US ARMY CORPS
OF ENGINEERS
Professional Development
Support Center

The COESAT Handbook

Corps of Engineers
Systems Approach to Training

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Training
The COESAT Handbook
Corps of Engineers Systems Approach to Training

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Chapter 1 - Introduction

1-1. Purpose

ER 690-1-414 establishes the Corps of Engineers Systems Approach to Training (COESAT). This systematic decision-making approach identifies what tasks, skills, and knowledge to include in training; who will receive the training; and how and where the training will occur. The COESAT process determines essential training products and the level of support needed to produce, distribute, implement, and evaluate those products. This handbook provides the proponents, training developers, instructors, and facilitators a detailed explanation of this approach and the procedures required for its implementation. Use this handbook in conjunction with ER 690-1-414 and AR 350-1.

1-2. Application

COESAT applies to *all* training materials developed or training conducted by *or* for the Corps. As training developers revise or update courses, they must ensure that the course and its documentation comply with this systematic process.

The rapid development of communication and technology indicate significant improvements in training, and also changes in the way the Corps must educate its employees. Computer and Internet technology are critical to the success of future training. However, designers must focus on the underlying issues of learner needs and not a false need to keep up. This handbook suggests ways to streamline the COESAT process, but developers must keep students' best interest in mind when making all training-related decisions.

Note that the COESAT process applies to *all* new training materials, e.g., those for Distance Learning, Web-based, Computer-Based Instruction (CBI), Computer-Based Training (CBT), or Digitized Training.

1-3. Course Manager Responsibilities

a. The course manager will accomplish the following:

(1) Establish milestones and schedule/direct all activities as necessary for completion of COESAT requirements.

(2) Determine, in coordination with the proponent, the number of subject matter experts (SME) required for each activity.

Continued on next page

*This pamphlet supersedes CEHND 350-1-2, 1 June 1993

Chapter 1 - Introduction, Continued

1-3. Course Manager Responsibilities (continued)

(3) Guide and assist the proponent and the SMEs in the following:

(a) Identifying training needs.

(b) Describing the target population.

(c) Describing job functions and tasks.

(d) Performing task analysis.

(e) Designing training, to include task performances measures, objectives, pretest/posttest items, and schedule of instruction.

(f) Developing master training materials.

(g) Implementing training.

(4) Conduct a task survey, as needed and if time permits. Proponents and SMEs may provide tasks from existing functional databases, input from the field, or other means as deemed acceptable by the proponent.

(5) Approve developmental and educational approaches for all training.

(6) Direct production of training materials.

(7) Evaluate training during developmental phases and upon implementation.

1-4. Proponent/ Action Officer (AO) Responsibilities

b. The proponent will do the following:

(1) Identify/verify the training need, in conjunction with the SMEs.

(2) Designate SME to assume overall technical responsibility for the functions listed in paragraphs c and d below.

(3) Approve/review master training materials for technical accuracy.

Continued on next page

Chapter 1 - Introduction, Continued

1-5. SME Responsibilities

c. The SMEs will accomplish the following:

(1) Describe the target population.

(2) Describe the job functions and tasks.

(3) Analyze tasks.

(4) Design task performance measures, objectives, pretest/posttest items, and schedule of instruction.

(5) Develop master lesson plans and master support materials.

1-6. Instructors and Facilitators Responsibilities

d. Instructors and facilitators will conduct training, using approved master materials and administer approved training instruments.

1-7. References

a. Required publications. ER 350-1-414, Proponent-Sponsored Engineer Corps Training (PROSPECT) and AR 350-1, Army Training and Education

1-8. Related Publications

b. Related publications:

(1) CEHND TD Memo 56 (Corps of Engineers Systems Approach to Training (COESAT), dated 30 September 1994 **(will update)**

(2) CEHR-P Memo 60 (Corps of Engineers Systems Approach to Training (COESAT) – Evaluation, dated 3 October 2002

(3) CEHR-P TD Memo 39 (Evaluation of Instructors and Facilitators), dated 1 November 1998

(4) ER 690-1-414 (Engineering Regulation), dated 15 Nov 1997.

1-9. Explanation of abbreviations and terms

See the glossary for explanations of abbreviations/acronyms and special terms used in this handbook.

1.10 COESAT Job Aid

See JA-1 for a quick overview of COESAT requirements.

