Student Outline

The student outline provides the student with a general structure to follow during the class and a conceptual framework that highlights the main ideas of the class. It contains the learning objectives, lesson outline, and any references used to build the lesson. It also includes any additional notes or information, such as graphics (charts, graphs, clip art, photos, diagrams) deemed necessary. When developing the student outline, it does not have to be in Naval Format or in outline form. It should be developed in a way that the student is able to easily follow and use. Regardless of the format, all pertinent information from the lesson plan should be included, as described above. Appendix B provides examples of some different formats for student outlines and MCO 1553.2_ Appendix O-25 provides a checklist to follow when creating a student outline. Student outlines can be written using one or a combination of the following styles:

- **Completed**. This style provides students with a "cut-and-paste" of the body from the instructor's lesson plan that excludes the administrative information, introduction, any cues, instructor notes, and/or the summary. This style is desirable when students are expected to read the entire outline during class, are unable to take notes or follow along during class, or when instruction takes place outdoors. It is very useful as a study guide or a job aid.

- **Fill in the blank**. This style uses an abridged form of the completed style with key terms or phrases omitted and replaced with blank lines. It is developed as a skeleton outline of the lesson plan. It is the student's responsibility to follow the lecture and fill in the missing information. When students complete the missing key terms or phrases, they are more likely to remember the material as they heard, saw, and wrote it. Presentation of the lesson must be structured to allow students time to fill in the blanks. This style of outline is not recommended for subjects of a technical nature.

- **Bullet**. This style incorporates short, informational statements presented in the same sequence as in the lesson plan. The student must take detailed notes to complete the information. Curriculum developers must take this into consideration and leave sufficient "empty space" for student's notes in the outline. The bulleted style is not recommended for those students with little or no knowledge of the subject.

Supplemental Student Materials

Supplemental student materials include handouts, other than the student outline, given to the class in support of the instruction. Supplemental student materials may include advance handouts to prepare the student for class. Additionally, supplemental student materials may include answer keys to quizzes, additional articles for reading, and reference materials such as technical manuals, graphs, charts, formulas, figures, and maps. The use and number of supplemental student materials is optional and they can be presented in any format. The distinction needs to be made between supplemental student materials and classroom instructional aids. The distinction is made based on ownership. Supplemental student materials will be items that students are able

to take with them following the class. Instructional aids belong to the instructor for use in the classroom. Although the students use them during the class, they do not retain them at the end of the lesson. All supplemental student materials should support the learning objectives being taught.

INSTRUCTOR PREPARATION GUIDE

The Instructor Preparation Guide is a required element of the Master Lesson File (MLF). This guide is created to provide the instructor with information that is critical to the preparation for implementing the lesson. Detailed information is given so that the instructor understands what resources are necessary for the lesson. Much of the information provided under administrative information is copied from the concept card. Though this guide is a MLF item, instructors can make a copy so that they can check off items when preparing for the lesson. An example of the Instructor Preparation Guide can be found in MCO 1553.2_ Appendix O-26, 27. The minimum components for the Instructor Preparation Guide are listed below. This checklist can be added to as needed.

An example of the Instructor Preparation Guide can be found in MCO 1553.2_ Appendix O-26,27.

Lesson Title and Lesson Designator. The lesson title and lesson designator are provided to identify the lesson. Both can be found on the concept card.

Total Lesson Time. Refer to the concept card for the total lesson time. This provides the instructor with the amount of time that he/she has to teach the lesson.

References. List all of the references from the concept card.

Location of Test. The location of the test is provided so that the instructor will know where to go to gather the test materials.

Personnel Required. List all personnel that will be required to implement the lesson (e.g., instructors, support personnel, Corpsman). Check the student to instructor ratio and notes on the concept card for this information.

Facilities. The facilities required for the lesson need to be listed (e.g., classrooms, labs, ranges, etc.). Some facilities may require prior coordination to ensure availability.

The above components are listed as follows:

LESSON TITLE:	Assemble a Master Lesson File
LESSON DESIGNATOR:	CD0209
TOTAL LESSON TIME:	30 Minutes
REFERENCES:	MCO 1553.2, SAT Manual, MCTIMS User's Manual
LOCATION OF TEST:	See Course Chief
PERSONNEL REQUIRED:	1 Instructor
FACILITIES:	30 seat classroom

Top portion of the Instructor Preparation Guide.

Review Course Materials. This checkbox is necessary so that the instructor will review the course materials to identify any potential problems prior to instruction.

REVIEW COURSE MATERIALS:

- ☐ Review the course/training schedule, administrative requirements, student background information, lesson plans, student materials, media, and evaluations (tests).

Personalization. This checkbox is necessary so that the instructor adds personalization to the lesson plan.

PERSONALIZATION:

- ☐ Personalize the lesson plan by adding subject matter detail, relating personal experiences, providing examples, and/or interactive techniques.

Materials/Equipment. All materials and equipment needed to conduct the lesson are listed here with check boxes so that the instructor can gather materials well in advance of the lesson. Materials may include models, mockups, audiovisual equipment, handouts, etc.

MATERIALS/EQUIPMENT:

- ☐ Video clip for Gain Attention
- ☐ Computer and Projector
- ☐ 30 Brown Binders for Master Lesson Files
- ☐ 30 Master Lesson File Checklists

Exercise Setup and Planning. Each exercise (e.g., demonstration, practical application) is listed here. Underneath each, the setup and planning is described in sequence with check boxes to the side.

EXERCISE SETUP AND PLANNING:

Demonstration

- ☐ An MLF binder is ready to hand out to each student.
- ☐ The MLF checklists are ready to hand out to each student.
- ☐ Ensure that classroom is set up so that demonstration can be seen by all.

Safety. The ORA worksheet is a required element of the MLF and must be reviewed by the instructor. This checklist also requires that the instructor reassess the environment for changes (e.g., weather or worn equipment) and report findings on the AIR.

SAFETY:

- ☐ Review ORA worksheet in Master Lesson File
- ☐ Reassess the environment for changes that affect the original ORA. Document any additional considerations/controls on the After Instruction Report (AIR) for future reference.

Other Possible Items. Additional items can be added to the checklist if deemed necessary by the FLC.

Approving Signature and Date. A space is provided for the designated approving authority's signature and date. The Formal School's SOP will dictate who approves the Instructor Preparation Guide.

4005. CONSTRUCT TESTS

SECTION 5

Tests are designed to evaluate if the learner has the knowledge and skills required to master the objective or task. Back in the Design Phase, test items were developed for each learning objective. Now, based upon the course structure and when specific learning objectives are to be tested, the test is constructed. Before going into the steps for constructing a test, there must be an understanding of the methods of tests, purposes of tests, and the types of tests.

METHODS OF TESTS

Knowledge-Based Test

As was discussed in Chapter 2, Section 2207 of the Design Phase, knowledge-based testing can be done through oral or written tests. This method of testing does not evaluate the student's ability to perform the required job skills; however, it does determine if the student knows how to perform the required job skills. Two advantages of this method are its high degree of objectivity in scoring (the capability of measuring a large numbers of facts, ideas, or principles in a relatively short time) and the convenience in the development of statistical analysis. There are a number of factors that force schools to administer knowledge tests: time, cost, safety, and resource constraints that do not always permit performance-based testing.

Performance-Based Test

This evaluation deals with the assessment of technical skills, usually physical/motor skills. It usually deals with physical performance that follows a procedure or sequence of steps, which is called a process, or the end result, which is called a product. A test item that requires the student to replicate a task that is performed on the job is considered performance-based. A performance-based test will usually have a checklist that clearly defines the steps or procedures that must be completed to master the objective. In some circumstances, a written test can be considered a performance-based test if the student actually performs that item on the job. For example, filling out a DD Form 214 is a valid performance test for a student who actually fills those out on the job. A performance test duplicates the actual behavior by using the same equipment, resources, setting, or circumstances that the student will encounter on the job.

MCTIMS Student Evaluation Module (SEV). The SEV module is part of MCTIMS and is a web-based application used to construct tests, record test data, track student scores/GPA's and generate reports. MCO 1553.2_ Ch. 5 par. 2a(5) directs the SEV will be used to the fullest extent possible.

CATEGORIES OF TESTS

There are different purposes for giving tests. Below are some categories of testing along with their purpose. Since criterion-referenced testing is the preferred method of evaluation for the Marine Corps, more focus has been given to it.

1. **Criterion-Referenced Test.** These tests are used to evaluate the student's accomplishment of the criterion objective and to determine the effectiveness of the instructional system. Criterion-referenced tests are composed of items based on specific learning objectives. Each individual's ability to demonstrate mastery of the learning objectives is measured. The learner's achievement is measured against the predetermined criterion established in the learning objectives.

2. **Diagnostic Test.** The purpose of diagnostic testing is to measure the achievement of the supporting skills and knowledge that contribute to the ability to perform the criterion objective.

3. **Survey Test.** These tests are designed to determine what prospective students already know and can do before receiving instruction. The test is administered while the instructional system is being developed and provides important design data.

TESTING INTERVALS

A student's knowledge and skill level can be tested at different intervals before, during, and after instruction. A pretest, progress test, and a posttest accomplish this.

Different test intervals.

Before
During
After

1. **Pretest.** A pretest is designed to identify how much the student knows or is able to do prior to starting the course. This kind of testing is diagnostic in nature. It provides what level the student is at prior to the course.

2. **Progress Test.** A progress test is administered throughout a course to evaluate student progress and to determine the degree to which students are accomplishing the learning objectives.

3. **Posttest.** The purpose of posttests is to identify/evaluate the effectiveness of instruction and how well the student learned. It is also a certification process. The student's ability to graduate from the course is generally based on posttest results. Therefore, **certification** that the student is able to go out in the real world and perform the job is provided through graduation.

STEPS FOR CONSTRUCTING TESTS

The test items have already been written. Now the challenge is to properly assign and arrange test items, determine the grading criteria, develop scoring method, and develop the testing instructions.

Determining Mastery

Mastery Learning. Criterion-referenced testing is the preferred method of testing for learning objectives taught in the FLC. The criteria for test mastery are established by the learning objectives. The student, when completing a test, receives either a master (pass) or non-master (fail) for each learning objective. The student may be assigned an overall score, but it does not remove the responsibility of mastering each learning objective. Students that non-master a learning objective may receive remedial instruction and retesting until they reach the standard for mastery. The FLC will establish the remediation policy based on school resources (i.e., time, equipment utilization, availability of instructors). Students who do not master the learning objective during the established number of retests could be recycled through the program or dropped from the course. See MCO 1553.2_ Ch. 1, Par. 3, f(5) for guidance on remediation policy.

Determination of Course Mastery. The term "mastery" can be misleading – mastery does not mean or require that students pass with 100%. Students graduating from a course must, however, master 100% of the learning objectives.

Determination of Learning Objective Mastery. A determination is made by the FLC as to what is the acceptable level of performance for mastery of each learning objective. It may easily be that, for some objectives, a score of 60% is indicative of mastery, while for others a score of 90% or higher would be required. The determination is based upon the criticality of the objective. Mastery of all ELOs does not necessarily result in the mastery of the TLO, just as receiving a minimum score on each individual event of the PFT does not necessarily mean that you receive an overall passing score on the PFT.

Assigning Written Test Items

When determining what test items to use, the idea is to measure **all** learning objectives. Formal evaluation of learning objectives is accomplished by testing **each** learning objective.

Informal evaluation of learning objectives is accomplished through class work, homework, quizzes, and practical application. This does not meet the requirement to test learning objectives in the FLC.
There is no established formula for determining the most appropriate number of test items required for testing any given learning objective. However, the guidelines listed below are factors to consider:

Criticality of skill. This refers to how important the skill is in relation to its application to actual job performance.

1. **High:** Skill is used during job performance.
2. **Moderate:** Skill influences job performance.
3. **Low:** Skill has little influence on job performance.

Other Criticality Factors. Refers to a learning objective's/outcome's importance as related to the performance of a job task.

1. **Safety to personnel/equipment: Critical tasks are those which are considered high risk or dangerous.**
2. **Frequency of performance: The more often a task is performed, the more critical it becomes.**
3. **Learning objectives importance to on-the-job performance.**
4. **Learning objectives importance to the overall course mission.**

Criticality of the objective. When both most critical and least critical objectives are measured on the same test, the critical objective should have more items to ensure that the test reflects the critical aspects of the course.

Instructional time allotted to present the material. For example, if the majority of the material covers one objective, then the majority of the test items should cover that objective. This ensures the emphasis in the classroom.

Complexity of the material. The more complex the material is, then the more test items are required to ensure understanding.

Arranging Test Items

When making decisions on how to arrange test items, consider the following:

Test item placement. Test items should be placed on the page so each item stands out clearly from the others. For example, a true or false item that is two lines long would have single spacing with double-spacing between items. A space should separate the stem of multiple-choice items and the list of answers. The answers should be in a single column beneath the stem and should be indented beyond the paragraph margin.

Example of Multiple Choice Item:

1. What are the three Domains of Learning?

    a. Auditory, Visual, Kinesthetic
    b. Intellect, Value, Tactile
    c. Knowledge, Skill, Attitude
    d. Cognitive, Affective, Psychomotor

Arrangement of test items. Items of the same type (e.g., multiple choice, short answer, essay) are grouped together in a test. Individual test items should also be arranged in approximate order of difficulty, which allows the students to progress as far as they can without spending excessive time on difficult items at the first part of the test.

Design. A test is designed so that the majority of the students can complete it. When many students cannot complete a test, efficiency is lost and student morale suffers.

Layout/Format. Below are some guidelines to consider when formatting the test:

1. Space items for easy reading and responding.
2. Provide generous borders.
3. List alternative responses vertically beneath the stem (multiple choice).
4. Do not split an item onto two separate pages.
5. If an answer sheet is not being provided, allow space for student answers.
6. Number items consecutively throughout the text.
7. If separate answers are used, number them so a check can be made for complete sets of materials before and after test administration.
8. Select an arrangement of items that serve the purposes of the test.

EVALUATING THE ASSEMBLED TEST	
1. Relevance	Do the test items present relevant tasks?
2. Conciseness	Are the test tasks stated in simple, clear language?
3. Soundness	Are the items of proper difficulty, free of defects, and do they have answers that are defensible?
4. Independence	Are the items free from overlapping, so that one item does not aid in answering another?
5. Arrangement	▪ Are items measuring the same objective grouped together? ▪ Are items of the same type grouped together? ▪ Are items in order of increasing difficulty?
6. Numbering	Are the items numbered in order throughout the test?
7. Directions	▪ Are there directions for the whole test and each part? ▪ Are the directions concise and at the proper reading level? ▪ Do the directions include time limits and how to record answers?
8. Spacing	Does the spacing on the page contribute to ease of reading and responding?
9. Typing	Is the final copy free of typographical errors?

Assessment of Student Achievement. By Norman E. Gronlund. p. 122.

Developing Grading Criteria

Grading criteria describe the standards by which the student will be measured and factors that will be considered in determining the student's grade on an individual performance or knowledge test/test items.

Uses of criteria. Grading criteria enable the instructor to determine whether or not the student/group has met the objective. Additionally, it provides an unbiased and non-subjective evaluation of the student's ability with respect to a particular area of performance or knowledge. The primary concern of grading criteria should be that it describes what the student is expected to do and what happens if the requirements are not met.

Grading Criteria for Performance Evaluations. The creation of grading criteria may be the most critical step in performance evaluation test development because it ensures standardized grading. The scoring guide contains a description of each step or group of steps to be graded. A pass/fail checklist describes in detail what constitutes satisfactory and unsatisfactory performance. Grading criteria for the course is a factor if the course is graded Mastery or Non-mastery; a checklist may be the most appropriate to use. If the course is graded with a numerical grade, a rating scale may be the most appropriate to use. When defining the checklist steps and rating scale decisions, all behaviors have to be written in sufficient detail so that all tasks are as precise as possible. The more completely the behaviors are described, the more effective the Job Sheet Checklist/Rating Scale will be. This helps remove instructor subjectivity from the grading process. Performance and knowledge-based testing should not be combined. Multi-part tests can be constructed in MCTIMS to support situations where both forms of testing are needed.

Other important grading criteria factors should include:

1. Compliance with required safety precautions.
2. Correct operation of equipment after completed assembly.
3. Physical testing if the job is finished.
4. Time required completing the job.
5. Skill in using tools.
6. Care and use of the equipment.

Develop a Scoring Method

Manually graded. A key or template needs to be developed to eliminate any subjectivity in the scoring process. Ensure this item is safeguarded against compromise. The essay test requires different scoring criteria. A model answer is required that lists all essential data a knowledgeable student can be expected to provide. This model is used as the standard answer by which all other answers are scored and the worth of each item or part of an item is set.

Automated grading system. Some schools utilize bubble sheet scanning devices to do automated grading. Future upgrades to the Student Evaluation Module of MCTIMS will provide an interface between systems so grades can automatically be fed to Student Evaluation.

RULES FOR SCORING ESSAY ANSWERS
1. Evaluate answers to essay questions in terms of the learning objectives being measured.
2. Score restricted-response answers by the point method, using a model answer as a guide.
3. Grade extended-response answers by the rating method, using defined criteria as a guide (Rubric).
4. Evaluate all the students' answers to one question before proceeding to the next question.
5. Evaluate answers to essay questions without knowing the identity of the writer.
6. Whenever possible, have two or more persons grade each answer.

Test Instructions for the Student

Once the desired test items are prepared, focus on the required information identifying the test. A complete set of instructions, either written, oral and/or by visual aid, must be given to the student. For written tests, a sample test item is given so that students understand how they should answer the question (i.e., circle, write out, "X"). The student instructions should specify the following:

1. References and materials are to be utilized during the test (if any).
2. Any rules for the test (e.g., "No talking.")
3. Time allowed for each section or for the whole test.
4. How to proceed with the test (i.e., individually, from part to part, from page to page or whether to wait for a signal.)
5. Procedures to follow after completing the test.
6. School's policy on cheating.

Student evaluation instructions are covered in Chapter 4, Section 4400.

Test Instructions for the Test Administrator/Proctor

Specific instructions need to be written out to the test administrator/proctor so that there is uniformity in how the test is to be administered. The instructions should tell what is required for preparation in giving the test, how the test is to be administered, and how remediation is handled.

Instructions for Preparing to Give Test should specify:
1. What the testing materials are.
2. Where to gather the testing materials.
3. How many can be tested at a time if there's a limit.
4. Required testing environment (e.g. computer classroom, motor pool).
5. Seating arrangements (if applicable).
6. Prepare a "Testing" placard to be displayed outside the testing environment.

Instructions for Administering the Test should specify:
1. Whether the students can use references or other materials during the test.
2. Inform students of the cheating policy for the school.
3. Amount of time the students are given to complete the test.
4. Whether the test administrator/proctor is to answer questions during the test.

Remediation Instructions should specify:
1. Type of remediation that will be conducted.
2. Where the retest will be located.
3. Procedures for giving retest.

By preparing detailed instructions, the administration of the test is more likely to be standardized. The overall effect of the standardization is more reliable test results on student progress and level of mastery.

4006. CONDUCT VALIDATION

SECTION 6

Validation is a process of trying out instructional materials and course materials prior to implementation to ensure that mastery of the learning objectives is possible and reasonable. Validation involves examining the effectiveness of instructional materials by identifying strengths and weaknesses. The instructional material should be presented to members of the target population to determine its effectiveness. If the instruction does not enable students to reasonably achieve mastery, it is revised until it does.

METHODS OF VALIDATION

There are a variety of methods for validating instruction. Validation of instructional materials should involve as many methods as possible. If all methods are to be used, they should be conducted in the order in which they are presented below. Personnel other than the curriculum developer(s) should conduct the validation to enhance objectivity. The personnel conducting the validation are referred to as **curriculum validators**.

Subject Matter Expert (SME) Technical Data Review

SME technical data review involves reviewing course materials to ensure the technical accuracy of instructional material content. Although the instructional materials are not in final form at this stage, the content should still support the information provided in technical manuals and orders, job guides, and checklists. SME participation will help identify specific problem areas and provide additional technical data.

Curriculum Validation Teams (CVT)

The CVT is a method of validation in which a team comprised of an experienced jobholder, a novice; a supervisor, an instructor, and a curriculum developer meet to review the instructional materials. The curriculum validator will coordinate the meeting as a facilitator only. As with the SME technical data review, the instructional materials are not in final form yet. Each of the participants of the CVT will examine the material from their different perspectives ensuring that materials are technically accurate, instructionally sound, and the learning level is appropriate to the target audience. For instance, a novice can point out gaps in the content that may be unnoticeable to SMEs, or vice versa. If there are disagreements among participants, a technical data review concerning all participants may be assembled to resolve the issue.

Pilot Course

In this validation method, instructional in final form are presented to a target population group. This validation method is important because it takes into account individual student learning differences. Student samples should represent the entire range of the skill and knowledge level of the target population. Instructional materials should be presented under normal environmental conditions. For example, if the materials are intended for classroom use or field use that is the environment in which the trials should be materials conducted. The decision to use a pilot course as a validation method is based on the availability of the necessary members of the target population and time. A pilot course is used at the discretion of the school to validate a developing POI prior to submission to TECOM (within 120 day window of Proof of Concept CDD signature or Direction from TECOM to create a new course). This pilot course must be run with pre-existing school resources, a representative TPD, and not at the detriment of approved courses. Pilot courses are not meant to be run in multiple iterations but simply as a test bed on the validity of a POI prior to submission for approval.

- ☑ **Small Group**. In a small group validation, the curriculum validator presents instructional materials to a small group (2-4 individuals) of the target population to determine if mastery can be attained.
- ☑ **Large Group**. During large group validation, the lesson plan is presented to a group of 5 or more people for validation. Presenting the lesson to a large group allows many people from different learning perspectives to receive the instruction. If time is a constraint, large group validation can be conducted concurrently with implementation.

Validation at First Implementation

This type of validation involves presenting instructional materials, in their final form, to members of the target population at first implementation. In this case, validation and implementation are conducted concurrently for one presentation of a scheduled class. This is NOT the preferred method of validation, and is done only when there is not enough time to conduct validation of materials prior to implementation. Validation at first implementation should only be done as a last resort.

This is NOT the preferred method of validation

TYPES OF DATA

The following are types of data gathered during validations. Depending upon the type of validation, data may vary in quantity.

