the same page
2. Use short phrases in the answer list
3. Place answers in the left-hand column
4. Make all answers relate to the question

4-42. The many factors that enter into the correctness of a response make scoring of which of the following types of tests relatively subjective?

1. Essay
2. Matching
3. Completion
4. Multiple-choice

4-43. Which of the following is a free-response type item in which missing information is supplied from memory?

1. Matching
2. Completion
3. True-false
4. Multiple-choice

4-44. Performance tests are used to measure which of the following factors?

1. Skill and knowledge
2. Product and process
3. Knowledge and process
4. Application and comprehension

4-45. Test-item development is found in which of the following curriculum development manuals?

1. NAVEDTRA 130
2. NAVEDTRA 140
3. NAVEDTRA 145
4. NAVEDTRA 150

4-46. To assess learning of a large body of information, you should use which of the following types of test items?

1. True-false
2. Completion
3. Matching
4. Essay

4-47. A significant portion of the testing for many courses is accomplished by which of the following tests?

1. Performance
2. Completion
3. Matching
4. Essay

4-48. Which of the following elements is NOT a factor in the development of knowledge test items?

1. Recall
2. Application
3. Performance
4. Comprehension

4-49. Which of the following learning levels involves understanding what was taught instead of just memorizing the words?

1. Recall
2. Recognition
3. Replication
4. Comprehension

4-50. A descriptive statement that includes all relevant information required for a correct response forms which of the following types of test items?

1. Essay
2. Matching
3. True-false
4. Multiple-choice

4-51. An original written response by the student is required to answer which of the following test questions?

1. Multiple-choice
2. Completion
3. Matching
4. Essay

4-52. Completion items may be constructed in how many formats?

1. One
2. Two
3. Three
4. Four

4-53. You must use a model answer in grading which of the following types of test items?

1. Essay
2. Matching
3. True-false
4. Multiple-choice

4-54. Although it is ideally suited to test recognition, which of the following formats may you also use to test comprehension and application?

1. Multiple-choice
2. Completion
3. Matching
4. Essay

4-55. Detailed information on the development of performance tests and their elements is contained in which of the following manuals?

1. NAVEDTRA 140
2. NAVEDTRA 135
3. NAVEDTRA 134
4. NAVEDTRA 131

4-56. Who is responsible for validating test items before they are approved for use?

1. The student
2. The administrator
3. The education specialist
4. The subject matter expert

4-57. Time consumption and scoring difficulty are disadvantages of which of the following types of test items?

1. Essay
2. Matching
3. Completion
4. True-false

4-58. Which of the following types of test items consists of two columns below the stem?

1. Matching
2. Completion
3. True-false
4. Multiple-choice

4-59. When constructing matching test items, which of the following guidelines should you follow?

1. Give directions in column A about how to match the question and answer
2. Avoid arranging numbers in descending order
3. Limit wording of stems to two lines
4. Place options on the same page

4-60. A student automatically has a 50-percent chance of answering which of the following types of items correctly?

1. Multiple-choice
2. True-false
3. Matching
4. Essay

4-61. Before assembling items into a test, you do NOT need to check which of the following details of the composition?

1. Contents
2. Spelling
3. Grammar
4. Purpose

4-62. Which of the following learning
levels involves the understanding
of the elements of data?

1. Recall
2. Analysis
3. Evaluation
4. Application

4-63. When you are developing knowledge
test items, you need to focus on
testing the abilities of the
student at which of the following
levels?

1. Communication
2. Performance
3. Knowledge
4. Learning

4-64. You may use the standard or except
formats when constructing which of
the following types of test items?

1. Essay
2. Matching
3. Completion
4. Multiple-choice

4-65. When you construct completion
items, which of the following
guidelines should you follow?

1. Use an indirect question
2. Word the test item clearly
3. Make the correct answer obvious
4. Use statements taken from the
curriculum

4-66. When you place the response
position at the end of an
incomplete statement and follow
with a logical conclusion in the
alternatives, you have written a
multiple-choice test item in which
of the following formats?

1. Open stem
2. Closed stem
3. Except
4. Standard

4-67. After the curriculum has been
validated, which of the following
persons is responsible for
developing additional versions of
the test?

1. Education specialists
2. Testing specialists
3. Course personnel
4. Training officers

4-68. Navy testing is based on the
achievement of which of the
following objectives?

1. Learning
2. Knowledge
3. Teaching
4. Performance

4-69. The verbatim remembering of facts,
rules, and methods takes place at
which of the following learning
levels?