Chapter 2 - Analysis

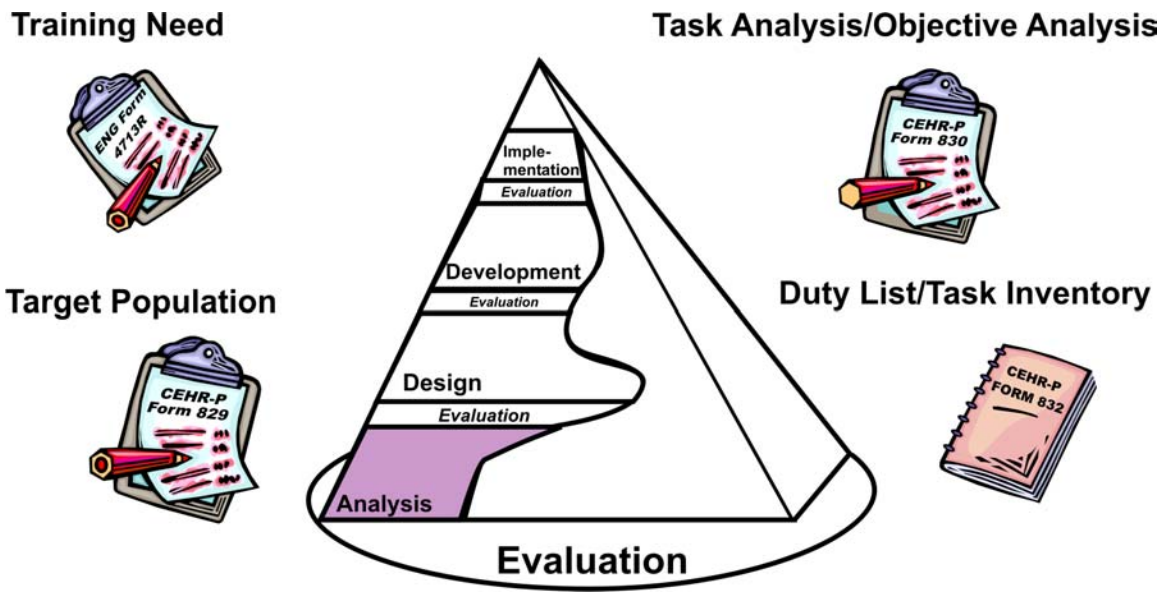


Figure 2-1. Analysis Phase

2-1. Analysis: Basic Requirements

Job performance requirements serve as the basis for any training. To define these requirements fully and establish the foundation of all subsequent development, trainers and Subject Matter Experts should perform an analysis for each new course. During the analysis phase (Figure 2-1), developers/trainers determine first if there *is* a training problem. If a Needs Analysis reveals a training problem, then developers/trainers define job performance requirements, examine actual employee performance, and determine training needs through a comparison of the actual job performance with desired job performance. Note that there is a difference between a Needs Analysis and a Task Analysis. A Needs Analysis provides you with a complete understanding of the shortcomings of a system and looks not only at the job performed, but also at other parts of the system that might indicate clues for improvement. A Task Analysis looks strictly at the tasks performed on the job. Normally, the COESAT process calls for a Task Analysis for the development of a course since the need is most often already established.

See the list below for activities essential to the analysis process:

a. Identify the training need.

b. Describe the target population.

c. List the major functions of the job.

Continued on next page

Chapter 2 – Analysis, Continued

2-1. Analysis: Basic Requirements (continued)

d. List all the tasks performed by a successful job incumbent.

e. Conduct a Task Analysis. In a traditional Task Analysis, the analyst generates a list of tasks. This list becomes a survey for completion by job incumbents, subject matter experts, and supervisory personnel. You ask respondents to evaluate the frequency, the criticality of each task, and the amount of training required to reach proficiency. The analyst then compiles the surveys, and members of the committee discuss the findings and approves the tasks.

For many jobs, the basic Traditional Task Analysis works well. For others, different tools may prove more beneficial than the Survey. See Section **2.6** for alternatives to the Survey. Keep in mind that you will have to provide and maintain documentation for whatever method of Task Analysis you use, e.g., duty list, task inventory, target population description, and a detailed description of your Task Analysis Method and procedures you followed.

f. Analyze each task selected for training to include detailed information about how to perform the task and the standards for satisfactory performance.