Data Collected from Students. Student data are collected to determine the attitude of students when they are presented with instruction, particularly anything that kept them from attaining mastery of the learning objectives. Additional student background information including age, time in service, past experience, past academic experience, current job assignment, etc., should also be collected. In the collection of data from students, students should provide their comments on the following:

- ☑ **Length of instruction.**
- ☑ **Comprehension of instruction.**
- ☑ **Student interest/motivation level.**
- ☑ **Realism to the job.**

Instructional Material Data. Information on the effectiveness of the instructional material should be gathered from instructors, SMEs, students, and curriculum developers. These data can include effectiveness of:

- ☑ **Lesson plan.**
- ☑ **Student outline.**
- ☑ **Supplemental student materials.**
- ☑ **Media.**
- ☑ **Tests (see Chapter 5, section 5300, for procedures for analyzing test items).**
- ☑ **Practical applications.**

Instructional Procedures Data. Data on the effectiveness of the delivery system (instructional methods and media) should be gathered from instructors, SMEs, students, and curriculum developers. These data may include effectiveness of:

- ☑ **Method of instruction.**
- ☑ **Order of instruction (training schedule).**
- ☑ **Instructor presentation.**
- ☑ **Number of instructors.**
- ☑ **Instructional setting.**

Test Item Data. During validation, test items should be analyzed to determine if they measure the knowledge or, skills required of the learning objectives. Test items should also be analyzed for reliability to determine if they produce consistent results. This is done through a process called test item analysis. Test item analysis is a set of procedures for evaluating the effectiveness of test items. Item analysis will identify which test items need to be revised or rejected. It is critical to conduct item analysis during validation prior to course implementation to ensure that the test items are valid. Chapter 5, Section 5300 presents detailed procedures for conducting test item analysis.

STEPS FOR VALIDATING INSTRUCTION

Review Formal Learning Center (SOP) Standing Operating Procedures

STEP 1

The information needed to plan validation may be contained in the school validation plan located in the school's Academic SOP. This document may provide additional guidance on types of validation trials, data collection methods, and appropriate authority for approval.

Plan and Schedule Validation

STEP 2

Plan and schedule validation to allow enough time to incorporate any improvements into the lessons prior to the start of the course. This is a critical step that must be well thought out. Validation is planned so that all trials can be conducted, data analyzed, and revisions made prior to implementation of the course. During this step, the type of data to be gathered (see Section 3602) and the type of validation methods (see Section 3601) are determined.

Determine Data Collection Procedures

STEP 3

Once the validation method is selected, determine the system for collecting data. These data may be collected using surveys, questionnaires, interviews, group discussions, observations or other methods (see Chapter 5, Section 5603). Curriculum validators should ask open-ended questions so that participants can genuinely express their feelings, opinions, and perceptions of the effectiveness of the instruction. Curriculum validators must keep in mind that the purpose of validation is to obtain information that will improve instruction.

Implement Validation Plan

STEP 4

Using the validation methods planned in Step 2 and the data collection procedures identified in Step 3, conduct the validation.

a. **SME Technical Data Review**. Provide SMEs with instructional materials or instructional material content. Directions should be provided as well as the objectives of the validation.

b. **CVT**. The curriculum validator gathers members for the CVT and serves as the facilitator of the meeting. The curriculum validator should ensure the following:

- ☑ All participants contribute to the meeting.
- ☑ Recommendations for revisions are understood by all participants and are recorded.
- ☑ Any other feedback concerning the effectiveness of instruction is collected and recorded.

c. **Pilot Course Trial**. A pilot trial is the most comprehensive and time-consuming validation to conduct. It involves conducting an actual class with a group of students within or similar to the target population group. To conduct a pilot trial, the curriculum validator will:

- ☑ Gather students from the target population to receive the instruction.
- ☑ Arrange the instructional setting as it will be arranged for the actual implementation of the class.
- ☑ Identify and brief instructors who will participate in the field trial.
- ☑ Develop questionnaires to collect data from students and instructors concerning their attitudes toward the effectiveness of instruction.
- ☑ Ensure the instruction is conducted as it will be implemented.

STEP 5

Interpret and Record Validation Results

Interpret and record data from the validation. Since there is no specific format for doing this, curriculum validators should record the results in a manner that meets their validation objectives. For example, data can be summarized in a brief paragraph annotating how many comments were made and the trends found detailing instructional strengths and deficiencies. If the data were collected using a scaled rating system, the answers should be averaged and presented as an average response for each question. This summation should also include recommendations for solutions to correct for instructional deficiencies. See Chapter 5, Section 5300 for detailed procedures concerning the analysis and interpretation of data.

STEP 6

Report Validation Results

Once validation data is collected and the results are summarized, make recommendations for correcting problems. The summarized results will indicate what materials, methods, or media need revision report the validation results to the validation authority for approval.

VALIDATION AUTHORITY

The responsibility for validation of instruction ultimately rests with the FLC commander. The method of validation is based on resources available. The commander provides guidance on conducting validations through a validation plan, usually found in the Standing Operation Procedures (SOP). The plan will identify who has validation authority. Decisions about how to validate are based on resources, as outlined in the table below.

For example, the following decisions concerning validation must be made by the FLC:

- **What personnel are available to conduct the validation (SMEs, instructors, curriculum developers, etc)?**
- **How many methods of validation (see Section 3402) will be used in validating course material? What specific revisions to instructional materials can be undertaken and still meet the planned course schedule?**
- **How do we obtain members of the target population for validation? If actual members of the target population are not available, then the school director should select individuals with backgrounds as similar as possible to those of the desired target population.**
- **How much time is available? If your time to design and develop a course is limited, you will have to choose a validation method that fits within the time constraints.**

4007. DEVELOP A PROGRAM OF INSTRUCTION (POI)

SECTION 7

Per MCO 1553.2_, every Marine Corps FLC must have an approved Program of Instruction (POI). This approved POI is the schools authorization to conduct a course. A POI documents a formal school's plan for instructing Individual Training Events (ITEs). Specifically, a POI describes a course in terms of structure, delivery methods and media, length, intended learning objectives, and evaluation procedures. It also serves as a historical record that reflects the continual evolution of the course. An important element of the POI is the Course Descriptive Data (CDD) which is section I of the POI. The CDD provides a summary of the course including instructional resources, class length, and curriculum breakdown.

COURSE DESCRIPTIVE DATA (CDD)

Description. An approved POI authorizes the FLC to develop a new course or it authorizes a change to an existing course. The CDD is an important component of the POI and does the following:

- Indicates the school's concept of how the course will meet the training needs as established in the T&R Manual.
- Identifies resource requirements needed to conduct the course from which decisions can be made.

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- ☑ **New Course of Instruction**. A FLC will submit a Proof of Concept CDD and a cover letter requesting approval to add a new course. The cover letter should address why the course is required, what deficiencies it will correct, and why it should be conducted in a Formal School setting. MCO 1553.2_ describes the requirements for Proof of Concept CDDs for new courses.

- ☑ TECOM (FSTD) records the information contained in the CDD along with data collected from the Occupational Field (OccFld) sponsor at Manpower and Reserve Affairs into the Training Resource Requirement Management System (TRRMS) database. TRRMS processes this information and produces a Training Input Plan (TIP) reflecting the annual instructional requirements and a four-year instructional plan for each Formal School.

- ☑ The CDD gives the details for assignment of students to formal courses of instruction. For each course listed on the TIP, TRRMS generates a Training Quota Memorandum (TQM), which is loaded to the MCTIMS Student Registrar module, an automated information system that enables order-writing commands to assign specific Marines to available course seats. These memoranda translate the annual TIP requirement into actual class seat quotas and form the basis for order writing.

3. **Elements of a CDD** (see MCO 1553.2_ Appendix A-1 for a sample CDD). Each element of a CDD, in order of presentation (appearing as items #1 through #24 in a CDD), is addressed below:

Course Title. The course title must appear as it is listed in MCO P1080.20_ (JUMPS/MMS Codes Manual) unless a change is required or the POI is for a new course.

Location. Record the complete address for each location the course is taught.

Marine Corps Service School Code (SSC). The SSC must correspond to the SSC listed in MCO P1080.20_ (JUMPS/MMS Codes Manual). If the course is new, record "To be determined."

Other Service Course Number. Use other pertinent service course numbers as provided by other branches of the military. If other service course numbers are not applicable, record "NA."

Military Assistance Program Articles and Service List Number. The military assistance program articles and service list number is a seven digit alphanumeric code used to identify a course intended for foreign military instruction. If this type of instruction is not applicable, record "NA."

Purpose. Include a concise statement about the goals of the instructional program.

Scope. Provide a list of the main subjects covered in the course. The list should be comprehensive to include all topic areas. A list of the T&R events covered by the POI must also be included with the CDD as the task list.

Length (Peacetime). Record the total number of instructional days required for the course. Per MCO 1553.2_ Ch. 1 Par. 6 the peacetime instructional week includes an average of 40 hours (8-hour day x 5 work days). Do not include holidays or weekends where instruction does not occur. TECOM FSTD will reconcile any exceptions, such as holidays, by comparing the number of instructional days to the TIP.

Curriculum Breakdown (Peacetime). Provide a breakdown of the curriculum in academic and administrative hours (see Section 3101). The Peacetime instructional week includes an average of 40 hours (8-hour day x 5 work days), 35 of which will be academic time (Administrative time exceeding five hours per week must be conducted after hours or justified in a waiver request). For detailed organizational and tracking purposes of instructional hours, academic hours should be further broken down into methods (e.g., practical application, lecture, demonstration, performance evaluation, written evaluation). Administrative hours should also be broken down into appropriate methods. See MCO 1553.2_ Ch. 1 pa. 3f

Length (Mobilization). Record the total number of instructional days required for the course during wartime mobilization. During mobilization, the instructional week averages 60 hours (10-hour day x 6 days). For courses on three shifts with equipment or facility constraints, the mobilization instructional week averages 48 hours (8-hour day x 6 days). This time includes both academic and administrative hours. If the course will discontinue upon mobilization, enter "NA." If the course length is the same during mobilization as in peacetime, click "Same as peacetime."

Curriculum Breakdown (Mobilization). Provide a breakdown of the curriculum in academic and administrative hours for mobilization. During mobilization, it is likely that academic hours will increase and administrative hours will decrease. If the course will discontinue upon mobilization, enter "NA." If the curriculum breakdown is the same during mobilization as in peacetime, click "Same as peacetime."

Maximum Class Capacity. Record the maximum number of students who can receive instruction using available resources. Resources include classrooms, messing, billeting, equipment, budget, and personnel available.

Optimum Class Capacity. Record the number of students per class that can take maximum advantage of all the resources (e.g., facilities, equipment, instructional capabilities) available to the school.

Minimum Class Capacity. Record the minimum number of students per class that will make the course cost effective.

Class Frequency. Record the number of classes required to support the TIP for the current year.

Student Prerequisites. List the prerequisites that personnel must meet to attend the course. This information can be found in the Target Population Description (TPD) developed in the Analysis Phase and filed at the school.

MOS Received. Record the Military Occupational Specialty (MOS) assigned to the student upon successful completion of the course. If the course does not result in an MOS assignment, record "None."

Quota Control. Record the name of the agency managing course quotas. The OccFld sponsor can provide this information if they are not the controlling agency.

Funding. Record the name of the agency that funds temporary additional duty incidental for students attending the course. In those instances where the using agency must also bear cost, an explanatory statement must be contained in this section. Courses are funded from a variety of sources, depending upon a number of factors such as student type, length of course, and career track. Basic guidelines for schools to determine the funding source are:

a. Courses over 139 days or 20 weeks at one location are PCS and funded by MMOA/MMEA.
b. Courses less than 139 days or 20 weeks may be unit-funded or TECOM-funded.
c. Entry-level pipeline students – normally funded by MMOA or MMEA.
d. Lateral Move students – may be unit-funded or TECOM-funded.
e. Reserve students – normally funded by MARFORRES.

Reporting Instructions. Designate to whom the student will report when arriving for a course of instruction, to include information on transportation and directions (both during and after working hours). Contact phone numbers, fax numbers, organizational e-mail, and website addresses are elements that are to be included. Also include a statement indicating the availability of government billeting and messing. Provide telephone number and office contact information to obtain billeting reservations or confirm that government quarters are not available. If there is more than one school location, include a separate set of instructions for each location.

Instructor Staffing Requirements. Instructor staffing requirements are based on the academic course hours and computed in accordance with ITRO agreements, and are automatically computed by MCTIMS in the Instructor Computation Worksheet of the POI. Although instructor-staffing increases may be validated based on an approved POI, the POI itself will not generate a table of organization (T/O) change. A Table of Organization Change Request (TOCR) must be submitted with the POI to CG, TECOM G-1 requesting a T/O change.

This section of the CDD lists the school's T/O number and its date, and the instructor and instructor supervisor billets by line number, grade, billet name, MOS requirements, and number, indicating those line numbers not currently filled. The Instructor Computation Worksheet (ICW) used to compute requirements should be included as an appendix to the CDD with the POI. Additional comments as to whether the billet is filled or not, are required.

For FLCs located at another service's location, refer to MCO 1580.7_ and compute instructor-staffing requirements using the Inter-service Training Review Organization (ITRO) manpower computation formula. The ITRO Manpower Analysis Subcommittee Procedures Manual detailing this formula may be obtained by contacting TECOM G-3.

PROGRAM OF INSTRUCTION (POI)

The POI serves as a FLC plan for implementing and evaluating a formal course of instruction. A POI is the management tool for conducting a course. At a minimum, a FLC must have a locally approved (by signature of FLC commander) POI for every course of instruction it delivers. For each school, the POI is used as an important element in the documentation and historical record that reflects the evolution of a course. Accordingly, a copy of the POI is maintained at the school to document this evolution

POI Development Process. Using the information from the approved CDD, the FLC will develop the POI. MCO 1553.2_, details management of Marine Corps FLCs, contains POI submission and approval requirements and procedures. The curriculum module of the Marine Corps Training Information Management System (MCTIMS) is used to develop the POI.

POI Content Requirements. Development of the POI primarily involves the consolidation of materials produced during the Analysis and Design Phases. MCO 1553.2_ mandates minimum POI content requirements. Any additional items to the POI must be cleared for inclusion by TECOM (GTD/ATD) prior to submitting the POI.

POI requirements listed in order:

(1) **Title Page**. The title page provides information necessary to identify the document. This includes the course title, SSIC, school name/address, and effective date. The effective date is left blank until the POI is approved, then the date approved is recorded. Each time a revised POI is approved, the new approval date is recorded.

(2) **Certification Page**. The signed certification page signifies that the CG, TECOM has reviewed and approved the POI. The approved POI directs the school commander/director to implement the course of instruction. Local approval of POIs is not authorized.

(3) **Record of Changes Page**. The record of changes page is a chronological log of all changes made to a POI. Each entry must indicate the change number, date of change, date received, date entered, and the signature of the individual entering the change.

(4) **Table of Contents**. This table details the content of the POI and is arranged by section number and section title. The table of contents should include by section the following: CDD, Summary of Hours, Scope of Annexes, Concept Cards, Student Performance Data, and Distribution List.

(5) **CDD**. Section I of the POI consists of the CDD with preface. The preface should include a brief purpose statement and the address where comments and recommendations concerning the POI may be sent. The 24 elements of the CDD provide a summary of the course.

(6) **Summary of Hours**. Section II of the POI consists of a summary of the course. Included are two items: a breakdown of the academic and administrative hours, and revision data.

☑ All academic hours are organized by using annexes. Annexes organize the concept cards contained in the POI into chapters or topic areas. Annexes can duplicate the functional areas ITE/T&R are organized by or they may be some other organizational grouping determined by the developer of the POI. Annexes A-Y are for academic concept cards and annex Z is reserved for administrative concept cards. Due to MCTIMS' automatic calculations of academic and administrative hours from each concept card, the totals shown in this paragraph will match the instructional hours represented on the concept cards and the curriculum breakdown in the CDD (items #9 and #11).

☑ Revision data is listed by lesson designator, lesson title, and lesson time expressed in hours. The previous and current lesson designators and hours are listed (when applicable) and rationale is provided for each change to these items.

(7) **Scope of Annexes**. The scope of annexes carries a subheading, academic subjects, and details a description of the scope of each annex contained in the POI. If there is a difference in the scope between the conduct of the course during peacetime and mobilization, it must be annotated here.

(8) **Concept Cards**. Section IV of the POI is made up of the concept cards. Concept cards comprise the bulk of the POI and provide a snapshot of all lessons, examinations, and administrative events. An introduction is provided to explain the description of the contents of the concept cards, the location of learning objectives report, and summaries of instructional hours.

See section 3200 concerning concept cards.

(9) **Student Performance Evaluation**. Section V of the POI documents the scope of the evaluation, standards for successful performance, and evaluation procedures. Refer to the school SOP and for guidance on specific evaluation procedures. Student evaluation must be detailed and include, at a minimum, the evaluation philosophy (mastery/non-mastery/GPA), methods of evaluation (e.g., written, performance, remediation), Fitness Reports (if applicable), Pro/Con marks (if applicable), disposition of academic failures (recycle/MOS re-designation procedures).

Distribution List. This section details who receives the POI.

4008. ASSEMBLE A MASTER LESSON FILE

SECTION 8

A Master Lesson File (MLF) is a compilation of living documents that are kept in the school to provide everything needed to conduct a lesson. The MLF is kept at the FLC and serves as the central repository for all the instructional and supporting materials for a given lesson. A MLF must exist for each lesson taught. All copies of materials that are created for distribution must come from the MLF. Since the MLF is a living document, it can be altered to fit current doctrine or updated to provide better media, more complete handouts, new methodology, etc. The MLF is constantly being improved and is the most up-to-date file on what is occurring at the school for a particular lesson. Thus, it provides accountability, documents the use of school resources, and most importantly, **provides continuity**.

MINIMUM REQUIREMENTS

In an academic MLF, seven items must be present. For each of these items, there will also be a completed checklist. In a lesson purpose class, the first two items are omitted.

Learning Analysis Worksheet

The Learning Analysis Worksheet (LAW) is required in the MLF because it documents the transition between the T&R events and learning objectives.

Learning Objective Worksheet

We put the Learning Objective Worksheet (LOW) in the MLF because it describes the anticipated learning outcome, provides a test item for each Learning Objective (LO), and contains the selection of methods and media for that specific LO.

Concept Card

A concept card is placed in the MLF because it is a quality control document. The concept card is always located in the Program of Instruction (POI), but for quick reference will be placed in the MLF. The concept card provides a quick snapshot of the class (i.e. learning objective(s), method, media, instructor to student ratio, references).

Operational Risk Assessment Worksheet (ORAW)

The ORAW documents the school plan to conduct training in the safest manner possible. The ORAW documents the 5-step Operational Risk Management process as it relates to the lesson. Refer to and MCO 1553.2_ for further guidance on the preparation of the ORAW.

Instructor Preparation Guide

This document is used to guide the instructor in preparing for the lesson.

Lesson Plan

No MLF is complete without a lesson plan. The lesson cannot be conducted without a lesson plan. The lesson is written in such detail that an alternate instructor, with minimal preparation time, could effectively deliver the lesson.

Student Outline

The student outline will be contained in the MLF.

Supplemental Student Materials

Any other materials used to enhance instruction or student learning during the class should be maintained in the MLF. If the actual copies are not maintained in the MLF, a locator sheet is used to inform the instructor where to locate these materials.

Media

Media and/or a list of supporting papers are placed in the MLF. If the actual media are not contained in the MLF (e.g., films, tapes, wallcharts), supporting papers that list the media required and where they are located should be included. It may be possible to provide paper copies of slides, transparencies, or wallcharts in the MLF. Any copyright authorizations related to the media should also be filed here.

OPTIONAL COMPONENTS

Each FLC's SOP will dictate optional components that must be kept in a MLF.

Some examples of optional components are:

T&R Extract

An extract from the applicable Training & Readiness (T&R) Manual may be included as a foundation to the material being taught.

Approval Signature

Most schools require verification by a supervisor in an official capacity for any or all documents found in the MLF. This can be placed on a separate form that depicts whose signature is necessary for approval.

Other Course Related Materials

Any other item dictated by local SOP should be contained in the MLF. These items may include items such as test, training area requests, and other items applicable for use during the lesson that aid in the delivery or evaluation of that particular class.

STEPS FOR ASSEMBLING A MASTER LESSON FILE

STEP 1

REVIEW MCO 1553.2 AND LOCAL SOP

Review the current copy of MCO 1553.2 (Marine Corps Formal Schools and Training Detachments) along with your school's SOP to determine the requirements of the MLF.

STEP 2

GATHER DOCUMENTS AND CHECKLISTS

Gather all documents along with their blank checklists once you have determined your requirements.

STEP 3

COMPLETE THE MLF CHECKLIST

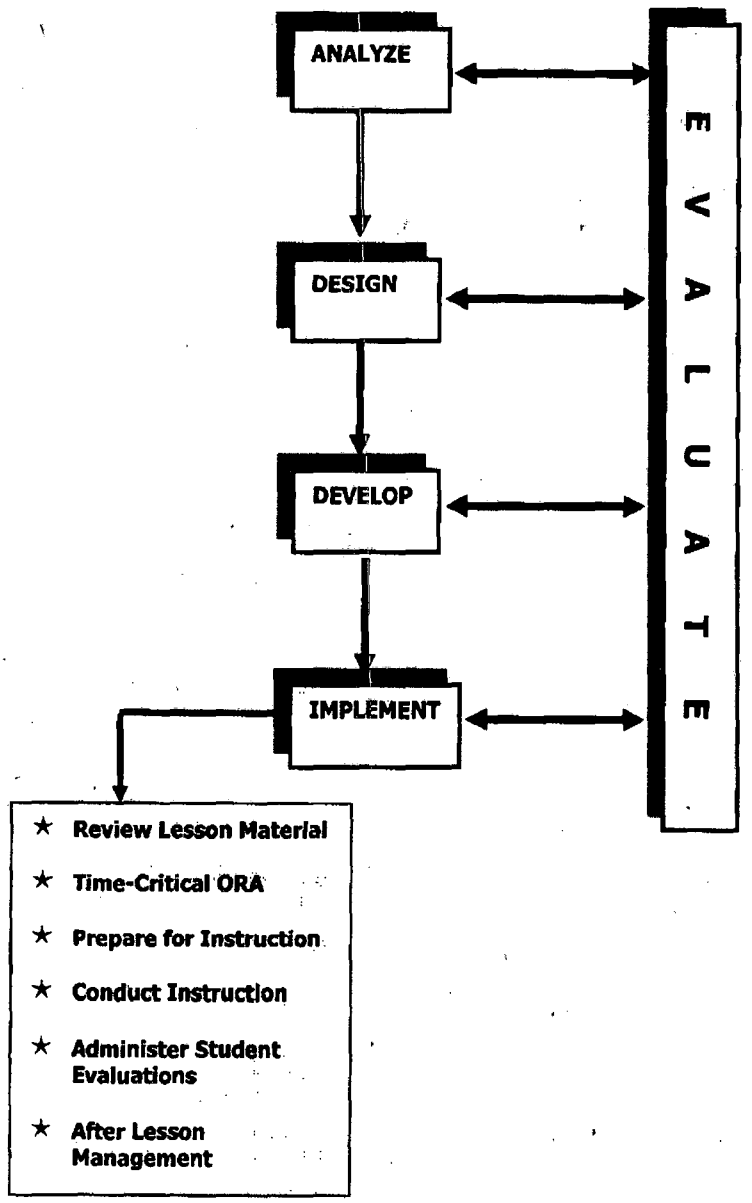
Complete checklists for each component of the MLF. Sample checklists for each component may be found in APPENDIX O of the MCO 1553.2_. Similar or additional checklists to be used for the optional MLF components may be mandated by local SOP.