1. Comprehension
2. Application
3. Evaluation
4. Recall

ASSIGNMENT 5

Textbook Assignment: Chapter 9, "Course Materials," and chapter 10, "Instructor Evaluation."

Learning objective: Determine the course materials needed to develop lesson plans.

5-1. What is the most important document available to you as an instructor?

1. Lesson plan
2. Lesson format
3. Assignment sheet
4. Instruction sheets

5-2. To provide students with lesson information practice or to prepare them for the next lesson, you should use which of the following lesson topic elements?

1. Application
2. Presentation
3. Assignment
4. Review and summary

5-3. Assignment sheets are divided into how many sections?

1. One
2. Two
3. Three
4. Four

5-4. The main body of the lesson is found in which of the following lesson topic elements?

1. Introduction
2. Presentation
3. Application
4. Assignment

5-5. To provide students with information to complete a particular course of study, you may use how many types of instruction sheets?

1. One
2. Two
3. Three
4. Six

5-6. Which of the following instruction sheets contains the topic learning objectives?

1. Job sheet
2. Diagram sheet
3. Assignment sheet
4. Information sheet

5-7. To reinforce learning and to get valuable feedback on what learning has taken place, you would use which of the following lesson topic elements?

1. Review and summary
2. Presentation
3. Introduction
4. Assignment

5-8. How many basic elements are contained in a lesson topic?

1. Five
2. Two
3. Three
4. Four

5-9. To provide students with illustrative material to support other instruction sheets, you would use which of the following instruction sheets?

1. Job
2. Diagram
3. Assignment
4. Information

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5-10. The motivation statement is presented in which of the following lesson topic elements?

1. Assignment
2. Application
3. Introduction
4. Presentation

5-11. Essential information regarding the course of instruction appears in which of the following course materials?

1. Front matter
2. Assignment sheets
3. Instruction sheets
4. Instructional media

5-12. To learn what they must do to complete the assignment, students must read which of the following instruction sheets?

1. Information
2. Assignment
3. Problem
4. Job

5-13. What section of a student information sheet is written to a level paralleling course content?

1. Summary
2. References
3. Information
4. Introduction

5-14. Student interest is aroused and student motivation is stimulated in which of the following parts of the lesson?

1. Review and summary
2. Introduction
3. Presentation
4. Application

5-15. Each information sheet consists of how many sections?

1. One
2. Two
3. Three
4. Four

5-16. The introduction, required equipment, references, and job steps are all included on which of the following sheets?

1. Job
2. Problem
3. Outline
4. Assignment

5-17. What part of the lesson topic enables a student to apply the knowledge to a mental skill?

1. Assignment
2. Application
3. Presentation
4. Introduction

5-18. What student instruction sheet has a complete listing of all the equipment needed to accomplish a task?

1. Job
2. Problem
3. Assignment
4. Information

5-19. A listing of all publications used to develop a lesson is contained in which of the following instruction sheets?

1. Job
2. Diagram
3. Assignment
4. Information

5-20. Which of the following instruction sheets directs the study or homework efforts of a student?

1. Assignment
2. Problem
3. Outline
4. Job

5-21. What part of the job sheet describes the purpose and benefits the student can expect from the topic?

1. Job steps
2. References
3. Introduction
4. Required equipment

5-22. The major discussion points of the topic are contained in which of the following instruction sheets?

1. Information
2. Assignment
3. Outline
4. Job

5-23. All publications students need to help them perform a job are listed in which of the following sections of the job sheet?

1. Job step
2. References
3. Introduction
4. Required equipment

Learning objective: Determine the purposes of instructional media material.

5-24. When students see as well as hear the information being taught, they can retain what percentage of it?

1. 10%
2. 20%
3. 30%
4. 50%

5-25. What is the primary purpose of instructional media material?

1. To increase student interest
2. To increase student retention
3. To provide uniformity in training
4. To increase student understanding

5-26. DELETED

5-27. People retain what percentage of the material they read?

1. 10%
2. 20%
3. 30%
4. 40%

5-28. After using a visual aid to support your lesson, you should do what, if anything, with the visual aid?

1. Move it to another spot in front of the class
2. Move it behind the class
3. Remove it from sight
4. Nothing

5-29. To determine what instructional media material you will need to support your lesson, you should refer to which of the following resources?

1. Video tapes
2. Slides list
3. Lesson plan
4. Information sheets

5-30. As a general rule, at least how high should the lettering be on a visual aid?

1. 1 inch
2. 2 inches
3. 3 inches
4. 4 inches

Learning objective: Identify the procedures for effective instructor evaluations.

5-31. Evaluators use how many separate checklists to evaluate instructors?