2-2. Identification of the Training Need

a. A performance discrepancy indicates a difference between the actual job performance and the performance expected in either the present or in the future. A trainer can attribute discrepancies to skills, knowledge, environmental, or motivational deficiencies. Training will be of no benefit if the deficiency is environmental (e.g., facilities or equipment inadequate, work load increasing) or motivational (no feedback, lack of recognition). Remember, the Needs Analysis tells you if you have a training problem. Training would be an appropriate solution to performance problems traced directly to a skills or knowledge deficiency. Some situations that might suggest a training need based on a deficiency in skills or knowledge follow:

(1) The employee consistently performs the task incorrectly, even when knowingly being observed.

(2) Task completion requires knowledge and application of concepts, rules, and principles.

(3) The task is new.

Continued on next page

Chapter 2 – Analysis, Continued

ENG Form 4713-R

b. ENG Form 4713-R, Evaluation of Proposed Training Course, documents the assessment/identification and analysis of Corps training needs.

(1) Any Corps employee may identify a training need by initiating ENG Form 4713-R, Part I. See FORMS pages1-3. This part serves as the initial assessment of a training need. The originator should be explicit when completing Part I.

(2) CEHR-D personnel who assign a proponent will complete Part II.

(3) The proponent who verifies and expands the original needs assessment completes Part III.

(4) The course manager completes Part IV and forwards it to the proponent.

2-3. Description of the target population

a. Training products must meet the needs of the intended user. The target population description (TPD) tells the designer what the job performers, who will ultimately be the students, are really like. The TPD provides the designer with an assessment of the skills and knowledge already possessed by these job performers. The designer can use this information to establish the entry level for the training and then design training that will bring job performers up to a certain level of mastery.

b. Use CEHR-P Form 829, Target Population Description (FORMS, page 7), to describe the TPD and include the following information:

(1) SERIES: Job series of those, considered for training, who will perform the tasks.

(2) GRADES: Grades of the job performers who will receive the training. Effective training rarely is appropriate when personnel in grades (i.e., 7 through 13) are combined because of the varying levels of competency involved. Training is ineffective that bores the student either because it is too complex or too simple for his background. Confine the grades to those whose knowledge and skills will increase significantly by the proposed training.

(3) POSITIONS: Any positions or functional responsibilities the job performer has held in the past, presently holds, or seriously anticipates holding in the future.

Continued on next page

Chapter 2 – Analysis, Continued

2-3. Description of the target population, (continued)

(4) RESPONSIBILITIES: Pertinent responsibilities that the job performer has at the present or has had in the past.

(5) EXPERIENCE: Types of experience, past or present that job performers should possess. Include any minimum time requirements, e.g., two years' experience in contract negotiation.

(6) TRAINING: Any education or training that incumbents have acquired previously.

(7) KNOWLEDGE/SKILLS: Any knowledge or skills that the job performer possesses.

(8) The course control number is the three-digit number provided by the course manager.

2-4. Listing of the Major Job Functions

a. Once you have described the target audience, you may begin the process of defining job performance. Identifying the major job functions or duties performed by a successful jobholder or incumbent is the first step. Duty: (1) one of the main functions of a job or (2) one of the major subdivisions of work performed by an individual. A duty consists of a group of related tasks. See Listing of Tasks paragraph 2-5 below.

b. Job descriptions, qualification standards (OPM Handbook, X118), and previous analyses will help in formulating this list.

CEHR-P Form 830 (Duty List)

c. Use CEHR-P Form 830, Duty List / Task Inventory, (FORMS, page 8), to list the duties:

(1) State a duty using the "ing" form of an action verb (gerund) with an object, i.e., *tuning* engines, *evaluating* requests, *performing* flight maneuvers, *planning* work activities.

(2) Where applicable, list supervisory duties first.

(3) Number each duty. Use this number later to assign task numbers.

(4) The course manager will provide a three-digit course control number.

Continued on next page

Chapter 2 - Analysis, Continued

2-5. Listing of Tasks

The duty list describes the job in very broad terms. To define successful job performance accurately, break the duties down to tasks.

a. Task: a unit of work that forms a significant part of a duty. A task results in a meaningful product, even though the product is not always tangible. For example, a correct decision is a meaningful product. A task should meet the following criteria:

(1) Highly specific.

(2) Observable or measurable - You must either be able to see or hear a task being done or be able to measure the output.

(3) Definite beginning and end.

(4) Performed in short periods of time.

(5) Independent action - A task is done for its own sake and has a usable result. It is not a component of a procedure.

b. Task statement: the description of a task. Consider the following rules when writing task statements:

(1) Use a present tense action verb and an object. The subject "you" is understood. Examples: *operate* multimeter, *write* objectives, *clean* typewriter, and *load* computer tape.