STEP 4

ARRANGE EACH DOCUMENT IN THE MLF

Arrange each document in accordance with your checklist in the MLF. Ensure each checklist is completed to ensure that all required items are included in the MLF.

IMPLEMENT PHASE



In Chapter 5:

Chapter 5

5000. INTRODUCTION

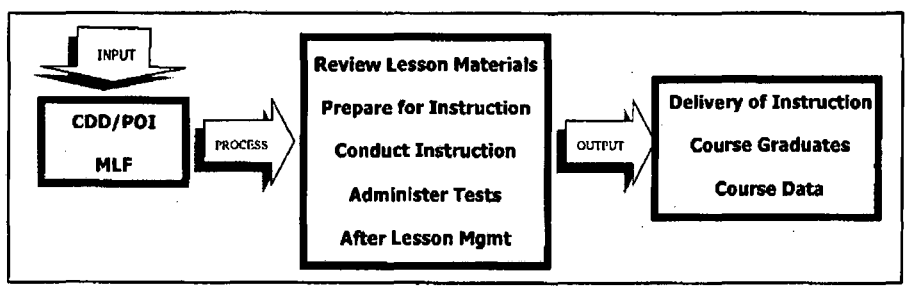
During the Implement Phase the following is accomplished: reviewing the lesson materials, preparing for instruction, conducting instruction, administering student tests, and performing after-lesson management. This includes the instructor reviewing the training schedule and, class materials (to include tests), preparing personnel and the training environment, and conducting rehearsals. Once the instruction has been delivered, the instructor must administer student evaluations to determine if the learning objective has been met. The instructor must conclude the instruction by completing an After Instruction Report (AIR) to document the course data for later use in the Evaluation Phase.

PURPOSE

Using the curriculum produced during the Develop Phase, the instructor executes the instruction during this phase. The purpose of the Implement Phase is the effective and efficient delivery of instruction to promote student understanding of material, to achieve student mastery of learning objectives, and to ensure a transfer of student knowledge and skills from the instructional setting to the job. This is accomplished by effectively implementing the POI that was designed, developed, validated, and approved during the previous phases.

The Implement Phase is made up of five separate sections, each of which has a specific purpose.

1. **Review Lesson Materials.** This section provides guidance on reviewing lesson plans, student materials, media, Operational Risk Assessment Worksheet (ORAW), Instructional Preparation Guide (IPG), and tests when preparing to conduct a lesson.
2. **Time Critical Operational Risk Assessment.** The Time-Critical Operational Risk Assessment addresses preparing and reacting to changes in the instructional environment that affect safety.
3. **Prepare for Instruction.** This section addresses preparing the instructional environment, rehearsing, and preparing for instructor evaluations.
4. **Conduct Instruction.** This section addresses effective communication, steps in conducting a lesson, and how to employ instructional methods.
5. **Administer Student Tests.** A step-by-step process for administering student tests is provided in this section.
6. **After Lesson Management.** This section provides the responsibilities of an instructor after the lesson.



5001. REVIEW LESSON MATERIALS

SECTION 1

Reviewing lesson material involves all those activities that instructors must perform before preparing and conducting instruction. Instructors must have a clear understanding of all aspects of the lesson. This is accomplished by reviewing the course/training schedule, the MLF, and tests. By reviewing these items, the instructor can identify any conflicts, questions, or potential problems before the rehearsals begin. More importantly, the instructor can make required adjustments prior to delivering the instruction to the students. The instructor must ensure the lesson plan, student materials, and media all have the same information.

REVIEW COURSE/TRAINING SCHEDULE

The instructor should review the schedule as early as possible before instruction begins. This allows the instructor ample time to deal with any conflicts or problems. By reviewing the schedule early, the instructor has time to schedule resources (i.e., ranges, weapons, or transportation), rehearsals (i.e., a dress rehearsal in the instructional setting), and any administrative requirements (i.e., printing of student materials).

REVIEW LESSON PLAN

Detailed lesson plans ensure that the instructor has all the critical information needed to maximize student learning. The purpose of reviewing the lesson plan is to ensure it contains all of the required components; to match the learning objectives to the information in the lesson plan; and to personalize the lesson plan to the instructor's style of delivery. After reviewing the lesson plan, the instructor should fully understand lesson content and have confidence in the detailed script that allows for the smooth and effective delivery of instruction.

Lesson Plan Personalization. The instructor will be provided with the approved lesson plan for the block of instruction. The instructor personalizes the lesson plan, tailoring it to his or her style of teaching. Lesson plan personalization allows the instructor to make the class unique without deviating from the approved content. Personalization includes adding subject matter details, related personal experiences, and discussion topics which may be needed to cover the topic in greater depth. Personalization also includes the addition of notes to indicate when 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 media, or additional student/instructor activities to enhance the lesson.

Personal Experience. Relate personal on-the-job experiences to the lesson to increase student interest. Relating 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 personalization for each lesson. For example, if the lesson is on the way sound waves travel through air, but the class has difficulty understanding that concept, then perhaps an analogy, such as "it is similar to the way waves travel through water after a stone is dropped," will help them understand.

REVIEW STUDENT MATERIALS

Student materials assist the instructor in the delivery of instruction by providing tools that stimulate the learner and reinforce key concepts. An instructor influences the transfer of learning by the way the content of the Master Lesson File (MLF) is used. There are two types of student materials; student outlines and supplemental student materials. All student materials must be reviewed to ensure they match and support the lesson. Using outdated and irrelevant material must be avoided at all cost. The students' performance and motivation will suffer when knowledge and skills are received that no longer pertain to the job.

Student Outlines. The student outline is the primary document that supports the instruction. This outline provides the student with a general structure to follow during the class and a conceptual framework that highlights the main ideas of the class. The primary purpose for reviewing the student outline is to ensure it is written in proper terms for the student, not the instructor, and to verify that it contains all required components.

Supplemental Student Materials. Supplemental student material is any material, in addition to the student outline, provided to the student prior to or during instruction. Supplemental student materials may include advance handouts to prepare the student for class (e.g., orientation material), answer keys to quizzes, additional articles for reading, and reference materials (e.g., technical manuals, graphs, charts, formulas, figures, and maps). The use and number of supplemental student material is optional, and can be presented in any format that will be easily understood by the student. The difference between supplemental student materials and classroom media is that students take ownership of the former, while the latter remains the property of the school. The primary purpose for reviewing supplemental student materials is to ensure the information does not contradict the information contained in the student outline and that it is an essential tool required to meet the learning objective.

REVIEW MEDIA

Instructional media can come in many forms. The primary purpose for reviewing media is to ensure that it matches the information in the lesson plan and will aid in the student's ability to master the LOs.

REVIEW OPERATIONAL RISK ASSESSMENT WORKSHEET (ORAW)

The purpose of the ORAW is to record the results of an Operational Risk Assessment. During the Develop phase of the SAT, an ORAW is developed and then maintained in the Master Lesson File (MLF). An ORAW is required for every lesson. However, some lessons may not have any hazards identified for the lesson, in which case the ORAW will state "No Identified Hazards." Through the ORA, identifiable hazards are listed and assessed, risk decisions are made, controls are developed and placed in the lesson plan, and supervision of the controls is determined. Instructors must identify the ORA and review it for safety issues pertaining to the lesson prior to the conduct of the lesson. The ORA must also contain the Cease Training Criteria (CTC) for the lesson. These criteria detail the circumstances when training must be stopped. The CTC is specified in the safety brief of the introduction in the lesson plan. When there are CTC associated with a practical application or other method, it is reiterated prior to the practical application. For each safety control identified on the ORAW, a corresponding control must be in the lesson plan where applicable. It is absolutely imperative that this information is reviewed for accuracy to ensure the safety of the students during the lesson. Ensure that the ORAW is valid by looking at the approving signature and date. Any problems concerning the ORAW (such as acquiring resources necessary to implement controls, etc.) must immediately be brought to the attention of the appropriate authority. MCO 1553.2_ contains guidance on conduct of ORM.

REVIEW INSTRUCTOR PREPARATION GUIDE (IPG)

The Instructor Preparation Guide is a required element of the Master Lesson File (MLF). This checklist is created to provide the instructor with information that is critical to the preparation for implementing the lesson. Detailed information is given so that the instructor understands what resources are necessary for the lesson. Much of the information provided under administrative information is copied from the concept card. Though this checklist is an MLF item, instructors can make a copy so that they can check off items when preparing for the lesson.

REVIEW STUDENT TEST

The primary purpose for reviewing the student test is to ensure the instructor has a complete understanding of how the students will be evaluated. Every block of instruction begins with an introduction. One of the steps in the introduction is to explain how the students will be evaluated. By reviewing the test, the instructor will also determine if the test items are supported by the content of the lesson plan, instructional materials, and student materials. The instructor must never use this information to teach specific test items or questions.

SECTION 2

5002 TIME-CRITICAL OPERATIONAL RISK ASSESSMENT (ORA)

When instructing in the classroom, the need for Operational Risk Management (ORM) is paramount. Instructors are entrusted with the safety of the students. For this reason, ORM is needed in every aspect of training, whether the training is in the classroom or out on the machinegun range. Hazards still exist in the instructional environment. That is why the curriculum developer at the schoolhouse has done an in-depth Operational Risk Assessment (ORA) and placed a report of the assessment in the Master Lesson File (MLF). Though the in-depth ORA is already done, the instructor can have a significant impact on controlling risk by conducting a Time-Critical ORA prior to commencement of each instructional block.

IDENTIFY CHANGE(S)

Change has been called the "Mother" of all risk. Changes can occur during the preparation of the lesson, during the conduct of the lesson, and during the administration of tests. When talking about changes, what is really being discussed is what can happen in the instructional environment to change the hazards documented in the in-depth ORA that was completed by the curriculum developer. Remember, the instructor is in charge of the class and must ensure the safety of the students. There are several tools that can be used to aid the instructor in preparing for the lesson. Change Analysis and the What If Tool (WIT) will help identify changes or potential changes. Once a change has been identified, a determination can be made to whether the associated hazard is a high or low risk. If the risk is determined to be high, then training is ceased to ensure the safety of the students. If the risk is determined to be low, then the instructor applies a Time-Critical ORA to ensure the safety of students and continue with the training. If possible, enlist the aid of experienced instructors when using these tools. Their experience can shed light into areas an inexperienced instructor may not have thought about.

Change Analysis

Change Analysis is an excellent tool for use in time-critical applications where change has been introduced. It is very simple to use; simply look at a training event and ask, "What is different?" As the name implies, Change Analysis allows the identification and assessment of hazards resulting from planned or unplanned changes to a lesson. Case in point would involve an event that has been thoroughly planned and briefed, but something or somebody introduced some change and the whole plan fell apart. Examples of when to apply change analysis include when assessing the impact of:

- ☑ Resource cuts, to include time, dollars, people or other resources.
- ☑ Changes in weather or the environment.
- ☑ Changes to equipment or supplies, such as a HMMWV truck instead of a 7-ton truck.
- ☑ Changes to the location of a classroom or the number of students attending class.

What If Tool (WIT)

Asking the question, "What If?" may possibly identify additional hazards not even considered by the in-depth ORA. To use the WIT, assume that Murphy's Law applies. Murphy's Law states, "What can go wrong, will go wrong." Remember to consider possible mistakes or problems. Look at the worst-case scenario, even if it does not seem likely to happen. Also, consider the mistakes or problems that are much more likely to happen, but may not be as detrimental. "What-If" questions can be formulated around human errors, process upsets, and equipment failures. These errors and failures can be considered during normal operations and during training activities. The questions could address any of the following situations:

- ☑ Failure to follow procedures or procedures followed incorrectly
- ☑ Operator inattentive or operator not trained
- ☑ Equipment failure
- ☑ Instrumentation calibrated wrong
- ☑ External influences such as weather, fire
- ☑ Combination of events such as multiple equipment failures

Experienced personnel are knowledgeable of past failures and likely sources of errors. That experience should be used to generate "What-If" questions.

APPLY THE 5-STEP PROCESS

Time-Critical Risk Management will suffice only when the risk is low. It is used when there is no need to develop a written Risk Assessment for an evolution, such as would be required for a deliberate or in-depth level of ORM (refer to MCO 1553.2_ Ch. 5 for more information on the In-depth ORA and the 5-step ORM process). It is also particularly helpful in choosing the appropriate course of action when an unplanned event occurs during the execution of a planned operation or training course.

Applying

The Time-Critical level of Operational Risk Assessments is employed by everyone responsible for a conducting a period of instruction to consider risk while making decisions in a time-compressed situation. In the steps of Risk Management, identify the hazard(s), make an assessment by examining probability and severity associated with the hazard, and use the Risk Matrix to determine a Risk Assessment Code (RAC). Next, the instructor must make a risk decision. This only refers to instruction that is not of a high-risk nature, to which the instructor can apply the five-step process. If the risk is low and the decision is to continue training, then the instructor must implement some form of control and supervision to reduce the risk. This has already been done for the instructor in the In-Depth ORA worksheet. However, changes do occur and that is when the instructor needs to apply a Time-Critical ORA. Clearly, the assignments of risk are subjective; different people may assign different values. The point is to increase situational awareness so that a mishap or incident is more likely to be avoided.

SECTION 3

5003. PREPARE FOR INSTRUCTION

The preparation portion of the Implement Phase involves all those activities that instructors and support personnel must perform to get ready for delivering the instruction. To maximize the mastery of the LOs by the learner, instructors must rehearse the lesson, prepare instructional materials, and prepare the instructional environment. This is accomplished by organizing the instructional material and environment in a manner that promotes the smooth exchange of information between the instructor and the students. Prior to conducting instruction, instructors should think about how to influence the following; mastery of LOs, the instructional environment, delivery, facilitation techniques, use of media, and questioning techniques.

INSTRUCTIONAL ENVIRONMENT

Prior to delivering instruction, the instructor must prepare the instructional environment for an organized and smooth presentation to maximize the mastery of LOs. The instructional environment refers to the instructional setting (classroom), media/equipment, support personnel, student materials, and the administrative functions the instructor must perform.

Prepare Instructional Setting (Classroom)

The instructor must ensure that the instructional setting replicates the job setting as much as possible. This is achieved by organizing and placing required equipment or supplies as they would be in the job setting. The instructor must also ensure that the instructional setting is conducive to learning. This is accomplished by ensuring the following:

- **Lighting and ventilation are adequate, media equipment is accessible, and the climate control is functioning properly.**
- **Chairs and desks are available for each student.**
- **Unnecessary distractions are removed.**
- **If an outdoor area is to be used, the instructor must survey the area to ensure it can be prepared per the specific lesson plan and local Standing Operating Procedure (SOP). An alternate site should be designated in the event the primary site cannot be used.**
- **Ensure that all ORM and safety considerations have been addressed.**

Prepare Media/Equipment

The instructor must gather and set up all the instructional equipment and media required for the presentation of the lesson. Equipment can include items such as Digital Video Disc (DVD) players, Liquid Crystal Display (LCD) projectors, computers, etc. Media can include board media (chalkboards, dry erase boards, etc.), established media (actual item/object, printed materials, etc.), computer media (Computer-Based Tutorials [CBT]), Interactive Media Instruction [IMI], etc.), and multimedia (computer aided graphics, audio, video, etc.). Equipment and media preparation should include a review of the following requirements:

- **All the required equipment is operational. If the equipment cannot be repaired or replaced, an alternate media with equipment must be obtained.**
- **The media must be easily seen and heard from any part of the instructional area.**
- **The media are in good condition. The media are appropriate to the subject matter and target audience.**

Brief Support Personnel

Support personnel include assistant instructors, demonstrators, role players, Corpsmen (when applicable), and any other personnel who will be involved in the presentation or support of instruction. The instructor must brief support personnel so that each person's role is clearly understood. Additionally, the learning objectives of the lesson and any needed preparations for instruction must also be briefed.

- **The primary instructor is responsible for ensuring that all personnel are informed when to meet. Some personnel may need to be at the instructional area early to secure and set up equipment or to have student materials in place prior to the start of the class.**
- **Demonstrators should be briefed on their roles and, if time permits, a walk through of the demonstration should be conducted prior to instruction.**

Prepare Student Materials

The instructor must ensure that all materials required by the students are available, in good condition, and ready to be distributed. These may be student outlines (primary documents that supports the instruction) or supplemental student materials (something other than the student outline that is retained by the student after instruction).

Perform Administrative Functions

There are several administrative functions the instructor must address prior to implementation of instruction. The following is a list of some of these administrative actions:

- Verifying the time and location of the class.
- Obtaining the class roster.
- Making arrangements for monitor/visitor seating in accordance with local SOP.
- Ensuring appropriate security or safety measures have been followed.
- Preparing all administrative paperwork for presentation.

Personal Appearance

One of the last things to do before "stepping on the platform" is look in the mirror to check personal appearance. Whether military or civilian, an instructor must make sure that his/her attire is neat and professional. There is nothing worse than an instructor who appears before a class looking sloppy and unkempt, which in most situations distracts the learners' attention from the material.

REHEARSALS

Most people perform best when they are well prepared. The success of any presentation is a direct result of the amount of work that went into preparing it. Rehearsal is the process in which an instructor practices delivering his/her lesson. Rehearsing the lesson will reveal the most effective wording, enhance the instructor's knowledge of the subject matter, ensure a smoother flow of the presentation, and increase the chances for success. Rehearsal also provides the instructor a gauge of how his or her delivery fits the allocated time for the lesson.

Types of Rehearsals

The three types of rehearsals are: individual, small critical audience, and dress rehearsal. Each of these can stand alone; however, preparation is maximized when they are all conducted in sequence.

- **Individual**. The individual rehearsal requires the instructor to practice delivering the material alone. Individual rehearsals can take place anywhere, anytime, and at the convenience of the instructor. Some instructors rehearse on their way to work in their car, in the shower, or while watching television. It is strongly recommended to videotape individual rehearsals when possible.

- **Small Critical Audience**. Upon completion of an individual rehearsal, the lesson should be presented to a small group of people. Emotional attitudes must be considered when selecting the audience. Ensure the people selected will provide constructive feedback. Peers make the best critical audience, but using family members at least provides an opportunity to rehearse in front of an audience. The instructor should be thick-skinned enough to accept feedback at face value. Tape this rehearsal if possible.

- **Dress**. The dress rehearsal should be the final rehearsal and most important of all rehearsals. By this point, every effort should have been made to remove any discrepancies in the lesson. This rehearsal should be accomplished in the instructional setting that will be used when the actual lesson is conducted. Rehearse with all media and equipment that will be used on presentation day. Also, make certain any assistant instructors or support personnel are available to rehearse during the dress rehearsal. As with the other two types of rehearsals, tape this if possible.

How to Rehearse

There are several keys to remember when rehearsing.

Avoid Memorization. Never memorize the lesson because it will give the presentation a canned effect that causes the instructor to appear robotic. Know the outline (conceptual framework), sequence, and the points to be covered, but do not memorize the lesson verbatim (word for word) from the lesson plan.

Below are some recommendations that can help avoid memorization:

- **Read the lesson plan at least twice and highlight words or key phrases that need to be emphasized. If anything is unclear, request guidance from other instructors.**

- **Research the technical manuals and references to broaden knowledge of the subject.**

- **Review all supplemental material.**
- **Print the media (3 slides per page) and write notes on the right hand side of the page. The notes can include key phrases from the lesson, examples, analogies, stories, or anything else that needs to be mentioned or accomplished when that particular slide is displayed. If using a turn chart or transparencies, write notes as well. Once the instructor is comfortable, rehearse without the notes.**

Rehearse by Parts. If there is any part of the lesson that feels uncomfortable or needs more practice, rehearse that part separately until you gain confidence with the material and delivery.

Rehearse for Criticism. After completing the previous step, rehearse the lesson for the sake of criticism in front of an audience. This audience should be instructor peers or curriculum developers responsible for the development of the curriculum.

Rehearse the Whole Lesson. After the instructor rehearses and is comfortable with the different parts, the lesson should be rehearsed from start to finish. An instructor can get a false sense of security when comfortable rehearsing only specific parts. This is essential to ensure that the lesson flows smoothly.

Evidence of Rehearsal

The following are indicators of effective rehearsal. It is important to note that a lack of rehearsal may cause students to form negative opinions regarding the lesson, the instructor's professionalism and abilities, and the course or instructional program. However, proper rehearsal will produce the following positive results.

Presentation Flows Smoothly. If the entire presentation flows smoothly, it is most likely due to instructor rehearsal. Conversely, if the presentation is choppy or disjointed, it can be presumed that the instructor did not rehearse appropriately.

Instructor Appears Knowledgeable. When an instructor appears knowledgeable about the subject matter, it is evidence of rehearsal.

Instructor Appears Comfortable. The next consideration is whether or not the instructor appears comfortable in the classroom. The instructor should know where all the equipment and media are located and the presentation should not be interrupted because the instructor could not operate the equipment or media. If the instructor appears relaxed while delivering the presentation, then he or she most likely spent enough time rehearsing.

Time Limit. Further evidence of rehearsal is the effective delivery of the instruction within the time allocated. If the instructor remains within the time limit, then it is most likely due to rehearsal.

INSTRUCTOR EVALUATION

Evaluation of instructors for the purpose of improving the quality of training is an ongoing process. All instructors should welcome the opportunity to be evaluated by others. Through this evaluation process, the instructor will receive feedback on strengths as well as those areas that need improvement.

Types. Two types of instructor evaluations are conducted: content and delivery. Content evaluations are normally conducted by occupational field subject matter experts to verify the content qualifications of the instructor. Seasoned instructors, who have completed training at Train the Trainer School (T3S), evaluate the instructor's ability to effectively deliver the training. Schools should contact the delivery experts at T3S for specific delivery evaluation support. Further, FLC commanders can request a Curriculum Assistance Visit (CAV) from CG, TECOM (Training Management and Evaluation Section). The CAV team provides expert consultation on all aspects of the curriculum and instruction.