1. One
2. Two
3. Three
4. Four

5-32. The classroom instructor evaluation checklist is divided into how many major categories?

1. One
2. Two
3. Three
4. Four

5-33. Instructor performance, student performance, and facilities are all part of which of the following evaluation checklists?

1. Presentation
2. Laboratory Instructor
3. Summary
4. Classroom Instructor

5-34. The most realistic appraisal of your abilities as an instructor will occur during which of the following evaluations?

1. Classroom
2. Scheduled
3. Laboratory
4. Unscheduled

Learning objective: Identify the proper classroom and laboratory evaluation techniques.

5-35. Which of the following classroom evaluation factors sets the stage for the lesson?

1. Summary
2. Facilities
3. Introduction
4. Presentation

5-36. To enhance the lesson. you should share personal experiences during the introduction. How many of these experiences would be considered an adequate number to share?

1. One
2. Two
3. Three
4. Four

5-37. You should stress the importance of safety in which of the following points of a lesson presentation?

1. Demonstration only
2. Summary only
3. Where applicable
4. Introduction only

5-38. What part of the lesson plan deals with your knowledge of the material?

1. Introduction
2. Presentation
3. Summary
4. Review

5-39. Who is responsible for evaluating the technical accuracy of the information presented in the lesson plan?

1. The student
2. The instructor
3. The education specialist
4. The subject matter expert

5-40. Which of the following considerations is NOT an important factor in a curriculum evaluation?

1. Experience level
2. Technical information
3. Materials preparation
4. Questioning technique

5-41. What part of the lesson plan is used to recap the major discussion points of the lesson?

1. Body
2. Summary
3. Presentation
4. Introduction

5-42. To resolve areas of confusion and determine student accomplishment of the learning objectives, you should use which of the following instructional methods?

1. Ask questions
2. Display enthusiasm
3. Maintain flexibility
4. Maintain a positive attitude

5-43. What part of the lesson is used to maintain continuity within a lesson *or* to emphasize important information?

1. Body of instruction
2. Introduction
3. Presentation
4. Summary

5-44. Your ability to establish and maintain student attention is evaluated under what evaluation factor?

1. Summary
2. Presentation
3. Introduction
4. Instructor-student interaction

5-45. What is the final area evaluated on the laboratory evaluation checklist?

1. Instructor
2. Facilities
3. Students
4. Summary

5-46. What is the first concern in the training environment?

1. Safety
2. Students
3. Learning
4. Instructor

5-47. Which of the following factors greatly improves the quality of instruction?

1. Student performance
2. Laboratory evaluation
3. Instructor evaluation
4. Instructor enthusiasm

5-48. Excessive reading from a lesson plan could indicate which of the following factors about your presentation?

1. Lack of motivation
2. Lack of experience
3. Lack of confidence
4. Lack of preparation

5-49. Before you personalize your lesson plan, who must approve it?

1. Class leader
2. Leading chief
3. School director
4. Course supervisor

5-50. Which of the following is NOT an efficient questioning technique?

1. Answering your own questions
2. Phrasing questions clearly
3. Giving accurate answers
4. Getting students involved

5-51. To ensure the student understands the lesson, you summarize the material at what point?

1. After each topic only
2. As questions arise only
3. As often as necessary
4. After each teaching point only

5-52. The laboratory checklist is used to evaluate which of the following instructional elements?

1. Presentation
2. Publications
3. Testing programs
4. Instructor performance

5-53. To encourage student participation, you should use which of the following instructional techniques?

1. Redirected questioning
2. Direct questioning
3. Written tests
4. Oral quizzes

5-54. Your effectiveness in keeping students involved in the learning process deals with which of the following evaluation factors?

1. Lesson summary
2. Lesson presentation
3. Lesson introduction
4. Instructor-student interaction

5-55. Safety is frequently of greater concern in which of the following learning environments?

1. Library
2. Classroom
3. Laboratory
4. Observatory

5-56. To recognize individual student differences, you should NOT take which of the following actions?

1. Ensure student understands the assignment
2. Provide needed assistance to the student
3. Encourage the student to do his or her best
4. Compare one student's performance with another's

5-57. DELETED

5-58. If a lab session lasts 1 1/2 days, how many times should you review the safety procedures?

1. One
2. Two
3. Three
4. Four

5-59. To hold the students' attention and gather nonverbal feedback, you should use which of the following instructional techniques?

1. Gestures
2. Questions
3. Eye contact
4. Visual aids

5-60. On which of the following factors are you evaluated during the lesson presentation?

1. Self-introduction
2. Coverage of main teaching points
3. Review of instructional materials
4. Explanation of learning objectives