(2) Each statement should deal with only one specific task; i.e., "inspect exhaust" NOT "inspect and repair exhaust."

(3) Statements should be brief. Try to confine each statement to two typewritten lines.

Continued on next page

Chapter 2 - Analysis, Continued

2-5. Listing of Tasks (continued)

(4) Use clear and easy-to-understand statements." Write production and control reports" is much better than "Accomplish necessary reports involved in the process of maintaining production and control procedures."

(5) Avoid the use of ambiguous words. Make sure you have no misunderstanding when using words such as check, assist, coordinate, recommend, determine, and assure.

(6) Be definitive. For example, "interpret visual photographs" could apply to several job incumbents, while "interpret radarscope photos" would confine the task to a particular jobholder. If there is more than one way to do a task, add a condition statement such as "using a QSM3-80 multimeter."

(7) Use current terminology common to the career field.

(8) Use abbreviations/acronyms cautiously. Spell out a term the first time you use it and follow with the abbreviation in parenthesis.

(9) Do not state qualifications as tasks. An incumbent's intelligence, aptitude, knowledge, education, skill, training, and experience are not tasks.

(10) Do not include items such as receiving instruction unless the jobholder performs some actual work. "Attend Lecture" does not indicate work performance.

Task Inventory

c. Combine the task statements for each task performed by the job incumbent to form the task inventory. Use CEHR-P Form 830, Duty List/Task Inventory, (FORMS, page 8), to list the task inventory.

(1) Group the task statements by duty. Sequence the tasks for each duty in a logical order, e.g., alphabetical arrangement or the order performed. This shortens reading time, aids in recalling unlisted tasks, and helps eliminate duplicate tasks.

(2) Assign task numbers to each task.

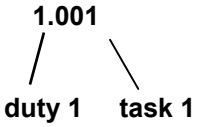
(a) For automation and survey purposes, number tasks consecutively. List the number under "Task Number." This number is the number that respondents will use to code their responses in the Task Analysis Data Booklet, if you conduct a survey.

Continued on next page

Chapter 2 - Analysis, Continued

Task Inventory (continued)

(b) Assign the second number according to the duty. Number each duty. The first number for each task is the duty number, followed by a period and a three-digit number to indicate the task number. For example: 1.001 indicates Duty 1, Task 1; 3.027 indicates Duty 3, Task 27. Place this number in parenthesis at the end of the task statement. Since the computer tabulation of the survey only lists the results by consecutive numbers, this second number is assigned to correlate duties and task statements. For example, the computer printout only shows task number and the task statement with no duty statement shown. However, the course manager can ascertain the specific duty statement from the duty list. See FORMS, page 8.



2-6. Methods for Conducting Task Analysis

A wide variety of methods for performing task analysis exists. Choose the method that suits your particular need and that of the course you are developing. Make the decision about which method to use in conjunction with your proponent and SMEs. Keep in mind that you should maintain documentation that describes the activities of the analysis phase. Task lists and a record of the participants provide adequate documentation in most cases. Make reference to existing task lists, guides to good practices, and similar sources of information when such sources form the basis of tasks selected for training.

Surveying the Target Population

To ensure the task inventory represents the target population, you may conduct a task survey. If you *do* conduct the survey, observe the following procedures:

a. Survey each division and district unless you know the organization has no personnel performing the tasks. When you know a lab has personnel who perform the tasks, survey the lab. Reasons for not including any of these organizations should become a part of the official files.

b. To encourage participation, mail the survey documents under a cover memorandum to the applicable functional division chief at each division/district/lab for distribution. See FORMS, page 9.

Continued on next page

Chapter 2 - Analysis, Continued

2-6. Methods for Conducting Task Analysis

c. For the survey to be valid, you must have sufficient responses from personnel in applicable series or grades. The course manager determines the number of responses requested from each division, district, or lab according to the density of the series or grades within each organization.

Surveying the Target Population, (continued)

d. The task inventory and the Task Analysis Data Booklet, CEHR-P Form 914, (FORMS, pages 10-12) become the survey documents. The Task Analysis Data Booklet is a machine-read booklet through which the target population members furnish certain demographical data to verify the target population description and their personal experience as to the difficulty, importance, and frequency of performance of each task. The Task Analysis Report shows a compilation of responses. See FORMS, page 13.