Scheduled or Unscheduled. 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. An unscheduled evaluation permits the evaluator to observe the instructor in a normal mode, which can result in a more realistic appraisal of the instructor. The drawback to an unscheduled evaluation is that an instructor may feel threatened and fail to perform at normal levels. Whether the evaluation is scheduled or unscheduled, the instructor should never switch from their usual performance for the benefit of the evaluator.

Preparing for Evaluation. Instructors need to always be prepared for an evaluation, because they are always being evaluated by their students. Instructors should always view the evaluation process as an opportunity to gather information that will help them become more effective as instructors. A preliminary meeting with the evaluator will aid the instructor in preparation for the evaluation. The evaluator should answer any question the instructor may have and should provide the instructor with a copy of the instrument(s) being used during the evaluation.

SECTION 4

5004. CONDUCT INSTRUCTION

The effective and efficient delivery of instruction is a key point in the SAT process. Although the curriculum developer may have designed and developed the material so that it would maximize the mastery of learning objectives, it is crucial that the instructor present the lesson in a manner that ensures comprehension and on-the-job application. While comprehensive planning and preparation early in the Implement Phase is necessary, it does not guarantee success. The instructor must communicate effectively, conduct the lesson, and manage the classroom during and after the presentation.

EFFECTIVE COMMUNICATION

How an instructor presents information can influence student understanding, retention, and ultimately, on-the-job performance. In conducting instruction, the instructor should adhere to the following effective communication guidelines to ensure the maximum transfer of knowledge and skills to the students.

Communication Process

Communication is the act of sending and receiving messages and providing feedback on those messages. The messages can be verbal, nonverbal, written, or physical. Even a lack of action can be a message. Communication is an on-going process; however it is incomplete if the person with the message does not have a person to receive the message. Therefore, communication is always an exchange between two or more people. In Figure 4-1, the communication model "freezes" the process so that what happens during communication can be examined.

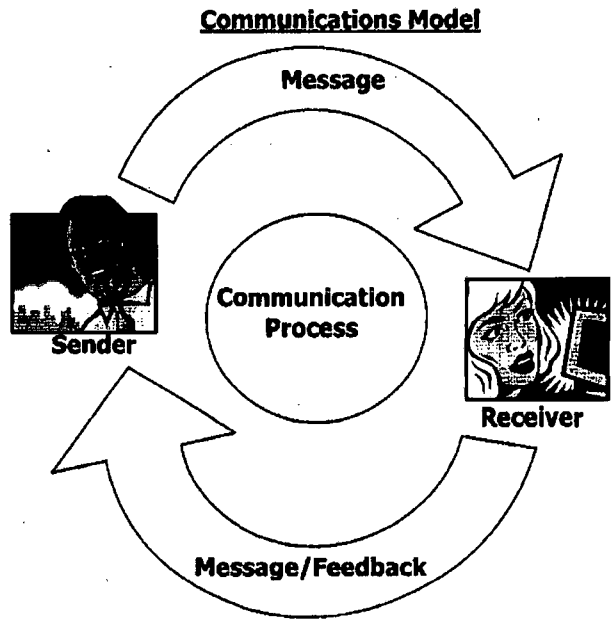


Figure 4-1 Communications Model

Communication Techniques

The communication techniques that instructors must skillfully employ in the classroom are: **verbal, nonverbal, listening, and questioning**. These techniques dramatically affect the students ability to master learning objectives and the instructor's ability to maintain student attention.

1. **Verbal**
2. **Nonverbal**
3. **Listening**
4. **Questioning**

1. **Verbal**. There are eight speech techniques that instructors must be cognizant of when speaking.

   - **Volume**. Volume is the loudness or softness of a speaker's voice. Be sure to adjust your voice to the acoustics of the room, the size of the audience, and the level of background noise. If an instructor speaks too loud, he or she could be perceived as overbearing. If an instructor speaks too softly, students will have difficulty hearing the material and may perceive the instructor as timid or unsure of the content. Remember that the speaker's voice always sounds louder to the speaker than to a listener. If students look puzzled, are leaning forward in their seats, or are otherwise straining to hear, then the instructor needs to talk louder.

   - **Rate**. Rate involves the speed at which a person speaks. The best rate of speech depends partly on the mood the speaker is trying to create. If a person wanted to communicate the experience of mastering the crucible or to express the excitement upon graduation from boot camp, then a faster-than-normal rate may be used. If speech is too slow, it may put students to sleep. If too fast, students may lose track of the ideas that the instructor is trying to convey. Change the rate of delivery to get students' attention and to hold their interest. The rate of speech should be governed by the complexity of the subject and the emotion to be expressed.

   - **Dialect**. Most languages have dialects, each with a distinctive accent, grammar, and vocabulary. Dialects are usually based on regional or ethnic speech patterns. These dialects affect the way people talk in different parts of the country. For example, in the southern U.S., parents may tell their children to stop "squinching" their eyes while watching television and to go clean up their rooms "rat" now. There is no such thing as right or wrong dialect. However, it can be troublesome for the instructor when the audience does not share that dialect. In such a situation, this may cause listeners to make negative judgments about the speaker's personality, intelligence, and competence. Even worse, students may not be able to understand the material being taught.

   - **Pronunciation**. Pronunciation is the accepted standard of sound and rhythm for words in a given language. Below are some of the most frequently mispronounced words in the English language:

Word	Common Error	Correct Pronunciation
genuine	gen-u-wine	gen-u-win
arctic	ar-tic	arc-tic
nuclear	nu-cu-lar	nu-cle-ar
February	Feb-u-ary	Feb-ru-ary

Every word leads a triple life; it is read, written, and spoken. Most people recognize and understand many more words in reading than they use in ordinary writing and about three times as many as occur in spontaneous speech. This is the reason for occasionally stumbling when speaking words that are part of reading or writing vocabularies. In other cases, commonplace words may be mispronounced out of habit. If there are any doubts about the proper pronunciation of certain words, check the dictionary or listen to someone say it properly.

- **Articulation**: Articulation is the delivery of particular speech sounds. Sloppy articulation is the failure to form particular speech sounds distinctly and carefully. Most of the time poor articulation is caused by laziness. Words are habitually chopped, slurred, and mumbled, rather than enunciating plainly. Though it is known that "let me" is not "lemme," "going to" is not "gonna," and "did you" is not "didja," yet we persist in articulating these words improperly. If sloppy articulation is used, work on identifying and eliminating common errors so that thoughts and ideas can be effectively expressed to students.

- **Force:** Use force by emphasizing the correct word or syllable. Placing emphasis on different words or syllables can change the meaning of a sentence. Practice placing emphasis on the underlined word in the following sentences: Why did you join the Marine Corps? Why did you join the Marine Corps?

- **Inflection**: Inflection refers to changes in the pitch or tone of a speaker's voice. It is the inflection of the voice that reveals whether a question is being asked or a statement is being made or whether a person is being sincere or sarcastic. Inflections can also make a person sound happy or sad, angry or pleased, dynamic or listless, tense or relaxed, interested or bored. If all sentences end on the same inflection (upward or downward), work on varying pitch patterns so they fit the meaning of the words. Inflection is one of the keys to expressing something emotional, persuasive, or convincing. Using inflection can make the difference between just saying words and making ideas meaningful.

- **Pause**: Learning how and when to pause is a major challenge for instructors. Even a moment of silence can seem like an eternity. As confidence is gained, however, it will be discovered how useful the pause can be. It can signal the end of a thought, give students a chance to absorb the material, give a speaker an opportunity to concentrate on the next point, and lend dramatic impact to a statement. Unfortunately, many times pet words are used in place of a pause, such as "um," "OK," "er," and "uh." These can become extremely annoying and distracting to students. To minimize the use of pet words, be familiar with the material, be well rehearsed, and make a conscious effort to use a natural pause in its place. Use of a Pause during questioning is crucial to allow the student to gather a thought before responding. Pauses in this situation of 5-10 seconds are normal.

2. **Nonverbal Communication (Platform Behavior).** Communication is not complete without the nonverbal signals that complement verbal communication. The factors of posture, movement, nervousness, gestures, facial expressions, and eye contact can contribute to, or hinder, the communication process.

   - **Posture.** Posture is very important; it shows enthusiasm for the subject. Posture is referring to platform stance. It should be comfortable without being slouchy. Do not lean on the lectern. In fact, it is best to stay completely away from the lectern in classroom instruction. Remember to stand erect with confidence.

   - **Movement.** Move with a purpose. Is movement excessive? Is there a reason for movement? Movement can attract the attention of the listener. Move to convey a thought or as an aid in transitions. The basic rule in use of movement is moderation. Avoid: moving constantly, staying anchored to the podium, standing in one spot, blocking media, dragging feet, swaying back and forth.

   - **Nervousness.** Some nervousness or anxiety is natural and normal. Nervousness causes poor voice techniques and mannerisms.

   Overcome nervousness by:

   - ★ **Focusing on student learning.**
   - ★ **Rehearsing the lesson.**
   - ★ **Having a positive mental attitude.**
   - ★ **Relaxing and enjoying teaching.**
   - ★ **Being organized.**

   - **Gestures.** Gestures are the motions of instructor's hands or arms. The primary rule is this: The gestures made should not draw attention to the instructor or distract from the message. Gestures should appear natural and spontaneous, help to clarify or reinforce ideas, and be suited to the audience. Gestures tend to work themselves out as experience and confidence is acquired. Avoid: flailing arms about, rubbing hands, cracking knuckles, slapping legs, toying with rings, or any other distracting motions. Think about communicating with students and gestures will take care of themselves just as they do in conversation.

   - **Facial Expressions.** Facial expressions can reinforce, modify, or even contradict the spoken word (showing an instructor's thoughts and feelings). Instructors that appear relaxed and express enthusiasm in the subject create a bond with their students and make them feel comfortable (e.g., a smile indicates pleasure). Expressionless instructors are usually unprepared or nervous, focusing too hard on their delivery vice students, uninterested in the subject, or not attempting to make learning fun.

- Eye Contact. The use of the eyes is probably the most meaningful channel of nonverbal communication available. An instructor's eyes convey thoughts and feelings and can open communication, prolong communication, or cut off communication. As eye contact is established, remember to:

(a) Be alert. Be alert for student reactions. Can they hear? Do they understand? A stare used in conjunction with silence can be quite useful in gaining the attention of misbehaving or inattentive students.

(b) It isn't enough to just look at listeners. How the instructor looks at students also counts. A blank or intimidating stare is almost as bad as no eye contact at all.

(c) Try to establish eye contact with the whole class. Some common errors are darting the eyes around the room, looking at the floor or demonstrators vice the audience, or looking at one part of the audience while ignoring the rest. The rule of thumb is to hold the eye contact until communication occurs.

3. Listening. Look at Figure 4-2: notice that on an average day, 9% of our time is spent writing, 16% is spent reading, 30% is spent speaking, and the major portion, 45%, is spent listening. Listening takes in more information and is used more than reading and writing combined.

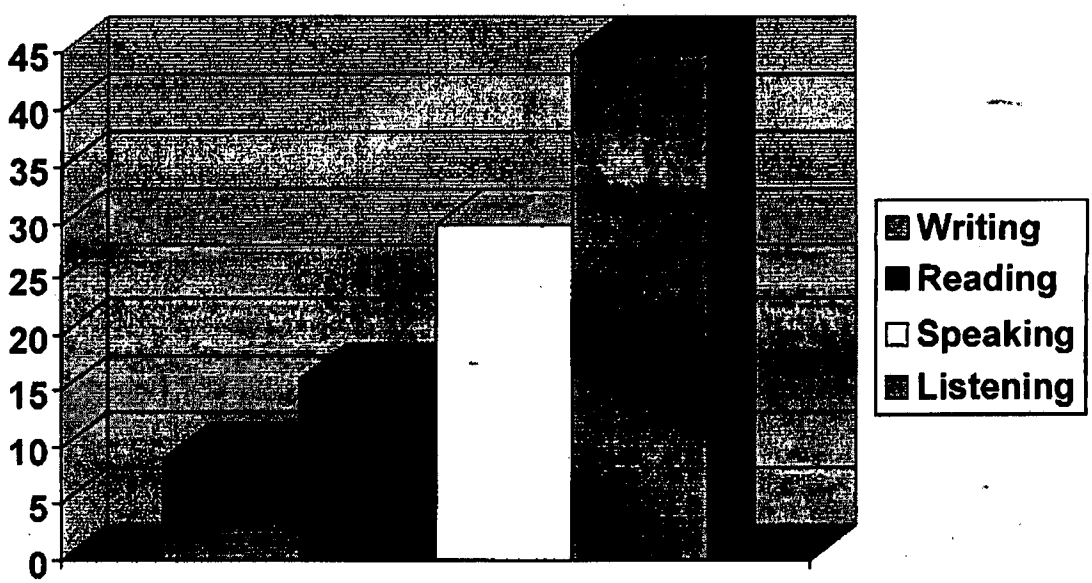


Figure 4-2

- **Definition**. Listening is paying close attention to and making sense of what is being heard. It is the channel used most often for learning. Ironically, it is the least understood function of all. When thinking about listening, the tendency is to assume that listening is basically the same as hearing. This is a dangerous misconception because it leads many to believe that effective listening is instinctive. As a result, little effort is made to learn how to develop listening skills and unknowingly a vital communication function is neglected. Consequently, misunderstandings, confused instructions, loss of important information, and frustration are created.

- **Exercises**. There are exercises that can be performed to increase awareness of listening efficiency. A common exercise is for an individual who will be the listener to pick a person as the speaker and ask that person to do a listening check. The listener will listen to the speaker. The listening check involves summarizing what the listener thinks the speaker said. If the listener is unable to summarize, ask the speaker to help examine what is lowering listening efficiency. Another exercise is simply writing all the sounds heard in a certain time frame. Over a period of time, listening practice should help improve listening efficiency and two-way communication in the classroom.

  (a) **Instructor Barriers to Listening**. As instructors, be aware of signals that give students the perception that you are not listening to them. These barriers interrupt the communication process as the model depicts below.

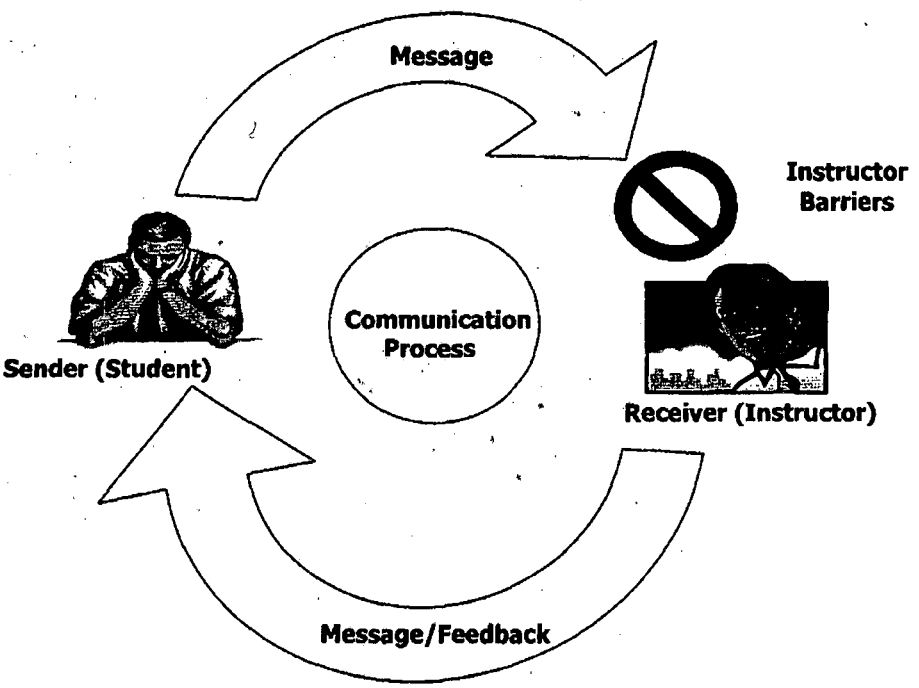


Figure 4-3 Instructor Barriers to Listening

(1) It is important for instructors to orient their body towards the speaker (student) and maintain eye contact when answering or receiving a question.

(2) Folded arms or hands on hips are examples of different types of body language or gestures that can indicate an instructor has a lack of interest in the speaker or may intimidate the speaker (student).

(3) Rolling eyes are some instructor facial expressions that may signal disapproval or disinterest.

(4) Instructor should not allow emotionally laden words to distract him/her during questions. Examples: a student uses the word sex vice gender or WM vice female Marine.

(5) Instructors should avoid using words or phrases that may have a negative effect on students when directed by instructors/fellow students such as: rock, idiot, stupid, lost one, wonder child, you fail to understand, you do this all the time, or are you confused again?

(b) **Student Barriers to Listening**. An instructor must be aware of possibilities that cause student barriers to listening. Below are five reasons for poor listening along with signs that will cue the instructor. This will assist tremendously with identifying these barriers and help minimize the interruption of the communication process.

➔ **Lack of Concentration**. The brain is incredibly efficient. Although we talk at a rate of 120-150 words per minute, the brain can process 400-800 words a minute. This would seem to make listening very easy, but it actually has the opposite effect. Because the brain can take in a speaker's words and still have plenty of spare "brain time," there may be the temptation to give into physical or mental distractions. Concentrating is hard work.

⇨ **Signs:** Lack of eye contact with instructor, tapping foot or pencil, fidgeting, doodling, clock-watching, inability to answer questions, a look of confusion, or lack of involvement in class discussions

➔ **Listening Too Hard**. Listening too hard happens when a student tries to turn into a human sponge, soaking up a speaker's every word as if every word were equally important. Students try to remember all the names, all the dates, and all the places. In the process, students often miss the speaker's point by concentrating on too many details. Even worse, they may end up confusing the facts as well. It is impossible to remember everything a teacher says.

⇨ **Signs**: Student is frantically trying to write down every word; seems frustrated, confused or overwhelmed.

⇨ **Suggestions**: Tell the student to try highlighting the student outline, recording the class, and/or develop note-taking skills. The student should take notes in the form of a key-word outline. It is a rough outline that briefly notes a teachers main points and supporting evidence. Students who take effective notes usually receive higher grades than those who do not.

➔ **Jumping to Conclusions**. This may also be referred to as "putting words into an instructor's mouth." It is one reason why communication is poor between those who are close. A person does not listen to what is being said due to the belief that he/she knows what is meant. Another way of jumping to conclusions is by prematurely deciding a topic is boring or misguided. The student may decide that an instructor has nothing valuable to say. For example, the topic could be on arguments to support women being in combat. If a student disagrees with the precept, the instructor may be tuned out. Nearly every class has something to offer - whether it is information, point of view, or technique.

⇨ **Signs**: Interrupting other students, not enthusiastic, disruptive behavior or lack of concentration.

➔ **Focusing on Delivery and Personal Appearance**. People tend to be judged by how they look or speak. Some people become so distracted by a speaker's accent, personal appearance, or vocal mannerisms that they lose sight of the message. Focusing on a speaker's delivery or personal appearance is one of the major barriers in the communication process, and it is something that always needs to be guarded against.

⇨ **Signs**: Disrespectful to the instructor, know-it-all, distractive behavior.

⇨ **Suggestions**: Apply speaking techniques discussed earlier, class management techniques, rehearse the lesson, and maintain high appearance standards.

4. **Questioning**. By asking questions throughout the lesson instructors can emphasize a teaching point, monitor student comprehension, stimulate thinking, increase interest, and promote student participation. Instructors tend to ask questions in the "knowledge" category 80% to 90% of the time. These questions are not bad, but using them all the time is. Instructors should try to use higher order level of questions as defined by Bloom's Taxonomy of learning. Questions that cause the learner to process, synthesize, and apply the knowledge presented during the instruction lead to better comprehension and application. A key component of effective questioning is to provide a pause once a question is asked to allow the student to assimilate the question and formulate a response.

↳ **Characteristics of a Well Constructed Question**

➔ **Clear** - state questions in language familiar to the students and phrase the question so that the students understand its meaning.

- **Concise** - contains only one idea and is short enough for students to remember (not too wordy).
- **Relevant** - relates to the subject or material taught in the lesson.
- **Thought Provoking** - state so that the answer is not suggested in the question; open-ended (cannot be answered with a yes or no response); answer must not be displayed in the classroom (media); apply Bloom's Taxonomy (range of higher-level questions) as discussed in Chapter 6.

Asking students questions

- ☑ Step 1 - **ASK** the question (call students by name). Ensure the question is well constructed.
- ☑ Step 2 - **PAUSE** to allow the student time to think (5-10 seconds is normal). If the student cannot answer, rephrase the question or redirect the question to another student. For example: "Can someone help him/her out?" or "Sgt Smith, can you help him/her out?" Once the question has been answered move to the next step. Avoid rapid "machine gun questioning" as a way to summatively evaluate the students mastery of the learning objectives.
- ☑ Step 3 - **ENSURE EVERYONE HEARD** the answer. For example, "Did everyone hear his/her answer?"
- ☑ Step 4 - **PROVIDE FEEDBACK.** Inform the class whether or not the answer was correct. For example: "That's right" or "Good job." Avoid saying "wrong answer"; try to rephrase your response. For example: "That wasn't quite what I was looking for; can someone help him/her out?" or "Does everyone agree with that?" or "Does anyone have anything to add to that?" If no one can answer the question, provide the answer and clear up any confusion.

Receiving questions from students. The situation will dictate whether or not Steps 2 and 3 are necessary. Therefore, both steps are left up to the discretion of the instructor (optional).

- ☑ Step 1 - **RECEIVE** the question. Ensure students raise their hands and solicit one student at a time (by name).
- ☑ Step 2 - **REPHRASE**. If the question is unclear, rephrase it or have the student rephrase it. If the instructor rephrases the question, **verify** the student's question before moving to the next step. For example, "Let me make sure I understood your question. You wanted to know if we are off this weekend. Was that your question?" (OPTIONAL STEP)

☑ Step 3 - **ENSURE THE QUESTION WAS HEARD**. State -"Did everyone hear SSgt Hall's question?" If you know the question was obviously loud enough for everyone to hear, then this step may be skipped. If it was not loud enough, then repeat it (paraphrase if needed) or have the student repeat it. (OPTIONAL STEP)

☑ Step 4 - **ANSWER** the question. The instructor can either answer the question or redirect the question to the entire class to allow for student participation. For example, "That's a good question, can anyone answer it?" If it cannot be answered then provide the answer. If the instructor does not know the answer, let the student know that he/she will find out and get back with him/her at the break or after class.

☑ Step 5 - **VERIFY**. Ask the student if the answer provided was adequate. For example: "Did that help you out?" "Did that clear up any confusion?," or "Did that answer your question?"