Table Top Analysis

Using facilitator, normally a course manager, a small group of 3 to 10 subject matter experts convene to identify the various tasks incumbents must perform. You need a minimum of one job incumbent and one supervisor to discuss the tasks. The facilitator conducts the session and documents the information. Through brainstorming and consensus, the team develops a sequential list of tasks. After this process, the team determines which tasks to train. Base task selection on frequency, difficulty, criticality, and the consequences of error or poor performance. For consistency, the team of experts should remain the same throughout the process. The Table Top Method of job analysis typically consists of the following:

a. Organizing the team.

b. Reviewing the job.

c. Identifying the duty area associated with the job.

d. Identifying the tasks performed in each duty area and write task statements.

e. Sequencing the duty areas and task statements.

f. Selecting tasks for training.

g. Document and maintain all documentation for the analysis phase.

Hybrid Method

This method involves both a quantitative analysis and a consensus building. Using job task documents, compile a list of tasks. Through an iterative process involving consensus building, have the SMEs, job incumbents, and supervisors assess the validity of the task list. Through discussions, each task's complexity, importance, and frequency, members rate the tasks numerically and come to a consensus. Once the group identifies the tasks, the group identifies and validates the knowledge, skills, and abilities required to perform each task. Remember to document all the details of the Hybrid Method for your audit trail.

Continued on next page

Chapter 2 – Analysis, Continued

2-6. Methods for Conducting Task Analysis (continued) **Observing the Expert Analysis**

This method uses an observer to record an expert performing a task. The observer is a person who aspires to be an expert in a similar job. The trainer's role is to set the analysis in motion by briefing the observer and the expert regarding the intended outcome of the observation. This method works best when three aspiring observers observe three similar experts. After the observations, the observers become a task force who meet with the trainers, proponent, and SMEs to determine the tasks for training.

Document Analysis

This technique is especially valuable when accurate procedures and other job-related documents are available. Document analysis is a simplified technique for determining required knowledge and skills directly from operating procedures, administrative procedures, and other job-related documents. An SME and a trainer review each section and step of the procedure or document to determine training program content. Document analysis consists of the following steps:

a. Review the procedure or document and list the knowledge and skills required by a worker.

b. Verify the accuracy of the results.

c. Record activities accomplished and maintain them for your audit trail.

Functional Analysis

When you are analyzing a position that performs a large number of tasks, e.g., management or engineering, you can use a technique called Functional Analysis. Rather than conducting a job analysis to identify specific tasks, you identify major functions within the positions. After you identify the competencies necessary to perform the major functions, you analyze those competencies to determine objectives for training. For example, a manager might make many plans such as production planning, facility and equipment requirements, and budget formulation. The training objectives needed to perform these objectives might read as (1) Create a Gantt Chart or (2) Build a Capacity Requirement.

Other Methods for Conducting Tasks Analysis

Other methods might include Interviews, Group Discussions, or Focus Groups. The methods listed here are not exclusive. You may use any one of the methods described in this Handbook, a combination of methods, or another viable methods of Task Analysis. However, you must *ensure* that you DOCUMENT what you do and maintain the documentation files for your records.

Continued on next page

Chapter 2 - Analysis, Continued

2-7. Selection of Tasks for Training

(d) The task inventory identifies all the tasks required by a particular job. Confine training to those tasks essential to mission accomplishment. Time and financial constraints limit the number of tasks selected for training.

(d) The Task Analysis Report, (FORMS, page 13), contains composite demographical data on the target population and recommendations as to the necessity for training. The report provides an objective basis for selecting those tasks that require training.

c. The recommendations in the Task Analysis Report are results of numerical values assigned to the responses on the difficulty, importance, and frequency of the tasks on the survey. The numerical values and resulting recommendations result from the criteria discussed below.

(d) Do not train tasks that the jobholder could

(d) Perform without training.

(d) Learn through manuals or job aids, given time.

(d) Learn on the job or seldom perform

(d) Fail to perform or perform incorrectly with minimal job degradation.

(2) Some tasks will be priority candidates for training because they are as

(a) Complex in nature.

(b) Critical to successful job performance.

(c) Critical for safety reasons

(3) Training may or may not be necessary for tasks of average difficulty and importance. Evaluate the frequency of performance on the job carefully to determine whether the jobholder needs formal training or if on-the-job or other types of training will suffice. Considerations should include the following:

(a) Does the incumbent perform the task frequently enough to allow on-the-job training before performance is required?