Facilitation Techniques

Mastery of LOs refers to the extent to which students learned material/skills in the instructional setting that could be readily applied on the job. The instructor influences the transfer of learning through facilitation techniques. The way a lesson is presented will influence the success of the instruction. The instructor should strive to provide real world relevance, focus students, control the lesson, foster motivation, and interact with students. Below is a discussion of each.

(1) **Real World Relevance**. Whenever possible, reproduce the exact conditions between the instruction and the job situation to show relevance. The instructor can also physically organize the instructional environment to create a realistic job setting for instruction.

(2) **Students Focus**. The most common attention getting techniques used by instructors are:

★ **Direct Attention**. Essentially, it consists of directing students' attention to what was said or will be said through the use of verbal statements, gestures, or even a pause. For example: "Know this diagram well!" A combination is even more effective, but be careful not to overuse these techniques. "

★ **Present Concepts from Simple to Complex**. Discuss basic principles and ensure they are understood before introducing complicated details.

(3) **Control the Lesson**. Ensure the objectives of the class are met and that the discussion/questions do not go beyond the focus of the class. In addition, create a comfortable learning environment and use discretion/tact when correcting a student's inappropriate or disruptive behavior so that it is not detrimental to the learning environment.

(4) **Motivation Techniques**. For learning to be effective, students must be motivated to learn. There exists a shared responsibility for motivation between the instructor and the student. The learner controls the desire to learn, and the instructor controls the stimulation. Below is a list of what instructors can do to stimulate motivation in students.

- **Give Recognition**. When students do something worthy of recognition, instructors need to give positive feedback to the student. Such recognition makes the student feel alive, important, and significant.

- **Serve as a Good Role Model**. An instructor has considerable influence over students' motivation through the example that is set. Show them the proper way to complete a task, wear a uniform, or treat students—*PRACTICE WHAT YOU PREACH*. Research indicates that teachers with low self-concepts tend to have students in their classroom with lower self-concepts, and vice-versa.

- **Stimulate Cooperation Among Students**. Modern society places a lot of emphasis on competition. While competition with the self can lead to improved performance as students strive to do their best, competition against others can result in negative perceptions of the self especially if it isolates a person. With cooperation, everyone can experience the success of the group, and no one is viewed as the winner or loser.

- **Consider Mastery Learning**. Mastery is defined in terms of a specific set of major objectives that students are expected to exhibit by subject completion. Using this approach, a student's performance is measured against objectives rather than against the performance of other students. Students learn at different rates, therefore the instructor sets expectations for each individual. This allows time for learning to vary, so all or almost all students achieve the desired level of mastery.

- **Have High but Reasonable Expectations for Students**. There is a considerable amount of research that suggests that students perform to the expectations that instructors have for them. Students develop better in a relationship with someone who projects an inherent trust and belief in their capacity to become what they have the potential to become.

- **Recognize Potential in Students**. Behavioral scientists have concluded that human's function at 10 percent or less of their potential. Negative self-concepts certainly stand in the way of releasing the potential of students.

- **Providing Examples and Analogies**. Providing a variety of examples and analogies when teaching concepts or skills will help solidify the key elements of the material and can further motivate students to learn.

- **Recognizing Individual Differences**. Some students learn at a slower pace than others and some students require different stimuli to become motivated to learn. The instructor must establish an effective student-instructor relationship. It is important that the instructor does not create barriers, but builds a rapport with the students and shows empathy and genuine concern for their learning.

- **Providing Feedback**. Student performance improves when the instructor provides meaningful feedback. Timely and constructive comments about student performance provide recognition of their efforts and help to correct errors. Used appropriately, feedback should clearly specify the action being reinforced and should be believable. Examples: "Good point!" "Outstanding," "Sgt Frost, that's a good idea! Let's discuss what might happen if you implemented that concept." Provide written comments on student assignments about the strengths and weaknesses of the student's ideas/concepts. If praise is used too often or inappropriately, however, it can have a negative effect on the motivation of adult learners.

(5) **Interaction with Students**. Learning is an active process for adult learners. The instructor should strive to involve students in the instruction process. To do so, the instructor should be aware of students' prior knowledge, the context in which the material is presented, how learning will be applied to the job, and the realization that student understanding of new information depends on how well it relates to their prior knowledge. Probe throughout the lesson to increase interaction. Have students answer each other's questions whenever possible, and allow the adult learner every opportunity to take responsibility for his or her own learning.

STEPS IN CONDUCTING THE LESSON

Present the Introduction

STEP 1

- The instructor provides the students with a brief preview of the class by explaining the purpose of the class, reviewing the learning objectives, and describing how the lesson will be taught (including any administrative instructions) and how and when students will be evaluated.

- The first element (Gain Attention and WIIFM) must always be mentioned first, and the remaining elements should be mentioned as a structured event using the acronym **GOLMEST** (Gain Attention, Overview, Learning Objectives, Method/Media, Evaluation, Safety, and Transitions). By employing this sequence, your students will become familiar with the important elements of the introduction and this will help reduce the number of student questions that always seem to pop up about the introduction. The introduction must be completed prior to transitioning into the body of the lesson.

WIIFM – What Is In It For Me? Why do I need to listen to this class?

GOLMEST - (Gain Attention, Overview, Learning Objectives, Method/Media, Evaluation, Safety, and Transitions).

STEP 2

Present the Body

- After presenting the introduction, present the body of the lesson. The body will be presented in the same sequence as the learning objectives in order for the lesson to "flow smoothly."

- Transitions tie together the main ideas in the lesson, smoothly summarizing one main idea and introducing the next one. They essentially form "bridges" that reinforce the conceptual framework, enabling the instructor to probe for understanding and gather feedback from students before opening the next main idea.

- The term "probing" simply means asking follow-up questions to students. Probes can ask for specifics, clarifications, consequences, elaborations, parallel examples, relationships to other issues, or explanations. Probes are important because they help students explore and express what they know even when they aren't sure they know it. You should probe throughout the lesson to assess students' comprehension of the material. You can probe at any time, but the questions must be thought provoking and should not be simple answer questions that simply demonstrate a student's route memorization of a single detail.

STEP 3

Present the Summary

- Once finished with the last main idea, transition into the summary. In the summary, the instructor must mention all main ideas that were covered in the lesson. In addition, provide closure that explains why the student just sat through the lesson. Then provide closing instructions to alleviate any concerns the student may have (i.e., fill out IRFs and take a ten-minute break).

METHOD EMPLOYMENT

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. 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 is used to intensify the learning experiences. All instructors need to understand the following methods and their responsibilities in using them: lecture, indirect discourse, demonstration, reading, self-paced, questioning, non-directed discussion, guided discussion, practical application, field trips, simulations, case study, and coaching. The lecture method and the demonstration method are the two most commonly used in Marine Corps training. However, for purposes of this chapter, the methods are discussed as sequenced above.

Lecture (Formal, Informal, Briefing, Guest)

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 ***formal*** lecture allows instructors to present a subject to a large audience because they use no media and there is no interaction between the students and the instructor. The lecture method depends primarily on student listening and note-taking skills for the transfer of learning. The instructor must have effective speaking skills, an in-depth knowledge of the subject matter, and find realistic examples and analogies to use with explanations. In preparing to deliver a lecture, the instructor must set clear-cut goals and objectives. The instructor should remember that the only feedback received from the audience will be nonverbal communications. Since the audience may lose interest with no active part in the instruction, the lecture should last no more than 30 minutes. Lectures should be short, well organized, and to the point.

- In the ***informal*** lecture, the size of the group is usually smaller than the formal lecture and student participation develops when the instructor questions the students or they question the instructor on points presented. Considerable verbal interaction between instructor and student is often possible in the form of both questions and discussion. The delivery style is even more conversational, with students often addressed directly by name. An *informal* lecture with media is commonly used in the Marine Corps for presenting information, concepts, and principles. Most learning takes place through the sense of sight. It follows then that all students must be able to see the media being used, which will limit class size. The media used can reduce the amount of explanation time required for students to grasp concepts, structures, and relationships. Instructors simply cannot get some ideas across to students without the use of media. For example, think how difficult an explanation of the operation of the internal combustion engine would be without the use of media.

  When using **informal lecture** with media, the instructor must prepare properly. That includes practicing with the actual media in the places they will be used. Instructors should plan the timing of the use of media to keep the students' attention and to stress important points. Since the instructor's explanation of the media will require the use of effective instructor techniques, he/she needs to decide which ones to use. Mentally rehearse those techniques and practice using the media until the lecture can be presented smoothly.

- A ***briefing*** is a formal or informal presentation in which a variety of significant facts are presented as concisely as possible. The briefing is rarely concerned with material beyond the knowledge level and is almost always accompanied by media in various forms. Strictly speaking, the briefing is not a teaching method, but it is sometimes used in school situations.

- A ***guest lecture*** is a presentation by a person other than the instructor who is usually an expert. It is used to give variety to the class period or to supply information in an area where the instructor is not an expert.

Indirect Discourse (Panel discussion, Dialogue, Teaching Interview)

These presentational methods provide situations in which the skill or material to be learned is in some way presented to or demonstrated for the learner. In some presentational methods there is little if any activity or interaction required of students other than their attention and desire to learn. When a question-and-answer period follows the interview, students can interact with the expert.

- A ***dialogue*** is an interaction between two or more persons, one of whom may be the instructor. It is generally used to present sharply opposing points of view for students. The dialogue is often highly structured towards preplanned goals and may take the form of questions and answers between the participants.

- A ***panel*** is a structured or unstructured discussion between two or more experts (generally excluding the regular instructor) presented in a variety of ways, such as constructive arguments followed by debate, response to questions from the instructor or the students, a preplanned agenda, a fixed or a random order of speakers, or free discussion.

- A ***teaching interview*** is when the instructor questions a visiting expert and follows a highly structured plan, which leads to educational objectives. The advantage of the teaching interview over the guest lecture is that the instructor controls the expert's presentation. The expert normally requires little or no advance preparation, but responds on the spur of the moment from general experience.

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 the students need to learn a skill in an effective learning sequence. Though it primarily appeals to auditory and visual learners, it is also extremely effective when used in conjunction with lecture and prior to practical application. This method always includes a demonstration step and a performance step and allows other steps as needed. Use the following techniques when giving an actual demonstration:

- **Position the students and media properly**. Direct the students to gather around a worktable or media and make sure every student has an unobstructed view. Make sure that all students will be able to see and hear the demonstration. This should be accomplished right before the lesson; someone else may have used the classroom and rearranged the setting. A demonstration will not be effective if someone cannot see it.

- **Show and explain the operations**. Perform the operations in step-by-step order. Whenever possible, present the telling and doing simultaneously. Do not hurry; the instructor 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 proceeding 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 time is not wasted. Instead, the instructor has 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 the media used by its proper name each time attention is called 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 actual item/object while it is being 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. Do not depend solely upon visual observations.

- **Obtain necessary assistance**. When teaching skills, such as donning a field protective mask, in which a distinction between right and left is important, utilize an assistant instructor. Ask the assistant to stand so that the class may see what he or she is doing. The instructor should direct the assistant to perform the activity while he/she observes the reaction of the students.

- **Check equipment and tools**. The most important items to check are the equipment and tools that will be used to conduct the demonstration. Ensure all equipment is functioning properly.

- **Rehearse**. When the instructor rehearses, he or she needs to perform the actual demonstration. Rehearsing in the mind is not the same as rehearsing by doing. Rehearsal by doing will reveal possible problems. If an assistant is being used, practice with that person as discussed in Section 4300 (Prepare for Instruction).

- **Start simple**. Always proceed from simple to complex in a 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.

Reading (Books, Periodicals, Microfilms, Manuals, Handouts)

- Reading assignments for students may include the following printed materials: books, periodicals, microfilms, manuals and regulations, and handouts. This is very effective and time efficient method of presenting materials since students can progress at their own pace.

- However, since individuals read at different speeds, keeping the entire class on schedule can be a challenge. Individual reading is also dependent on the availability of resources. Reading is geared for individual instruction and the instructor must be very knowledgeable with the material.

Self-Paced (Programmed, Modular, Computer Assisted, Mediated)

- ***Programmed instruction*** is a method of instruction, which usually includes a carefully planned sequence of small units of instruction that require the learner to respond to cues and receive immediate feedback. Various media (books, teaching machines, and computers) are used to deliver the programmed instruction to the learner.

- ***Modular instructions*** are prepackaged units of instruction which typically contain a clear statement of objectives and all necessary learning resources to permit the learner to achieve these objectives. A module can be a complete unit or part of a course.

- ***Computer-assisted instruction*** is a learning experience that uses a computer as the vehicle for interaction between the learner and the planned course of instruction.

- ***Mediated instruction*** includes such devices as slides, films, tapes, and cassettes used to present the planned course of instruction to the learner.

Questioning (Socratic Method, Student Query)

For those instructors who want to emphasize a point and stimulate student thinking, this method is very effective. It not only keeps the student focused, but it also checks understanding and seeks clarification in the students. Two examples of this method are *Socratic Method* and *Student Query*. Both require a high level of instructor expertise.

- ***Socratic Method***. While rarely seen in its pure form, instruction by asking students questions is a method as old as ancient Greece and as modern as a great books course. The method may resemble a guided discussion, but the goal is often to obtain specific answers to specific questions (reiteration) and not to stimulate discussion. An instructor may use the method for "trapping" students into inconsistencies in logic, which sharpen their thinking skills. Law professors often use the method for "interrogating" specific students using a series of questions as they might be used in a court of law.

- ***Student Query***. "Students asking questions" is often used in combination with other methods such as the lecture, the panel discussion, or the teaching interview, but it can be used by itself, either on a one-to-one basis in tutoring or coaching or as part of small or large groups. The method is student controlled, although a skilled responder can also control the session to a certain extent. Students' questions may often be a measure of the degree of their understanding of a particular subject. That is, they "know enough to ask the right questions."

Discussion-Non Directed (Peer Teaching, Small Group, Free Discussion)

In its original form, the peer-controlled seminar is a group of highly qualified peers (such as a doctoral-level faculty) who meet periodically for the exchange of ideas, usually in the form of prepared papers with discussion or questions following. The research seminar resembles a peer-controlled seminar when the instructor allows qualified students to lead the discussion with the instructor providing proper supervision. A peer often acts as a "facilitator" to lead discussions or conduct workshops. When used, the instructor should provide a statement of the educational objectives, a suggested discussion guide, and should require some tangible evidence of the results of the discussion.

Guided Discussion

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

- This method involves an interchange of ideas by the students while the instructors 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 instructor 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 formal lecture. The 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.

Practical Application

This is a method of practice used to reinforce a skill or a task as it relates to the work place. ***This is not an examination.*** The student should be supervised and then provided feedback to determine if more practice is needed. This method generally follows an instructor demonstration and the student replicates the instructor demonstration alone or in groups.

- **Individual/Group Projects**

  (1) **Determine Size**. Determine whether or not the exercise will be accomplished on an individual basis or in groups.

  (2) **Adequate Space**. If the lesson will be conducted in a classroom, make sure there is adequate room for the students to perform any necessary skills. If it is outside, ensure the area is clear and safe.

  (3) **Double-Check**. Double-check the materials, equipment, and tools the students will be using when conducting the practical exercise. Ensure all the material is current and available. Also, ensure the equipment is functioning properly.

- **Supervise, Observe, Help**. The job of the instructor is to supervise, observe and provide help. The instructor or assistant instructors should supervise to facilitate learning, watching the students and correcting any mistakes made during the exercise. It is a good idea to talk to your assistant instructors to determine if they have observed anything additional.

Field Trips

Field trips are extensions of classroom instruction and provide worthwhile learning opportunities for students to participate in unique and enriching educational experiences. Instructors should develop systematic procedures for ensuring that all trips provide optimal learning opportunities for students. The following minimal procedures should be used when conducting field trips:

- Identify any special requirements for participation on the trip—special skills, fitness, certification—as well as any hazards or dangers on the trip or at the site that might affect the health and safety of the students.

- Obtain approval where appropriate.

- Ask students to advise you of any special disabilities, problems or needs that may need to be accommodated.

- Consider the need for special clothing or equipment needed in case of weather or other conditions.

- Determine transportation needs—reservation of vehicles, drivers, need for site supervision.

- Plan for emergencies—theft, illness, vehicle emergency, weather delays, student misconduct, or threats to the safety of others.

- Communicate information to students in advance about schedules, departure locations, route, rest and meal stops, lodging, emergency procedures, protocol for problems, and rules of conduct.

- Familiarize students with the site and their surroundings.

Simulations (Role-playing, Games)

Many Marines in supervisory or administrative billets require proficiency in two separate and distinct skill sets. The first skill set is MOS related, while the second deals with leadership and interpersonal skills. Simulations are a preferred method for building proficiency in these two areas.

- Role-playing requires the students to assume active roles in a low risk simulated situation that involves effective, realistic behaviors. It may involve individuals, groups or whole units. The role-play is followed by a group discussion that gives students a chance to re-examine their behavior. It is particularly useful in teaching the development of interpersonal skills (e.g., leadership or counseling skills). The new skill is normally taught through lecture and then practiced within the role-play. For example, one student could play the role of an instructor and the other one could play the role of the student. However, it is also used in MOS training, such as firefighting, flight training, and M1A1 training. In these examples training simulators are used to create "real life" situations while controlling risk to personnel and equipment.

- 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. Simulation mainly prepares or refreshes both MOS and interpersonal skills. However, it does not eliminate the need for Marines to learn through application on-the-job. Prior to selecting the type of role-play to be used the instructor must consider how many students are involved and how to deal with difficult students (overly defensive or non-participating). The instructor must check the master lesson file for a detailed orientation package that describes the student's role in the overall scenario and any supporting information.

(1) **Types of Role-Play**

- **Single**. The simplest role-play involves two people who are asked to re-enact a problem either from a description or one that came up in a previous discussion. The advantage here is the whole group is able to see and then discuss the same problem. The disadvantage is that the chosen players may feel self-conscious about being the focus of attention and only those two players get to practice the behaviors. It is recommended that the instructor ask for volunteers for the role-play.

- **Double**. Each player has an alter ego who stands behind the player adding comments or questions during the role-play that perhaps the primary person may be thinking but not saying. The second player can be assigned to the role or participants can spontaneously get into the action when they think of an additional response. They can also help out the primary player with a new idea or get that player back to reality. The facilitator should demonstrate this type of role-play before getting others to try it.

- **Reverse.** During the role-play, the facilitator asks the two students to switch roles and seats.

- **Rotation.** During the role-play, the facilitator asks new participants to continue the role-play.

- **Multiple.** Small groups are formed and they simultaneously enact the role-play. Processing may be more difficult.

(2) **Employment.** The instructor must ensure that all students understand related material and the objective of the role-play. The instructor must state the behavioral objectives, step-by-step instructions, any rules, and tell the students that the role-play is not a pass/fail exercise.

- **Pass out Role Play Information**. Hand out all background information and allow the students enough time to read it carefully and provide clarification as needed.

- **Demonstrate**. Conduct a demonstration of a role-play prior to its first time being used in course.

- **Assign and Define Roles**. Verbally designate roles or distribute printed descriptions of the roles and observers. Think about how to handle students who have been part of a similar situation, get overly defensive, or do not want to participate.

- **Monitor**. Create a comfortable environment to encourage active participation.

- **Focus**. Ensure participants focus on the process of practicing interpersonal skills rather than the content of the situation.

Supervise, Observe, and Provide Guidance. The job of the instructor is to supervise, observe, and provide guidance to the students. The instructor or assistant instructors should facilitate learning by refocusing the group and correcting any mistakes students make during the exercise. It is a good idea to talk to any assistant instructors to determine if they have observed anything additional.

Case Study

Case studies are normally developed from actual events that have occurred in the operating forces or supporting establishment. Case studies focus predominantly on analyzing and understanding the process of making decisions and making sense of complex or ambiguous information. Case studies are an excellent method for bringing together multiple learning points under a culminating exercise that causes students to process, analyze, and synthesize information. The instructor will normally present a case study in printed form, but it may also be presented using pictures, films, role-playing, or oral presentations. After the case study is presented, the class can be divided into groups. The students then analyze, discuss, and report the key elements of the case and the lessons to be learned.

- **Objective.** The main objective of a case study is for students to gain practical knowledge from an actual event and to develop analytical and problem-solving skills. The greatest value of the case study is that it challenges students to apply what they know and comprehend to a realistic situation. Normally in the case study, concepts and principles are not taught directly. Instead, they emerge gradually as students are forced to formulate theories to support their case decisions. In preparation, the instructor should do the following:

(1) **Distribute Copies of the Case**

(2) **Make the Following Suggestions**

- **Skim**. Read the first few paragraphs of the case and then skim the rest to find out, in general, what the case is about and what kind of information is included for analysis.
- **Facts as you go**. Put yourself in the position of the main character in the case and ask yourself what the basic issue/problem is, how the issues/problems are affected by the information presented in the case, and how those issues/problems should be handled.
- **Take Notes**. Note the basic issues on a sheet of paper. Then read through the case again, jotting down the relevant considerations for each problem.

(3) **Develop Solutions**. Instruct the students to develop possible solutions to the case issues as they are reading. Solutions must be supported by evidence found in the case.

(4) **Instruct the Students to Begin Reading**. Allow ample time for careful reading of the case.

(5) **Re-Read**. Go back and carefully read the entire case, underlining key to the case.

(6) **Opening Question**. Some case leaders begin with the question, "What is the issue here?" Then go on to, "What are the pertinent facts?" Others begin with a more general question, "What action should be taken?" The approach depends on the intellectual maturity of the students and the subject matter.

(7) **Refrain from Lecturing**. The case study method is inherently a student-centered approach. Keep instructor comments to a minimum and let the students do the talking.

(8) **Be Non-Directive**. In most case studies, there is no single correct answer. It is more important to lead the students toward the application of sound principles than to persist in an endless search for a single correct answer. The instructor should focus on facilitation and must avoid imposing personal views and passing judgment on student contributions. The instructor's role is to encourage independent thinking and the achievement of the lesson objective.

(9) **Summarize**. Summarize the key learning points (should be no more than 3-4) and ensure they tie back to the learning objective.

Control the Participation. The case discussion is controlled much like the guided discussion; except that in this case, the instructor may feel free to enter the discussion. However, he/she needs to remain neutral. The instructor can keep track of the discussion on the chalkboard, turn chart, dry erase board, etc., so that the entire class has a visual record of where the discussion has been and where it is going.

Coaching

This method is an intensive learning experience for individuals or small groups. It is characterized by significant student involvement and immediate instructor feedback. A videotape of student performance is an excellent teaching aid when supplemented by an instructor's analysis and critique. This technique is particularly effective in instructor training.

➔ **Preparation**. Preparation is the key to coaching. The first thing the instructor must do is to identify the student's current strengths, weaknesses, and overall level of competence. After identifying these key elements, the instructor/coach takes the following steps:

(1) **Identify Needs**. List specific knowledge, skills, or attitudes to be addressed with the application.

(2) **Determine Desired Goal**. The goals should address the identified needs.

(3) **Select Activities**. List resources, strategies, and initiatives needed for development.

(4) **Determine Target Dates**. Identify the timeline.

➔ **Employment**

(1) **Define Roles**. Discuss your role, goals, and target dates with the student and reach an agreement.

(2) **Probe**. Determine what the student already knows and build on that knowledge throughout a step-by-step process. Use thought-provoking questions (Effective Communication) and have the student explain performance. Demonstration prior to the exercise is highly recommended.

(3) **Problem Solving**. Teach the students to search for alternatives and solve problems on their own. Strive to make them self-sufficient (minimal guidance needed). This will increase their confidence and ensure they do not immediately request assistance. Provide suggestions if needed.

(4) **Intervention**. Know when to intervene, when to stand back from situations, and let the learner figure out a solution. Become involved in risky situations that demand your intervention, but avoid unnecessary involvement that will detract from your learners' training and achievement.

(5) **Feedback**. It is extremely important to tell the student what they are doing throughout the exercise so they can get a sense of achievement.

(6) **Supervise and Observe**. The job of the instructor is to supervise and observe. The instructor or assistant instructors should supervise to facilitate learning by watching the students and correcting any mistakes made during the exercise. Observe the exercise for any discrepancies.

(7) **Collect and Analyze Performance Data**

(8) **As Needed Review and Modify Goals or Training**

(9) **Evaluate Performance**

5005. ADMINISTER TESTS

SECTION 5

The primary purpose for administering tests is to determine if the learning objectives have been met, improve instruction, and thereby increase student learning. This is accomplished by having a well thought out evaluation process. The following is a basic process to be used by FLCs. However, some schools may need to modify this process because of the unique nature of their instruction and/or resource constraints.

TYPES OF TESTS

A student's knowledge and skill level can be tested at different intervals before, during, and after the course of instruction. This is accomplished by a pre-test, progress test, and post-test.

- **Pre-Test.** A pre-test is administered to students prior to entry into a course or unit of instruction to determine the knowledge, skills, and behaviors the students already possess in a given subject. A pre-test is useful for tailoring instruction to match the entering student's knowledge and skill level. Example: A pre-test may reveal that incoming students have in-depth knowledge of M16 rifle loading and unloading procedures. With this information, an instructor can teach loading and unloading procedures as a refresher only.

- **Progress Test.** A progress test is administered throughout a course to evaluate student progress and to determine the degree to which students are accomplishing the learning objectives.

- **Post-Test.** A post-test reveals the effectiveness of instruction and how well the student learned by determining whether or not the learning objectives were achieved. Test items are designed to duplicate the behavior expressed in the learning objectives so that this determination can be made.

METHODS OF TESTING

Performance-Based Testing

A performance test duplicates the job behavior(s) by using the same equipment, resources, setting, or circumstances that the student will encounter on the job. The Marine Corps strives for performance-based instruction and testing to increase the transfer of learning from the instructional environment to the job. Normally, a performance checklist is used to record the student's level of mastery on the test. The test must have specific instructions for both the instructor and the student.

Knowledge-Based Testing

Knowledge-based test can be oral or written. This method of testing does not evaluate the student's ability to perform the required job skills; however, it does determine if the student knows how to perform the required job skills. The advantages of knowledge-based tests are high degree of objectivity in scoring and the capability of measuring a large numbers of facts, ideas, or principles in a relatively short time. The most frequently used knowledge tests are:

- Multiple-choice
- Matching
- True-false
- Essay
- Short answer
- Completion (fill-in-the-blank)

There are other knowledge-based tests known as authentic assessments. These include:

Take-home tests. This type of test allows students to take the test at home with the use of references and resources.

Open-book tests. This type of test can reduce stress, but may decrease the student's motivation to study.

Paired testing. This type of test allows students to work in pairs on single essay exams. Pairs can be self-selected or assigned.

Portfolios. This may not be a specific test but merely a collection of student's work. A student's portfolio may include, sample papers (first drafts and revisions), journal entries, essay exams, and other work representative of the student's progress. Portfolios may be given a letter grade or mastery/non-mastery qualification.

STEPS IN ADMINISTERING STUDENT TESTS

Gather Test Materials

STEP 1

When gathering test materials, an instructor needs to know the materials required, the type of test to be given, and have access to the materials.

- ☑ **The materials needed to administer a test will depend on the type of test to be given.**
- ☑ **If the test is knowledge-based, the instructor needs enough copies of the test, test booklets, and answer sheets for each student. The instructor should also ensure the students have a writing instrument (pen/pencil) to answer the questions.**
- ☑ **Extra answer sheets and pencils or materials that may be needed should be available.**
- ☑ **If the test is performance-based, such as disassemble/assemble an M16, the instructor will need at least one M16 and performance checklists for the students to demonstrate the ability to disassemble/assemble the M16.**

When gathering test materials, here are some simple questions an instructor should ask prior to a test:

- ☑ **Who** will be administering the test?
- ☑ **What** type of test is being administered?
- ☑ **Where** are test materials located and does liaison need to be made to access materials?
- ☑ **Where** is the test being administered?
- ☑ **When** is the test being administered?
- ☑ **How** is the test being administered?

STEP 2

Prepare the Environment

When preparing the environment, the selection of a place to administer a test is very important for reliable evaluation results. Some of the key elements that need to be considered are as follows:

- **Arrange for tests to be administered in the morning when students are fresh and alert. Students have a higher probability of not doing as well in the afternoon due to fatigue. Note: This does not apply if the conditions of the test require fatigue or a specific time of day. Example: Conduct a *night* attack.**
- **Ensure the environment is prepared and conducive to the testing. The environment should be quiet, well ventilated, have adequate lighting, and provide the student with ample working space.**
- **Arrive at the testing room well in advance of the class to ensure all testing materials have been gathered, are assembled, and ready when administrating the test to the students. Some instructors prefer to have the tests and other materials in place prior to the students arriving.**
- **Post a sign or a placard outside each doorway to inform that a test is being conducted.**
- **Instructors should follow their local Standing Operating Procedures (SOP) for handling visits by distinguished guests.**
- **Ensure that logistical and safety requirements are met.**

STEP 3

Clarify Directions

When administering a test, provide clear and concise instructions/directions to avoid confusion. When students understand exactly what they are supposed to do, they are less likely to become nervous or tense. Therefore, their test scores will represent a more accurate picture of their achievement. Although carefully written instructions/directions for taking the test should be a part of the evaluation, oral directions should be given as well. When providing instructions/directions to the students, there are some key elements that need to be kept in mind. A complete set of instructions provided in written form, orally, and/or by media should specify at a minimum the following:

- **The test instructions.** These should be kept uniform from class to class.
- **How the test will be collected.** After conducting the test, the evaluator must collect all test materials in a predetermined order.

- **The time allowed for each part of the test.**
- **Beginning and ending test times.** If the test has time limits, these need to be announced and observed. Example: Beginning and ending times written on the chalk or dry erase board.
- **How students will proceed when taking the test.** Students should be directed on whether to proceed individually, from part to part, from page to page, or whether to wait for a signal or further instructions.
- **The number of test items on the test and how the student is to respond.** It is often a good plan to provide a sample test item with the correct response.
- **What references or tools may be used during the test.**
- **Inform the students the procedure(s) to follow when they have completed the test.** Are they free to turn in their papers and leave the room or are they to remain seated until all materials are collected?
- **Inform students to keep their eyes on their own paper.**

Provide An Opportunity For Questions

STEP 4

After providing the students with instructions/directions and prior to the students taking the test, the evaluator needs to invite the students to ask questions concerning procedures and make it clear whether questions may or may not be asked of the instructor after the test begins. If any questions arise from the student(s), clarify the instructions/directions and check back with the student(s) to see if they understand the directions mentioned.

Conduct the Test

STEP 5

After the test materials have been gathered, the environment prepared, the instructions/directions given, and an opportunity for questions has been provided, the evaluator is ready to conduct the test. Some elements that the evaluator should apply, as well as keep in mind when conducting a test, are as follows:

- **Start and stop the test on time if a time has been given.**
- **Monitor the test throughout the testing period by frequently walking about the classroom.**
- **Keep distractions to a minimum.**
- **Collect the tests in a pre-determined order.**

→ **Before conducting a review with the students, the instructor should pass out Examination Rating Forms (ERFs) to at least 10% of the students that took the test. This is to gather data on the students' impression of the test and its overall process.**

The review should cover the correct performance that was expected of the student. This review should always be conducted before the students receive their results.

→ **Conduct a review of the test with the students. The review should cover the correct performance that was expected of the student. This review should always be conducted before the students receive their results. Students will always try to debate or justify their answers once they learn their grade. This type of exchange will hinder the review process and could create student/instructor barriers that will be difficult to overcome. In the event a student does want to debate their answers, inform them to wait until they receive their results, as that is the appropriate time for recourse.**

Scoring and Grading

STEP 6

A test may be valid, reliable, and comprehensive, but if not scored and graded properly individual scores and grades are useless.

→ **Knowledge-Based Tests**. When scoring and grading knowledge tests, an answer key along with a grading key must be obtained to maintain standard results for each test being scored and graded. Scoring is nothing more than marking the correct answers on a copy of the test answer sheet and then utilizing it to score the students' test answer sheets. Grading is done after the test has been scored by assigning numerical values in accordance with the grading key.

Example:

When using a bubble sheet test, involving a, b, c, d, or e, it is possible to take a copy of that evaluation and punch out the desired answers, then utilize it as a key to score the test answer sheets.

→ **Performance-Based Tests**. When scoring and grading a performance test, a performance checklist is usually made. This checklist must be configured to a skill level, which shows whether the student has accomplished the desired skill. Some performance checklists may only involve a mastery or non-mastery qualification. In this case, if multiple instructors are involved in the scoring and grading process, all instructors must use the same scoring and grading procedure.

Example:

If one instructor assigns a "Poor" score and another instructor assigns a "Good" score to the same paper, the grades may express instructors' bias and not student proficiency.

5006. AFTER-LESSON MANAGEMENT

SECTION 6

The primary purpose for employing after-lesson management is to ensure the effective and efficient use of school resources. By ensuring the instructional environment is well maintained, the instructor is saving the school valuable resources. The secondary purpose is to capture specific lesson related data for future use in the school's evaluation program.

After-lesson management actions are all the activities that must be performed after the lesson has been conducted. These activities include:

- **Removal of media from the instructional environment.**
- **Securing all classified material.**
- **Leaving the instructional environment as it was found.**
- **Conducting a cleanup of outdoor facilities.**
- **Turning in any equipment and resources temporarily borrowed for the lesson.**
- **Reviewing the school SOP. There may be additional after lesson management actions or requirements (e.g., march the students to chow).**
- **Complete the After Instruction Report (AIR).**

COMPLETING AN AFTER-INSTRUCTION REPORT

After conducting a lesson, it is an instructor's responsibility to assess the effectiveness of instruction. The primary means of recording this assessment is the After-Instruction Report (AIR). Included in the AIR is the compilation of IRF data, instructor's analysis, and recommendations for improvement. The AIR is a single document that summarizes one iteration of a lesson. To have an effective AIR, the following must be completed: collect data, analyze data, record data, make recommendations, and submit the completed AIR. See MCO 1553.2_ Appendix O-52 for a sample AIR.

Collect Data

STEP 1

This is predominantly done through two sources:

Students. By providing Instructional Rating Forms (IRFs) to students and allowing them the opportunity to respond to the lessons, FLCs are provided data to make future revisions, if necessary. Data feedback that comes from the students may include, but is not limited to, problems with a lesson, instructors, or other materials associated with instruction. IRFs should be completed for each lesson. The frequency and number of rating forms used will depend upon the school's Standing Operating Procedures (SOP). At a minimum, survey ten percent of the students. When a lesson is being given for the first time, it is recommended that all students complete an IRF. More information on the IRF can be found in Chapter 5, Section 5205. See Appendix O-44 for a sample IRF.

Instructors. Instructors are a valuable source of data. They can report problems with any part of the instruction. This could include, but is not limited to, the instructor's observation of student difficulties with certain learning objectives/outcomes, the amount of time spent in presenting a lesson, the instructional environment, and opinions about instructional materials. Instructors can make any recommendations associated with the lesson, and the course as a whole. All instructor comments are recorded on the AIR.

Analyze Data

STEP 2

Before data can be analyzed, the instructor should organize data into topics areas. For example, an instructor could organize using the four broad categories listed below:

- Problems with the course material.
- Problems with student performance.
- Problems with instructor performance.
- Problems with the instructional environment.

Instructors should review their notes and comments for each of the topic areas that were identified. Then, look for any trends in the data and draw tentative conclusions concerning effectiveness or efficiency of the lesson. The process of identifying trends involves the instructor looking for data that occurs more than once. A single, provocative comment would not be considered a trend. For example, a trend might be recorded of students missing a particular question or several of the same comments from IRFs. From these trends, identify problem areas and make recommendations for change. Problem areas can also be identified from singular comments on an IRF. For example, if a student pointed out that the outline quoted a Marine Corps Order that was superceded; this would be an immediate problem area, with no need to establish a trend of similar comments.

Begin Recording Data

STEP 3

Once all data has been collected and analyzed, record the data on the AIR. Listed below are the procedure for recording data:

Instructional Rating Form (IRF) Data. After the block of instruction, the instructor should collect all IRFs and compile all the data. Record the compiled data on the appropriate block of the AIR. This is done right after instruction because the instructor still has a fresh memory of what took place during instruction and can analyze the feedback given from the students. After analyzing the data, the instructor can also make comments and recommendations related to areas of concern dealing with students, instruction, and the feedback given back from the students.

Time-Critical Operational Risk Assessments. If new safety requirements are identified during the lesson, the instructor should record the ORM lessons learned, additional controls used, and/or occurrences in the Instructor Comments area labeled "Reassessment of ORA." By allowing the Risk Assessment to be included in the AIR, other instructors will benefit in the future.

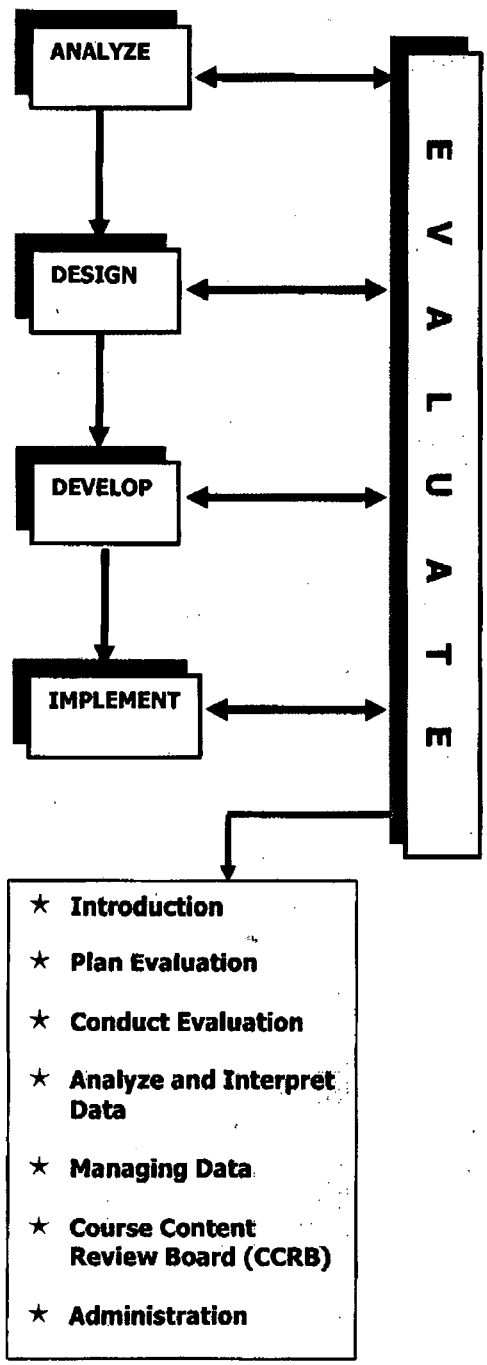
Make Recommendations

STEP 4

Recommendations come in the form of instructor comments. These recommendations are based on the instructor's analysis of the identified trends. Recommendations to revise instruction should include the following:

- ➔ A statement of the problem (for example, only 10% of the students stated that their knowledge increased as result of the lesson).
- ➔ The probable cause(s) of the problem (for example, the lesson is written for a much less experienced target population).
- ➔ All possible alternative solutions to the problem. (For example, a suggested solution may be to redesign the lesson for the experienced target population or make the lesson a self-paced homework assignment).

EVALUATION



In Chapter 6:

Chapter 6 6000. INTRODUCTION

The purpose of evaluation within the Systems Approach to Training (SAT) process is to determine the effectiveness and efficiency of an instructional program. Evaluation is not merely a single phase within the SAT process, but rather occurs continuously throughout all phases. This chapter provides guidance for a systematic and standardized approach to assessing the effectiveness and efficiency of an instructional program in each phase of the SAT. It details specific steps, the evaluation instruments used, and statistical methodologies which allow for ease of reference about how to conduct, analyze, and interpret evaluation results. Evaluation data is used to ensure that instruction is resulting in combat-effective Marines, to monitor the allocation of funding and resources for an instructional program, and to provide the basis for decision-making concerning the maintenance, revision, continuation, or termination of an instructional program. Using the processes and procedures outlined in this chapter, Formal Schools and Unit Commanders can establish a systematic evaluation program to evaluate instruction, identify training deficiencies, document evaluation results, and make recommendations for use by decision-makers to modify, continue, or terminate a program.

This chapter has six sections. The first five cover the five evaluation processes and the sixth provides administrative responsibilities as follows:

Plan Evaluation. This section provides an introduction to the types of evaluation and guidance for determining the focus of an evaluation.

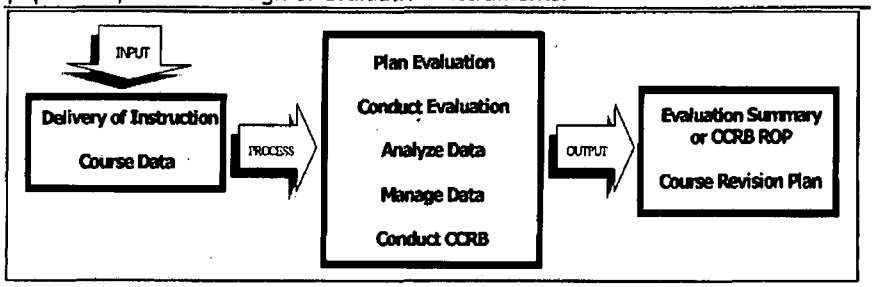
Conduct Evaluation. This section explains how evaluation takes place within each phase of the SAT to provide checks and balances. It addresses specific ways to conduct evaluation for each phase of the SAT process.

Analyze Data. This section takes the evaluator through the steps of organizing, quantifying, interpreting, and summarizing data so that information supporting changes to the POI can be presented in a Course Content Review Board (CCRB).

Manage Data. This section addresses how to manage the documentation of evaluation results and recommendations for revising or refining an instructional program.

Conduct Course Content Review Board (CCRB). This section addresses how to prepare and conduct for a CCRB.

Administration. This section references the directives requiring evaluation at FLCs. It also covers the development of an evaluation plan, how to sample a population, and the design of evaluation instruments.



6001. PLAN PROGRAM EVALUATION

SECTION 1

Thorough and systematic planning is key to a successful evaluation. For an evaluation to provide the information required for making decisions concerning an instructional program, the evaluation must identify the critical issues and topics influencing the program. These topics will define the focus of the evaluation. Potential evaluation questions, criteria, and issues need to be identified and specific evaluation topics selected. Recognizing important questions and avoiding minor issues will enhance the merit of the evaluation by providing the data required for making informed decisions about an instructional program. This section provides an introduction to the types of evaluation and guidance for determining the focus of an evaluation. A few questions are listed in Figure 6-1 to assist in providing focus to the evaluation process by establishing the need.

QUESTIONS FOR DETERMINING EVALUATION NEED

- ☑ Does the instructional program affect a large segment of the Marine Corps?
- ☑ Are multiple iterations of the instructional program planned? Normally, a one-time program will not be evaluated.
- ☑ Have instructional program deficiencies been identified by the using command(s)?
- ☑ Has there been an equipment change, technology advance, or doctrinal change that may affect the instructional program?
- ☑ Will evaluation information affect important instructional program decisions scheduled to take place? Such decisions may relate to course content, course length, funding, continuation, instructor requirements, or student throughput.
- ☑ How long has it been since the program was last evaluated? Has the program evolved since the last evaluation?

Figure 6-1. Questions for Determining Evaluation Need

IDENTIFY EVALUATION TYPE

There are two types of evaluation. A distinction between the two types of evaluation can be made by first determining when the evaluation will be conducted, and then what will be the focus of the evaluation.

Formative Evaluation

Formative evaluation is conducted during the development of an instructional program with the express purpose of providing recommendations for improvement. It is also possible to conduct formative evaluation through the first iteration of implementation, but this is not the preferred method for validating instruction. Validating instruction (formative) will involve content reviews by Subject Matter Experts (SME), and field trials. These validation methods are discussed in more detail in Chapter 3, Section 3601. Formative evaluation provides useful information for improving an instructional program and leads to decisions concerning instructional program development. For example, during the development of a course curriculum, formative evaluation could involve review of Training and Readiness (T&R) Events, content review of course materials by SMEs, and validation of instruction. Formative evaluation results in feedback for the curriculum developer, who then uses the information to make the necessary revisions to course materials (e.g., lesson plans, concept cards, student materials, media, test items).

The primary object of formative evaluation is to review the effectiveness and efficiency of course materials and to make any revisions necessary prior to implementation of the course materials.

Summative Evaluation

Summative evaluation is conducted after a Program of Instruction (POI) has been implemented. It provides judgments about a program's worth or merit. This type of evaluation can be conducted by schoolhouse personnel or by personnel external to the school (i.e., a TECOM instructional system specialist). Summative evaluation leads to decisions concerning program improvement, continuation, extension, or termination. For example, after a course curriculum is completely developed, a summative evaluation might be conducted to determine how well graduates are performing on the job following instruction. Summative evaluation assesses effectiveness of student performance, course materials, instructor performance, and/or instructional environment. Summative evaluation can also be a comprehensive assessment of all these factors to evaluate the instructional program's overall effectiveness and efficiency.

Summative evaluation leads to decisions concerning program improvement, continuation, extension, or termination.

IDENTIFY EVALUATION ISSUES

A school commander must identify the curriculum and instruction issues to be addressed during the evaluation so that the proper information can be gathered to determine the effectiveness of the program.