(b) Will the frequency of performance on the job provide the required level of training?

Continued on next page

Chapter 2 – Analysis, Continued

2-7. Selection of Tasks for Training, (continued)

d. Even though you base the recommendations on objective criteria with a survey, the course manager, proponent, and SME should review all recommendations to ensure they are valid for each particular task. Consider the case where the survey results indicate no training for a task because jobholders do not perform the task. However, the proponent and SME know for a fact that the task is a new requirement, required by regulation, not performed because the jobholders do not know how to perform the task. In such a case, the survey has identified or verified a performance deficiency, and trainers should consider training the task, provided the deficiency is the result of a lack of skills or knowledge.

As stated previously, if the performance deficiency results from environmental or motivational factors, training would be inappropriate. Ensure you document decisions made (e.g., train, no train) and rationale for those decisions.

2-8. Task Analysis

a. For each task selected for training, perform a task analysis to provide detailed information about how to perform the task in the actual work situation. This information facilitates the job of the designer and developer in developing effective training materials.

b. Complete a separate CEHR-P Form 832, Task Analysis / Objective Analysis Worksheet (FORMS, page 14) for each task selected for training.

(1) Conditions. Identify any special conditions, instructions, precautions, facilities, equipment, or procedures that are necessary to perform the task (e.g., tools, test equipment, forms, references, resources, emergency conditions, environmental settings, unusual weather conditions).

(2) Standards. Standards define acceptable performance of a task. Express them in terms of time limits, units of work, degree of accuracy, errors permitted, production rate, tolerances, etc. State how well the incumbent must perform the task, e.g., 95% correct; steps performed in order; with only one mistake; within 15 minutes; two out of three correctly within 10 minutes; according to procedure). See Job Aid 2.

Continued on next page

Chapter 2 – Analysis, Continued

2-8.
Task Analysis,
(continued)

(3) Elements. Elements are step-by-step directions about how to perform the task. The elements in some tasks are not as easily defined as others. For example, the task "Install air-conditioning units" is much easier to break into steps than "Prepare general investigative reports." In describing the elements for these more abstract tasks, consider these questions: What specific actions, reports, or studies must the incumbent complete to accomplish the task? How does the incumbent complete steps/elements or sub elements and in what order?

(a) Begin each element statement with an action verb.

(b) Use singular statements - do not combine steps.

(c) State the elements in the sequence in order of performance.

Chapter 3 - Design

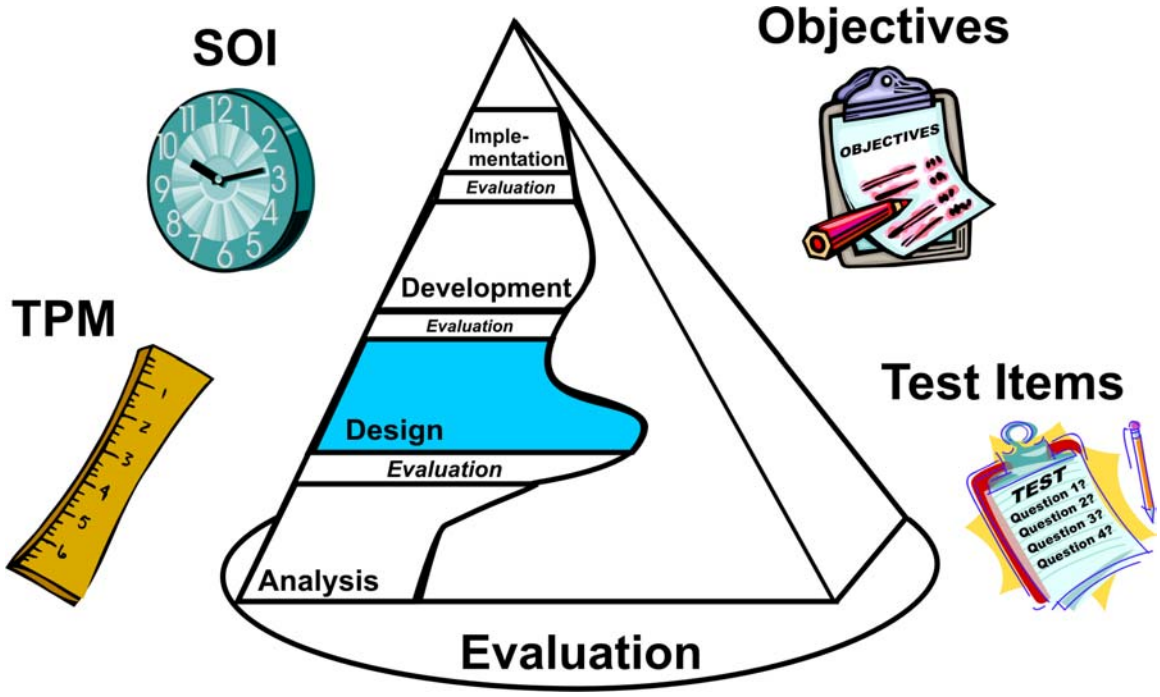


Figure 3-1. Design Phase

3-1. Design: Basic Requirements

The analysis phase reveals what needs to be trained. Products of the analysis phase drive the design process, which ultimately ends with a model or blueprint of the training program. The design phase includes development of the following:

a. Objectives.

b. Task performance measures (TPM).

c. Pretest/posttest items.

d. Schedule of instruction (SOI)

Continued on next page

Chapter 3 - Design, Continued

3-2. Development of Training Objectives

a. In the Design phase, writing clear learning objectives will answer the question, "What will the learners be able to do when they finish the training program?" Without well-constructed objectives, instructors don't know what to teach and learners don't know what they will learn. Objectives prescribe the behavior (action), conditions, and standard of task performance for the training. An objective tells the student the exact expectations upon completion of training. Objectives must meet the following criteria:

(1) Measurable by written or performance test within the learning or the testing environment. (This is the Task Performance Measure (TPM)).

(2) Contain a statement of student behavior that serves as evidence that the student has accomplished the TPM. Write the statement, using an action verb, in terms of what the student must perform, not what the instructor will do or say, e.g., *type* a letter or *lift* a load.

(3) Contain a standard to measure the student's performance against. The standard must specify exactly how well the student must perform the objective, e.g., *within ten minutes* or *without error*.

(4) State specifically the conditions under which the student must perform the task. Include any limits placed on student performance, description of performance environment, starting point, and what the student has to work with (tools, equipment, manuals, notes, etc.), e.g., *without reference to a manual* or *using a word processor*.

b. Formulate a minimum of one objective for each task identified for training. Use a CEHR-P Form 832, Task Analysis / Objective Analysis Worksheet, for each objective. See FORMS, page 14.

c. Sequence and group the objectives to provide a smooth flow from one task to another. For those objectives where mastery of one is necessary to master another or where mastery of one would make learning the other easier, transition from the simple or less complex to the more complex within a group and when moving from one group to another. Arrange the Worksheets in the order determined and note the sequence position on the Worksheet.

Continued on next page

Chapter 3 - Design, Continued

3-3. Establishment of Task Performance Measure (TPM)

The TPM is that measurable or observable action performed in training that indicates the student will adequately and appropriately perform the task when returning to the job.

(1) The ideal training situation exists when the student can perform the actual task under the same conditions and to the same standards required on the job. In this case, the TPM will duplicate the task statement, to include the action, condition, and standard developed in the task analysis.

(2) In some cases, the trainer cannot create the actual conditions of job performance. This necessitates development of a TPM that has high fidelity in predicting that students who successfully achieve the TPM will be able to perform the task successfully. Consider testing constraints such as time, manpower, costs, facilities, and equipment in developing the TPM. Decide whether a product, process, or both will be the basis of measuring accomplishment of the task. Further, make decisions about whether to test all or part of the task. Consider various ways of testing your objectives, e.g., practical exercises or group projects in addition to or in conjunction with written tests.

3-4. Design of Test Items

a. Design test items to test the student's mastery of the objectives.

(1) The pretest identifies students who can already perform the desired behaviors. Use the pretest for this purpose in Distance Learning training: students who pass the pretest for a particular module or sub module have no need to study that unit and can move on to a module where the training is necessary.

(2) Because of the uniqueness of a classroom-training program, you cannot use the pretest in the traditional manner since students are already present for training when you administer the pretest. However, you can use the pretest to provide feedback as to the accuracy of the target population description and to adjust the presentation of the course material. If a significant number of students consistently pass the pretest, evaluate the suitability of the target population description and level of instruction. Also, the pretest results could enable instructors to make immediate adjustments in presenting the course material if the pretest shows the students are either above or below the expected entry level.

(3) The posttest determines if students have accomplished the training objectives successfully and if instructors have taught what they were supposed to teach.