Gather Information

The evaluator begins the identification process by generating an exhaustive list of potentially important questions, criteria, and issues. Possible questions to use for each phase of the SAT process can be found in the next section. To develop this comprehensive list, the evaluator must gather information from a variety of sources including:

- ☑ **Subject matter experts, instructors, students, and managers to identify questions, concerns, and goals regarding the instructional program within the Formal Learning Center. The evaluator should focus on obtaining input from those individuals who are or will be affected by the results of the evaluation.**
- ☑ **Existing curriculum, instructional documentation, previous evaluation data, Marine Corps directives, local Standing Operating Procedures (SOP), and other appropriate doctrinal publications.**

Select Evaluation Topics

It is usually not feasible to address all issues in one evaluation. Practical considerations, such as availability of resources and time constraints, will limit what can be addressed. If resources are not available and the evaluation is critical, it must be postponed until they are available. The evaluator must narrow the scope of the evaluation to address the most critical questions and issues affecting the instructional program. The conduct of the evaluation will be driven by the topics selected. Figure 6-2 provides criteria that can be used for selecting evaluation topics.

Criteria That Can Be Used in Selecting Evaluation Topics
☑ Who will use the information?
☑ Issues that reduce present uncertainty, provide information not already available, or yield important information.
☑ Issues that address a critical concern of the instructional program.
☑ Issues that, if not addressed, seriously limit the scope or comprehensiveness of the evaluation.

Figure 6-2. Criteria Used in Selecting Evaluation Topics.

In addition to the above criteria, the selection process may also be based on decisions that will be made as a result of the evaluation. These can include decisions concerning:

- ☑ **Whether instructional needs are being met.**
- ☑ **The development or acquisition of new training aids, devices, or systems.**
- ☑ **The continuation, modification, expansion, or termination of an instructional program.**
- ☑ **The extent to which the instructional program is being implemented as designed.**
- ☑ **The relative value/cost of an instructional program compared to comparable programs.**

SELECT EVALUATION APPROACH

Once the focus of the evaluation is defined, the evaluation approach is selected. Three approaches to evaluation are recommended for use in the Marine Corps: objectives-oriented, management-oriented, and operational test and evaluation. These approaches are based on the goal of the evaluation; they determine the focus of the evaluation but do not change the procedure for conducting evaluation.

Objectives-Oriented Evaluation

The objectives-oriented approach determines the extent to which learning objectives have been achieved. It is the most common evaluation approach used in the Marine Corps. Information obtained from such an evaluation can be used to revise the goals of the instructional program, the program itself, or the instruments and methods used to measure instructional effectiveness. Figure 6-3 describes the focus of objective-oriented evaluation.

When using Objective-Oriented Evaluation, the focus is on determining whether:
☑ Students master the learning objectives.
☑ Learning objectives meet the goal(s) of the program and support the Training and Readiness (T&R) Events.
☑ The standards in the learning objectives are realistic and obtainable.
☑ Student assessments accurately measure the stated learning objectives.
☑ Graduates are able to perform the tasks in the operating forces.

Figure 6-3. Objective-Oriented Evaluation.

Management-Oriented Evaluation

The management-oriented approach to evaluation entails collecting information to aid management decision-making as an instructional program operates, grows, or changes. This approach enables the school director to determine if an instructional program responds to changes in technology, resources, new developments in instruction, or day-to-day operations. For example, if an upgrade to a computer program for inventory control is being implemented, the school director may direct that an evaluation be conducted to determine the upgrade's affect on the instructional program. The FLCs concerns, informational needs, and criteria for instructional effectiveness guide the direction of the evaluation. Figure 6-4 provides how management-oriented evaluation assists the decision-maker.

When using Management-Oriented Evaluation, the approach allows decision-makers to:

- ☑ Determine what instructional needs or objectives should be addressed to provide a basis for assessing the effectiveness of instruction. For example, the introduction of new equipment would identify a need to revise learning objectives and create or modify a lesson plan to incorporate instruction on that equipment.
- ☑ Determine resource requirements and their availability and adaptability to alternative instructional strategies. The decisions may facilitate the design of the instructional program and, ultimately, provide the Formal School with a basis, for assessing how well the program is being implemented. For example, instruction on a new piece of equipment may require additional instructors or specialized training equipment that traditional lecture/demonstration methods do not support. Alternative strategies, such as Mobile Training Teams (MTT), distance learning, Computer-Based Training (CBT), etc., may be proposed.
- ☑ Determine how well a program is being conducted, what barriers threaten its success (e.g., lack of resources, instructors, facilities), and what revisions are required. Once these questions are answered, instructional or administrative procedures can be monitored, controlled, and refined. For example, an evaluation of instructor performance and instructional environment may indicate a need to increase instructor preparation time or improve the instructional environment.
- ☑ Determine whether to continue, modify, or refocus a course of instruction. An evaluation of graduate performance on the job will provide data to aid these decisions.

Figure 6-4. Management-Oriented Evaluation.

Operational Test and Evaluation

Operational test and evaluation is an approach that enables the evaluator to determine whether a product represents a significant improvement or benefit over alternative products. Example products include an off-the-shelf instructional program, an instructional method or media, a training system/device, etc. This approach is effective when an existing product is being evaluated for implementation. This approach also allows the evaluator to assess the effectiveness of a product while it is still under development. When determining whether an alternative product represents an improvement over an existing product, the evaluator should consider the following factors: cost, benefits, effectiveness, and feasibility. Figure 6-5 provides how operational test and evaluation assists the decision-maker.

Figure 6-5. Operational Test and Evaluation.

When using Operational Test and Evaluation, decision-makers are able to consider:
☑ **Cost.** Cost is analyzed to determine if it will be cost efficient to invest in an alternative product or upgrade the existing product.
☑ **Benefits.** This analysis includes determining how the benefits among products will be measured. The analysis results in the determination of whether the benefits are worth the expenditure of resources (e.g., time, money, personnel) to implement.
☑ **Effectiveness.** An analysis of product effectiveness is performed to determine whether an alternative product will be more effective than an existing product in meeting the goals of the instructional program.
☑ **Feasibility.** A final analysis is that of feasibility. How feasible would it be for the school to invest the resources necessary to educate their personnel and structure/acquire the facilities required to use the alternative product? If the benefits and effectiveness of the alternative product are minimal, would it be feasible to alter the school budget to implement an alternative product?

6002. CONDUCT EVALUATION

SECTION 2

In Marines Corps training, the revision of courses is paramount to meeting the needs of the operating forces. Whether it is affected by new equipment, new orders, or new technology, how a task is performed in the operating forces can change. Formal Learning Centers must be prepared to obtain data compiled from different phases of the SAT process in order to improve the overall result. As the SAT model shows on page 5-0, evaluation can require revisiting any phase of the SAT process. The diagram in Figure 6-6 shows the variety of routes that can be taken in evaluation.

This section describes how evaluation takes place within each phase of the SAT to provide a system of checks and balances. This section allows the user of this manual to address specific ways to conduct evaluation for each phase of the SAT process. For a new course being developed, this process shows how formative evaluation occurs during the initial stages of course development when limited data is available. Evaluation during this time can reveal potential problems prior to course implementation. Using summative evaluation, data can be collected regarding existing courses, which may be used to assist in identifying the strengths and weaknesses within the course in question. Evaluation instruments have been identified and information is provided on conducting the evaluation. However, specific guidelines on the development of evaluation instruments and sampling a population can be found in Section 5600. Referrals to other sections are made regarding how data is analyzed and interpreted after it is collected.

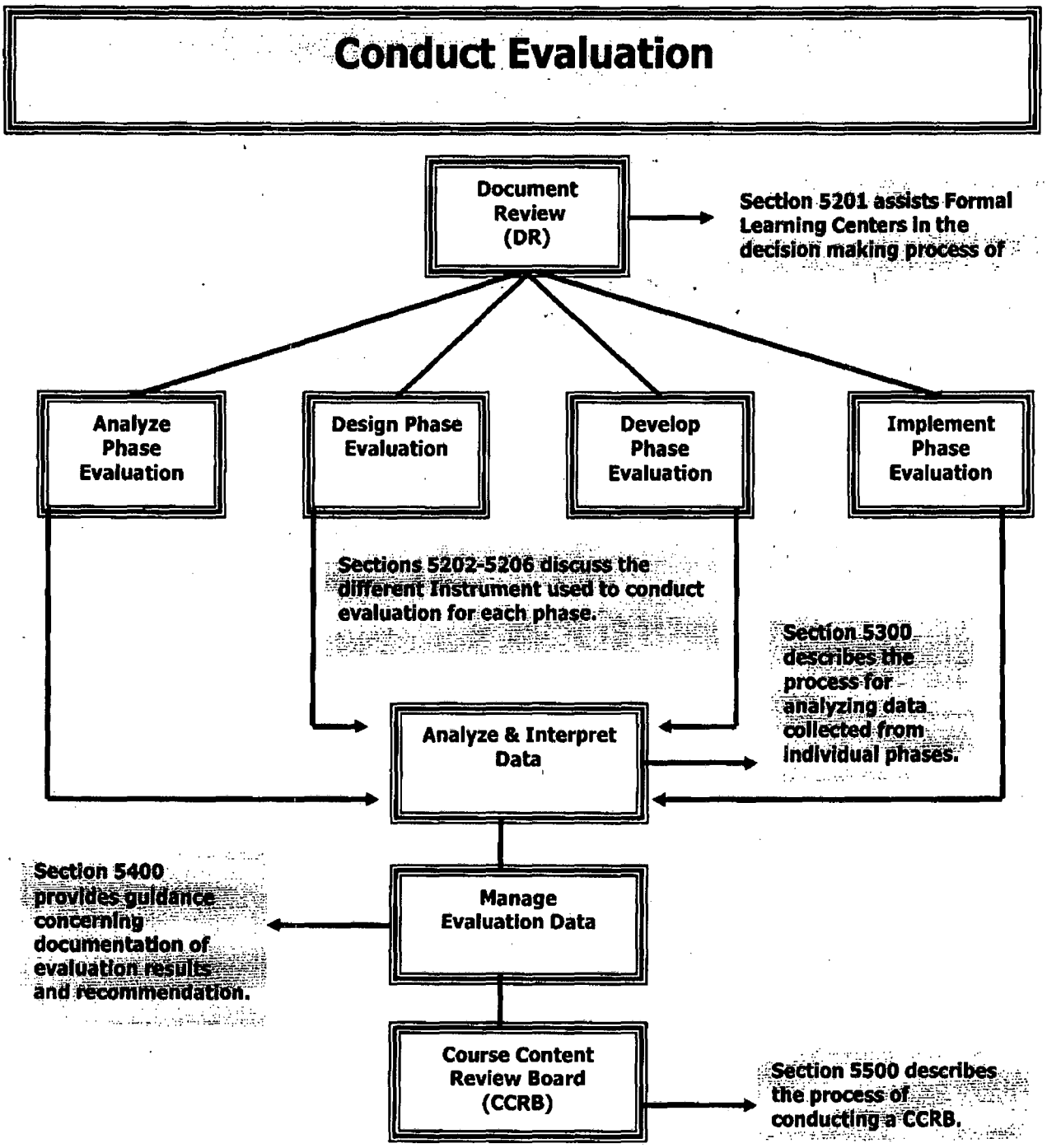


Figure 6-6. Course Evaluation.

DOCUMENT REVIEW

During any stage of the evaluation process, a review of documents significant to the course and school can assist in the decision-making process and approach to evaluation. Some of the documents listed may or may not be available depending on whether the evaluation is for a new course/school or an existing course. Additional documents to those discussed here may also be available. Listed below are documents to be discussed in more detail later in this section.

- ☑ **Training and Readiness (T&R) Manual**
- ☑ **Program of Instruction (POI)**
- ☑ **Master Lesson File (MLF)**
- ☑ **School's Standing Operating Procedures (SOP)**
- ☑ **School's Evaluation Plan**
- ☑ **Inspection Reports/Assist Visit Reports (if applicable)**
- ☑ **Record of Proceedings (ROP)**

TRAINING AND READINESS MANUAL

The T&R manual defines individual and collective training requirement and serves as the base upon which instruction is built. Therefore, the T&R must always be reviewed to assure the association between the curriculum and the training standard. For instance, if evaluation data indicates a problem with Terminal Learning Objectives (TLOs) MCO 1553.2_ Ch. 2, provides the procedure for downgrading the TLO or procedures to update a T&R event out of cycle.

PROGRAM OF INSTRUCTION (POI)

According to MCO 1553.2_, all existing courses will have a current POI. These documents (maintained in MCTIMS) provide the resources required for the course, learning objectives, instructional hours, number of instructors required for each class, methods and media, and more. This information is vital to the evaluation of a course. For example, an evaluator needs to ensure that the class structure reflects the POI. If there are problems with the approved POI, then the data needs to be gathered so that it can be presented at a Course Content Review Board (CCRB).

MASTER LESSON FILE (MLF)

An MLF is required for each class that is taught in the course. All of the documentation required to conduct the class is in the MLF. More information on specific contents can be found in MCO Ch. 1, Par. 6. If the course is new, then this file will not be produced until the end of the develop phase. For existing courses, the MLF can be used to standardize current course materials. For instance, if a student comments on an Instructional Rating Form (IRF) that numerous words are misspelled in the student handout, then the MLF can be pulled and checked for misspelled words. If the words are not misspelled in the MLF, then there is an internal problem that exists—the MLF is not being used as the source document.

SCHOOL STANDING OPERATING PROCEDURES (SOP)

The school's SOP or Academic SOP specifies academic policy for the school. The SOP may provide information about how data is gathered and compiled for the school and what resources are available to provide evaluation data. This is valuable information for evaluation of the design, develop, and implementation phases. This document may not be available to a new school, but needs to be developed to provide policy and procedures. A checklist providing some key elements to include in an SOP can be found in MCO 1553.2_ Appendix O-59.

EVALUATION PLAN

If an evaluation plan has been established, it should be reviewed so that there is an understanding of the evaluation process in accordance with school policy. At some schools, the evaluation plan may be found in the school's SOP. Refer to Section 5602 for a detailed explanation of an evaluation plan.

INSPECTION REPORTS/ASSIST VISIT REPORTS

Some Military Occupational Specialties (MOSs) have inspection teams that visit the operating forces to ensure that the standards required by the Marine Corps are adhered to. If possible, retrieve information revealing strengths and weaknesses from the operating forces so the school can then use the data to assist in the improvement of the instructional program. The challenge comes in determining whether the strengths/weaknesses are linked to the schoolhouse, the operating forces, or both.

RECORD OF PROCEEDINGS (ROP)

The ROP provides documentation of the discussion items and recommendations made during a Course Content Review Board (CCRB). For existing courses, this document offers recommended changes, additional operational needs that were identified, or additional resources needed at the FLCs. Sometimes, the ROP will reveal areas where additional data needs to be collected to determine or support needs that were identified during the CCRB. Refer to section 5500 for more information on the ROP and CCRBs.

ANALYSIS PHASE EVALUATION

Data is collected during the Analysis Phase to identify the task list, T&R events, instructional setting, and the Target Population Description (TPD). Through the methods discussed in Chapter 1, the products of the Analysis Phase are determined by TECOM. Methods of evaluation are established to ensure the accuracy of the outputs from the Analysis Phase. If evaluation data at the FLC identifies a problem with the outputs, then all supporting data is sent to the Task Analyst at TECOM as a Formal Learning Center Evaluation Report (FLCER). The questions in Figure 6-7 are a few questions that will assist in examining the outcomes of the Analysis Phase.

Evaluating the Analysis Phase
☑ Does the T&R manual reflect the tasks necessary to perform the job in the operating forces?
☑ Does the task analysis include all of the prerequisite skills and knowledge needed to perform the learning goal and is the prerequisite nature of these skills and knowledge accurately represented?
☑ Does the environment accurately replicate, within the confines of resources, the environment where the job is performed?
☑ Does the target population description accurately define those who perform the task?
☑ Is there data from the operation forces suggesting changes are needed

Figure 6-7. Evaluating the Analysis Phase.

CONDUCT EVALUATION

For a Formal Learning Center an Analysis Phase review occurs prior to the commencement of a T&R conference via the FLCER. The FLCER is the FLCs voice in the T&R process to communicate end of course evaluation and post-course data indicating a gap between what is taught at the school and what is being performed in the operating forces. In accordance with MCO 1200.13_, a Front-End Analysis (FEA) is initiated by TECOM when job requirements change or a performance deficiency is detected. A front-end analysis is an example of an Analysis Phase review.

DESIGN PHASE EVALUATION

During the Design Phase knowledge and skills are identified, learning objectives and test items are developed, the delivery system is selected, and the sequence of instruction is determined. Methods of evaluation must be established to ensure that these outputs are accurate. The questions in Figure 6-8 are questions that will assist in examining the outcomes of the Design Phase.

Figure 6-8. Evaluating the Design Phase.

Evaluating the Design Phase
☑ Do the knowledge and skills accurately reflect what needs to be taught for each performance step?
☑ Do the learning objectives support the T&R events?
☑ Do the learning objectives accurately and clearly state what knowledge/skill will be required for performing the job?
☑ Does the test accurately measure the knowledge, skill, or the task being taught?
☑ Are the testing methods appropriate to the subject matter (knowledge vs. performance-based)?
☑ Do the test items consistently measure the same knowledge or performance?
☑ Do the assessment instruments and their related mastery criteria reliably distinguish between competent and incompetent learners?
☑ Is the delivery system selected appropriate for the level of knowledge that the target population will possess?
☑ Is the sequence of instruction organized logically to enhance the process of learning the material?

CONDUCT EVALUATION

Throughout the Design and Develop phases of the SAT process, checklists are used to ensure accuracy and to guide decision-making. Checklists provide continuity to the process and a standard for the product. During the Design phase, checklists provide detailed questions on products of the Design phase. For new courses, these checklists must be completed and placed in the MLF for each class in the course. In existing courses, these should be reviewed if there are indicators that the products of this phase are flawed. The checklists are available in the appendices of MCO 1553.2_. Additional items can be added to the checklists to meet school needs.

Learning Analysis Worksheet (LAW) Checklist. The LAW checklist ensures that components are recorded from the T&R manual verbatim. It also checks to make sure that the knowledge and skills were identified and grouped for each performance step. Refer to Chapter 2, Section 2200, for more information on learning analysis.

Learning Objective Worksheet (LOW) Checklist. The LOW checklist ensures that the behavior, condition, and standard of the learning objectives are accurate and clear. Refer to Chapter 2, Section 2202, for more information on learning objectives.

Test Item Checklist. The test item checklist ensures that test items replicate the behavior, standards, and conditions identified in the learning objectives. Many questions can be included on the checklist to require the test developer to assess each test question (knowledge or performance) for clarity and conciseness. Refer to Chapter 2, Section 2207, for more information on test items.

Construct a Test Checklist. The construct a test checklist ensures that the test is constructed to include detailed instructions, scoring criteria, appropriate grouping of test items, and any safety precautions. Refer to Chapter 3, Section 3500, for more information on constructing a test.

DEVELOP PHASE EVALUATION

During the Develop Phase, the course schedule is determined, the media is produced, Master Lesson Files (MLFs) are created, and the POI is generated. Methods of evaluation must be established to ensure that these outputs are accurate. The questions in Figure 6-9 are questions that will assist in examining the outcomes of the Develop Phase.

Evaluating the Develop Phase
☑ Does the content present a consistent perspective?
☑ Do the instructional materials support the learning objectives?
☑ Does the instructional method facilitate maximum learning?
☑ Is the instructional method appropriate to the subject matter?
☑ Are training aids suitable to the instruction and subject matter?
☑ Are examples, practice exercises, and feedback realistic and accurate?
☑ Is the approach consistent with current instructional theory in the content area?
☑ Is sufficient time allotted for instruction and practice?

Figure 6-9. Evaluating the Develop Phase.

CONDUCT EVALUATION

Several forms of evaluation take place during the Develop phase. For both a new and existing course, checklists are used to evaluate the products of the phase. For a new course, the checklists are completed and placed in the MLF as source documents. Once the course development is completed, then validation takes place so that problems with the Program of Instruction (POI) are identified prior to implementation. When evaluating an existing course, the checklists in the MLF are still referenced and reviewed periodically. If evaluation indicates problems with the POI, then the checklists need to be reviewed. However, reviewing the checklists may not identify the problem and an expert review may be required. An expert review, not to be confused with an SME review, is discussed in more detail below. Figure 6-10 shows the different approaches that evaluation takes depending upon whether the course is new or existing.

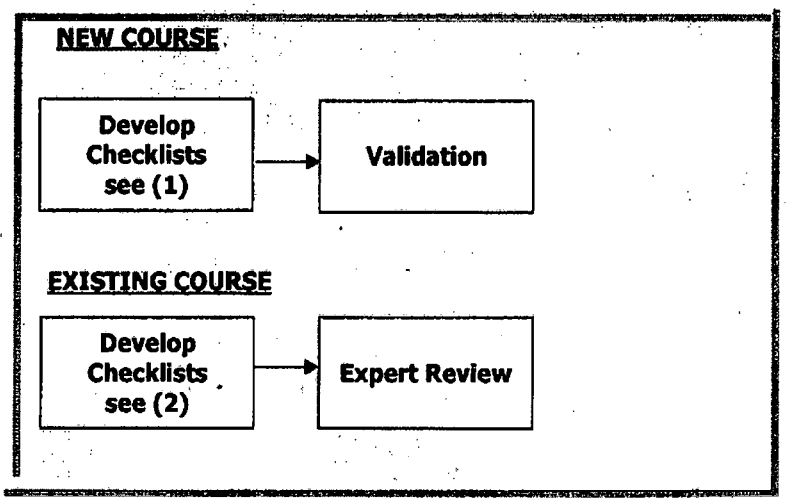


Figure 6-10. Conduct of Evaluation in the Design Phase.

1. **Develop Phase Checklists**. During the Develop phase, checklists provide detailed questions on products of the develop phase. The checklists are available in the MCO 1553.2_ appendices. Additional items may be added to the checklists to meet school needs.

    a. **Concept Card Checklist**. The concept card checklist ensures the contents and accuracy of the necessary components of the concept card. Refer to Chapter 3, Section 3200, for more information on concept cards.

    b. **Lesson Plan Checklist**. The lesson plan checklist ensures that each component required in a lesson plan is present and complete. Refer to Chapter 3, Section 3402, for more information on lesson plans.

    c. **Student Outline Checklist**. The student outline checklist ensures that each component required in the student outline is present. Refer to Chapter 3, Section 3403, for more information on student outlines.

    d. **Method/Media Checklist**. The method/media checklist ensures that the method and media used are consistent with the learning objective behavior. Refer to Chapter 2, Section 2208, for more information on methods. Refer to Chapter 2, Section 2209, and Chapter 3, Section 3304/5, for more information on media.

2. **Expert Review.** An expert review can be held for further examination of the design and develop phases. These types of reviews are where experts review the material prior to implementing the instruction. An expert review is different from a Subject Matter Expert (SME) review in that the expert review involves more than SMEs. The experts may include: SMEs, seasoned curriculum developers, and/or experienced education specialists. During a content review, an SME examines the content of the instructional material for accuracy and completeness. Then an individual familiar with the target audience (perhaps someone from the operating forces) reviews for appropriateness. This individual may look at vocabulary, examples, and/or illustrations. The education specialist can evaluate presentation of the content with current educational thoughts and practices. Expert reviews can take place toward the end of the design phase or at the beginning of the develop stage for a new course. If an existing course, then this review can take place at any time.

3. **Validation.** The process of validation occurs for new courses prior to implementation. The best indication of whether the instruction is effective is to try it out on a population that is representative of those expected to be in the classroom. This will provide information on how well the learners are able to learn and the problems encountered with the instruction in its current form. Validation allows changes to be made prior to the implementation of the instruction. Methods of validation are covered at length in Chapter 3, Section 3600.

IMPLEMENT PHASE EVALUATION

During the Implement Phase, instruction is delivered. Evaluating the objectives of instruction is imperative to identifying the strengths and weaknesses of the course as a whole. The implement phase is where most evaluation data is compiled at the FLC. Once a course is implemented, evaluation is conducted for each iteration of a course. Since this is a continuous process, it is important that each school have an evaluation plan in place to ensure that data is collected properly and that there is standardization of the data collected. More information on writing an evaluation plan can be found in Section 5602. The four common topics evaluated in the Implementation Phase are course materials, instruction, instructional environment, and student performance. The questions in Figure 6-11 will assist in examining these four topics.

Figure 6-11. Evaluating Implementation.

Evaluating Course Materials
☑ Do the instructional materials support the learning objectives?
☑ Is the student outline easy to follow?
☑ Are training aids suitable to the instruction and subject matter?
☑ Are the test instructions clear and understandable?
☑ Is the format of the test easy to follow? (Students don't have to flip pages, like questions are grouped together, etc.)
☑ Do students have all of the materials (equipment, calculator, etc.) necessary to complete the test?
☑ Do students use the course materials available to them?
Evaluating Instructor
☑ Is the instructor's presentation of instruction effective?
☑ Does the instructor promote student participation?
☑ Does the instructor provide feedback to the students?
☑ Does the instructor have sufficient knowledge of the course material?
☑ Does the instructor communicate and interact effectively?
☑ Does the instructor utilize media effectively?
☑ Is the administration of tests effective?
Evaluating Instructional Environment
☑ Does the instructional setting facilitate maximum learning?
☑ Do available resources allow the course to be as performance-based as possible?
☑ Is the instructor to student ratio adequate?
☑ Is the instructional environment appropriate to the subject matter and realistic to the job setting?
Evaluating Student Performance
☑ Are students mastering the learning objectives?
☑ Are students able to perform tasks?
☑ Are there test items or tasks that students repeatedly have problems mastering?

CONDUCT EVALUATION

Figure 6-14 provides a breakdown of which instruments are used to provide data regarding course materials, instruction, instructional environment, and student performance, how the instrument is used, when it's used, and who completes the instrument. Most of the instruments will fall under more than one category. As identified in Figure 6-14, evaluation data for the implement phase is gathered during the course, immediately following the course, and even three months following the course. When reviewing data, keep in mind that all data has to be considered to get a true picture of instruction. Once the data is compiled, it is then compared and analyzed so that trends between classes can be identified. Examples of the following checklists can be found as appendices to MCO 1553.2_.

1. **Instructional Rating Form (IRF).** The IRF is a student reaction form to instruction. Common types of feedback revealed by IRFs can be found in Figure 6-12. Information provided by the students can identify areas of strengths and weaknesses in a lesson. However, this should not be the sole indicator of proficiency or effectiveness. For every block of instruction, the IRF is distributed at the beginning of class to, at a minimum, 10 percent of the students. Students are provided time to complete the forms at the end of the class. The school SOP may designate a higher percentage of IRFs to be completed for each class, but it must be at least 10 percent. Students should be informed that IRFs are not restricted to the selected individuals and that anyone in the class can complete an IRF at any time. IRFs provide the student's immediate reaction to the lesson. Specific information regarding a particular lesson may be lost unless data is gathered for each lesson. Data from the IRF is transferred to the After Instruction Report (AIR) where the instructor also makes comments regarding the lesson. The AIR is discussed in detail later in this section and in Chapter 4, Section 4600. Information regarding quantifying and interpreting the results of questionnaires can be found in Section 5302.

Common Types of Feedback from Student Reaction Forms	
Progress with Objectives:	Did the instruction meet the stated learning objectives met?
Class Content:	Did the content make sense?
Instructional Materials:	Were the materials useful?
Pre-Work Materials:	Were the pre-work materials necessary and helpful?
Assignments:	Were the out-of-class assignments helpful?
Methods of Delivery:	Was/Were the method(s) of delivery appropriate for the objectives?
Instructor/Facilitator:	Was/Were the facilitator(s) effective?
Overall Evaluation:	What is your overall rating of the lesson/course?

Figure 6-12. Common types of Feedback from Student Reaction Forms.

2. **End of Course Critiques (ECC).** Like the IRF, the ECC is also a student reaction form. It provides feedback on the areas listed in Figure 6-14. However, the ECC references the course in broader terms than the IRFs. This particular instrument reveals information on the course as a whole. ECCs should, if possible, be completed by 100 percent of the class. These critiques are completed after the program of instruction is complete. Students that may not have filled out an IRF or ERF during these periods may apply comments on the ECC in the areas of instruction or evaluation. Any information specific to a lesson gathered from the ECC is documented on the AIR for that lesson. The AIR is discussed in more detail later in this section and in Chapter 4, Section 4600. Information regarding quantifying and interpreting the results of questionnaires can be found in Section 5302.

3. **Instructor Evaluation Checklist**. This particular checklist is used when evaluating an instructor. The Instructor Evaluation Checklist critiques the same elements that are evaluated at the Formal School Instructor Course (FSIC), Instructional Management School. FSIC graduates have been taught and evaluated on all of the items of this checklist. The Instructor Evaluation Checklist reflects Marine Corps requirements for FLC instructors to provide standardization of instruction. It covers platform techniques, thorough coverage of the lesson, questioning techniques, communication skills, employment of method/media, and instructor/student interaction. Additional requirements can be added to the checklist by schools, but the requirements should not be modified unless revised and adopted by the Instructional Management School and TECOM. The evaluators of instructors need to be graduates of the FSIC so that they are familiar with the requirements. Information regarding quantifying and interpreting the results of a checklist can be found in Section 5302.

4. **Observation Checklist**. An observation checklist is available to be used by an evaluator who is reviewing a class in session. The class may be in a classroom setting or field setting. This checklist provides a list of items to assist in evaluating course materials, instruction, instructional setting, student interaction, and class exercises. Unlike the Instructor Evaluation Checklist, the focus provided by this checklist is not on the instructor, but rather on class content and effectiveness. This checklist allows an observer to evaluate whether the instruction, student materials, and media follow the lesson plan and materials submitted in the MLF. This checklist allows room for other comments by the observer. Comments may include recommendations to change the method, media, student materials, instructional environment, etc. If the changes are minor, then they may be made immediately. Otherwise, data gathered from the checklist remains as documentation for the next convening Course Content Review Board . Evaluators should be familiar with the program of instruction, graduates of the Curriculum Developers Course (CDC), and graduates of the Formal School Instructor Course (FSIC). The frequency of observations can be determined in the school SOP. Additions can be made to this checklist to meet the needs of an individual school. Information regarding quantifying and interpreting the results of a checklist can be found in Section 5302.

5. **Environment Checklist**. The environment checklist reveals information about physical conditions and training conditions. If training takes place in a classroom environment, then information regarding lighting, noise, classroom setup, ventilation, room temperature, etc., is available through an environment checklist. This checklist can be completed by the instructor prior to the class or by a classroom observer during the class. An environment checklist for training that occurs outside of a classroom can reveal information about setup and availability of equipment, ventilation, noise, facilities, and the overall conditions that training took place under. Safety can be included in the environment checklist to eliminate the additional safety checklist. Information regarding quantifying and interpreting the results of a checklist can be found in Section 5302.

6. **Safety Questionnaire**. The safety questionnaire is distributed to students so that they have an opportunity to assess whether he/she was informed about safety issues. Were students provided ample instructions regarding safety? Was safety emphasized in the instruction? Did the instructor exemplify safety in the training environment? The FLCs SOP may have specific guidelines about how this is assessed. Courses where students are exposed to potentially dangerous situations must ensure that Operational Risk Management (ORM) is referenced. Refer to MCO 3500.27 for more information on ORM. Information regarding quantifying and interpreting the results of a questionnaire can be found in Section 5302.

7. **Safety Checklist**. This checklist is to be completed by the instructor or a qualified observer. The items on the checklist indicate whether the training facility has been set up to present a safe working environment. It can also be used in addition to the observation checklist to provide information on whether the instructor provided ample instructions regarding safety, emphasized safety, and practiced safety in the training environment. Courses where students are exposed to potentially dangerous situations must ensure that Operational Risk Management (ORM) Policy is referenced. Information regarding quantifying and interpreting the results of this questionnaire can be found in Section 5302.

8. **Examination Rating Form (ERF)**. Immediately following an examination (performance or written), ERFs are distributed to, at a minimum, 10 percent of the students. Students are advised that these forms will not be viewed until after the students have received their grades for the test. The ERF allows the school to assess the students' perception of a test's suitability and fairness. This does not provide the students with the final say on the validity of the test, nor does it suggest that their judgment is necessarily accurate. However, it does provide the students' reactions to the test providing information that cannot be assessed through mere test scores. This information can be used to adjust confusing questions, instructions, facilities, equipment, etc. The results should be indicated on the After Instruction Report (AIR) of the class teaching the learning objectives tested. The AIR is discussed in detail later in this section and in Chapter 4, Section 4600. Information regarding quantifying and interpreting the results of this questionnaire can be found in Section 5302.

9. **Practical Application/Class Exercises.** Practical application and class exercises are evaluative tools that the instructor(s) use to assess the progress of students. If students are having a particular problem with a practical application or during a class exercise, then it may be necessary to make adjustments in the training schedule (late training day or extra work during lunch) to spend more time on the problem area. This is especially necessary when the course builds on elements learned in previous material. This information needs to be annotated under "Instructor Comments" on the After Instruction Report (AIR) for documentation.

10. **Tests.** During the Course Implementation Stage, pre-test, written examinations, and performance examinations can be given. Each test has a different purpose. This is discussed more in-depth in Chapter 3, Section 3500. Test scores reveal how well an individual in the class performed. Item analysis reveals how well students performed on each item in comparison with the rest of the class. This information should be tracked over time and aids in determining the validity and reliability of the test. Refer to Section 5302 for more information on test analysis and determining the validity and reliability of tests.

    a. **Pre-Test.** The results of a pre-test can be used for tailoring instruction to the target audience. It can also be used to compare with post-test data to determine if instruction was effective. For instance, if students are unable to perform a task before instruction, but can perform that task after instruction, a general determination can be made as to the effectiveness of instruction. Of course, there are other factors outside of instruction, such as peer teaching and additional reading, that may have attributed to learning.

    b. **Performance/Written Examinations.** Results from performance and written examinations reveal whether the student has mastered the learning objectives. Test scores can be compared, specific problem items can be identified and linked to specific classes or learning objectives, and defective test items can be identified. Refer to Section 5302 for more information on test analysis.

INSTRUMENTS USED FOR OVERALL COURSE EVALUATION

The instruments discussed above have been specific to course materials, instructor, instructional setting, or student performance. This section will discuss student data forms, after instruction reports (AIR), post-graduate surveys, and site visits normally associated with formal evaluation within the SAT process. Questions that these evaluation instruments can be designed to answer are found in Figure 6-13.

Questions for Course Evaluation
☑ Who is represented in the student population?
☑ Have there been changes to the method of performing the task?
☑ Are tasks performed differently in the operating forces?
☑ Is there new equipment or computer programs being used in the operating forces?
☑ Has the environment changed?
☑ Are students who pass the test (evaluation) able to perform their job successfully?
☑ Do supervisors feel confident in the graduates from the FLC?
☑ Do the students feel confident in the skills taught at the FLC when they get to the operating forces?
☑ Do graduates of the course believe non-essential instruction is contained in the instructional program?
☑ Are graduates performing well on the job?
☑ Are graduates performing better than they did before instruction?
☑ What tasks are causing graduates difficulty on the job?

Figure 6-13. Questions of Evaluation.

1. **Student Data Form.** Student data will reveal information about the population. This data is generally collected at the beginning of the course. Some of the student data may be available from the Student Registrar module of MCTIMS. A student data form completed by the student reveals background knowledge, computer experience, student expectations, language proficiency, etc. This data can be helpful in determining why students do particularly well or not so well on a test.

2. **After Instruction Report (AIR).** An AIR is a report that consolidates the student reaction, instructor reaction, and test scores into one form so that data analysis can be performed. Refer to Chapter 4, Section 4600 for information on how an AIR is completed.

3 **Post-Graduate Survey.** The post-graduate survey is developed to assess how well the graduate felt that he/she was prepared for his/her job. It can also be developed to find out types of equipment being used, computer programs used, content not covered, suggestions/recommendations, etc. Post-graduate surveys are course specific and sent to graduates approximately 3 months after graduation. For courses with extenuating circumstances where graduates are being delayed from performing the job (e.g., a backlog of obtaining security clearances), the timeframe may be extended up to 120 calendar days after the graduation month. Document the reasons for extending the 90-day timeframe. Surveys can be mailed, emailed, or used for interviewing graduates over the phone or in person.

4. **Site Visit.** Site visits provide the school with an opportunity to visit where graduates from the school will perform their duties. Both interviews and observations can be conducted during a site visit. Environment, work conditions, and equipment can be viewed, while allowing school representatives to conduct interviews with supervisors and graduates. School representatives need to possess a thorough knowledge of the instructional programs related to the site in order to be effective. Additionally, they need to possess knowledge of educational and training principles so that recommendations for improvement to the program can be documented and presented at the next CCRB.

    a. **Observation.** Observation will reveal the environment that the graduate contends with, how well he/she is able to perform in the environment, how well he/she implements what was taught in the course, and how well what was taught in the course coincides with what is happening in the operating forces. Developing a checklist for use during the observation provides a standard of comparison. When observing graduates, it is recommended to observe recent graduates as well as graduates who have been in the operating forces for a while. This provides the ability to compare what is learned through on-the-job training and the consistency between operating forces and the FLC. Section 5302 provides guidance on how to quantify and interpret data from a checklist. Designing checklists is covered in Section 5604.

    b. **Interview.** During a site visit, interviews are conducted with supervisors and graduates from the course. Supervisors and graduates will provide different information. Therefore, these interviews should be conducted separately and the evaluation instruments should be developed with the intended audience in mind (graduate or supervisor). Although site visits are ideal for conducting such interviews, interviews can also be conducted over the phone or by email. Refer to Section 5604 for how to prepare for an interview. Section 5302 provides guidance on quantifying and interpreting data.

EVALUATION INSTRUMENTS				
Evaluation Topic	Instrument Used	How Evaluation is Administered	When Conducted	Who Completes Instrument
Course Materials	Instructional Rating Form (IRF)	Instructor distributes at the beginning of each lesson to a percentage (at a minimum, 10%) of students determined by local SOP.	Completed at end of each lesson	Student
	Observation Checklist	Observation checklist is used to review course materials during implementation. Normally completed by sitting in the back of the classroom with all of the paper-based course materials on-hand.	During Lesson	Curriculum Developer Academics
	End of Course Critique (ECC)	Instructor/academics distributes ECC to 100% of the class at the end of the course.	Completed at end of each course	Student
Instructor	Instructor Evaluation Checklist	Instructor is evaluated using the checklist. Normally evaluator sits at the back of the class to minimize distractions.	During Lesson	Academics
	Instructional Rating Form (IRF)	Instructor distributes at the beginning of the class to a percentage (at a minimum, 10%) of students determined by local SOP.	Completed at end of each lesson	Student
	End of Course Critique (ECC)	Instructor/academics distributes ECC to 100% of the class at the end of the course.	Completed at end of each course	Student
	Safety Questionnaire	Instructor distributes questionnaires at beginning of lesson.	Completed at end of lesson	Student
Instructional Environment	Instructional Rating Form (IRF)	Instructor distributes at the beginning of the class to a percentage (at a minimum, 10%) of students determined by local Standing Operating Procedures (SOP).	Completed at end of each lesson	Student
	Observation Checklist	Observation checklist is used to review instructional environment during implementation. Normally completed by sitting in the back of the classroom with all of the paper-based course materials on-hand.	During Class	Curriculum Developer Academics
	Environmental Checklist	Used by instructor to review environment prior to conducting the class. Good device for classroom management. An observer uses this instrument during the class.	Prior to Lesson During Lesson	Instructor Classroom observer

Figure 6-14. Evaluation Instruments

EVALUATION INSTRUMENTS (Continued)				
Evaluation Topic	Instrument Used	How Evaluation is Administered	When Conducted	Who Completes Instrument
Instructional Environment (cont)	Safety Checklist	Instructor/observer completes to ensure that the training facility presents a safe learning environment.	Prior to Class During Class	Instructor Classroom observer
	End of Course Critiques (ECC)	Instructor/academics distributes ECC to 100% of the class at the end of the course.	Completed at end of each course	Student
Student Performance	Examination Rating Form (ERF)	Distributed by instructor after exam is complete to a percentage (at a minimum, 10%) of students. ERFs should not be viewed until after all students have received scores to eliminate any chance of bias during grading.	Immediately Following Exam	Student
	Practical Application/Lesson Exercise	A part of the standard curriculum that provides instructors an opportunity to informally evaluate how well the class is learning the material.	During the Lesson; Determined by Curriculum (approved lesson plan)	Instructor can note observation on the After Instruction Report (AIR) if needed
	Tests	Instructor administers the test in accordance with Program of Instruction (POI) and local Standing Operating Procedures (SOP).	Determined by Curriculum	Student
	End of Course Critiques (ECC)	Instructor/academics distributes ECC to 100% of the class at the end of the course.	Completed at end of each course	Student
Other Data Collected	Student Data Form	Instructor distributes to 100% of students to be completed at beginning of course.	Day one of Course	Student
	After Instruction Report (AIR)	Consolidated report of student reaction, instructor reaction, and test scores. Completed for every class.	Completed after each Lesson	Instructor
Other Data Collected	Post Graduate Survey	Mailed or emailed to 100% of graduates.	3 months after each graduation	Graduate
	Site Visits	Interviews, surveys, and observation checklists can be completed during the site visit.	Anytime	Instructor Curriculum Developer Academics

Figure 6-14. Evaluation Instruments (cont.).

6003. ANALYZE AND INTREPRET DATA

SECTION 3

Evaluations involve data analysis and interpretation to produce meaningful results. Data analysis reduces and combines information to make it easier to make comparisons for drawing conclusions. Interpretation involves making sense of the data so outcomes and relationships can be described, conclusions drawn, and recommendations made concerning any element of an instructional program. The decisions for creating, revising, maintaining, continuing, and improving an instructional program rests with sound data collection methods and thorough data analysis and interpretation. This section takes the evaluator through the steps of organizing, quantifying, interpreting, and summarizing data so that information supporting changes to the POI/MLF/Lesson Plan can be presented in a Course Content Review Board (CCRB). Figure 6-15 provides a diagram showing the process and steps of analyzing and interpreting data.

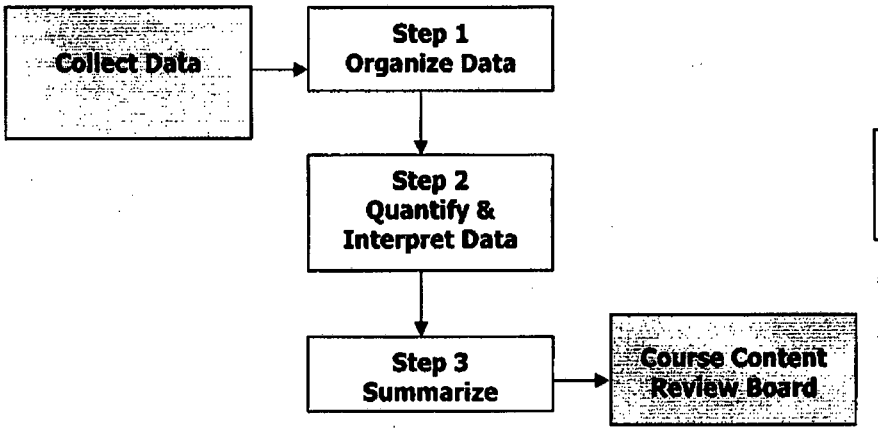


Figure 6-15. Process of Analyzing and Interpreting Data

ORGANIZE DATA

Data must be compiled and organized before it can be analyzed and interpreted. The focus of the evaluation will guide what data should be compiled. Data needs to be organized by topic. The organization of the data will depend upon the questions that need to be answered. For example, an evaluator might organize data into topics of "Course Data," "Instructor Data," "Student Performance Data," etc. Figure 6-14 at the end of Section 5200 identifies the instruments that provide information for each of the categories. Organizing the compiled data into topic areas further isolates data pertaining to the questions that need to be answered. Data is also organized so that categories can be established for data comparison.

ESTABLISH CATEGORIES FOR DATA COMPARISON

Determinations must be made regarding what comparisons will need to be made to provide meaning to the data. It is necessary to determine which comparisons will provide results that can reliably identify both strong and weak areas within the training program. Evaluators should compare data from several different sources. Categories are established for data comparisons so that these comparisons can be made when interpreting data. Such comparisons will minimize decisions being made based upon one data source. Some examples of possible comparisons that can be made are in Figure 6-16.

Figure 6-16. Examples of Possible Comparisons.

Examples of Possible Comparisons
☑ Percent of students accomplishing an objective with a previously established standard or with performance of previous classes on the same objective.
☑ Job performance data with class performance data.
☑ Job performance before and after attending instruction.
☑ The frequency of responses on different Instructional Rating Form (IRF) items, on different test items, or within multiple-choice items.
☑ Student opinions about the course with their test performance.
☑ Student comments about the course with those of the school staff.
☑ Final test scores between 2 classes.
☑ Number of remedial instruction sessions per iteration of the course over a period of a year or more.