Continued on next page

Chapter 3 - Design, Continued

3-4. Design of Test Items (continued)

b. The pretest/posttest will be either a performance or performance-based written test. Tests must meet the following criteria:

(1) Test items must require the same behavior called for by the objectives.

(2) Develop a minimum of one test item for each objective, if at all possible. These items should be different from any questions used for practice.

(3) Construct written test items in multiple-choice format.

(a) Each item will have **four** answer choices.

(b) The correct answer should be unquestionably correct.

(c) Use the distracters to identify students, who are uncertain of the answer. Distracters should be plausible, incorporating the common misconceptions or errors of the students. Do not include "all of the above" or "none of the above" as distracters.

(d) Each test item must be independent, i.e., achieving the correct answer must not be based on achieving the correct answer in another question.

(e) Arrange distracters in ascending or descending order.

(4) The pretest and posttest will contain the same items. In the case of written tests, arrange the posttest items in a sequence different from that used in the pretest.

c. Write pretest/posttest items for each objective on the corresponding CEHR-P Form 832, Task Analysis / Objective Analysis Worksheet. See FORMS, page 14.

3-5. Schedule of Instruction

For classroom courses, determine the amount of time required to teach each objective. Developers must pay close attention to the time allotted to use the time effectively, with neither too little nor too much material to teach. Prepare a Schedule of Instruction (SOI) on CEHR-P Form 676 or a comparable format, to place in the student manual to serve as a course map. See FORMS, page 15.

Chapter 4 - Development

Section I - Development - Basic Requirements

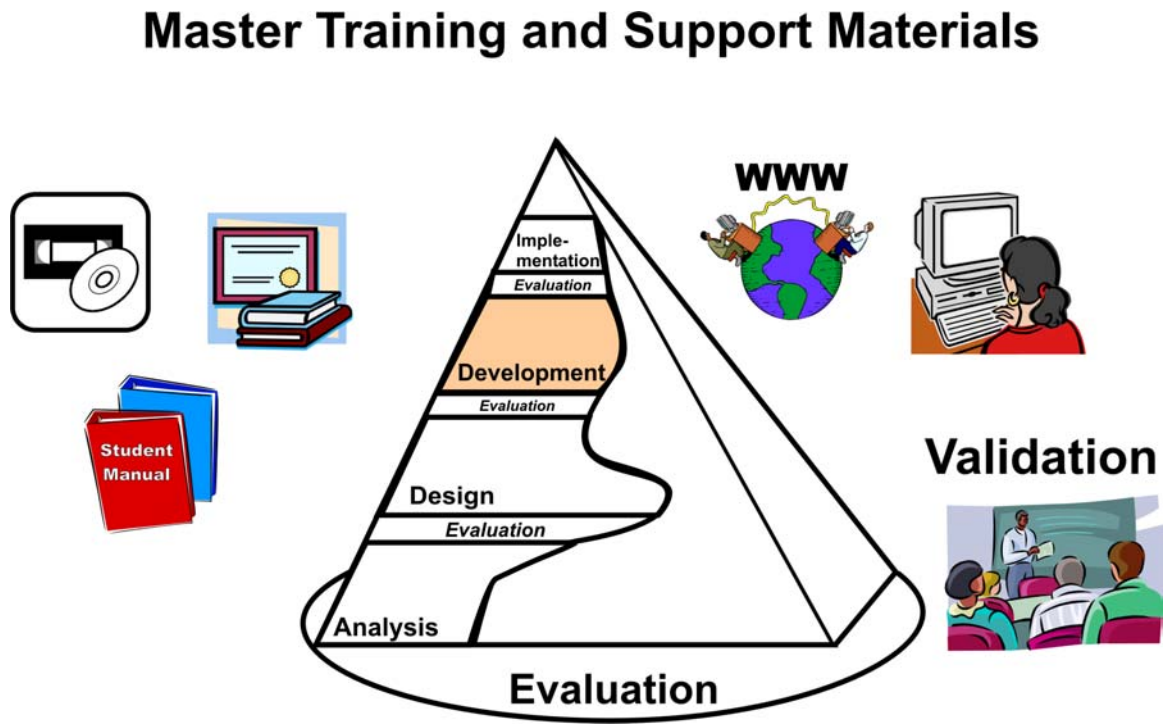


Figure 4-1. Development Phase

4.1. Development

Building on the Learning Objectives produced during the design phase, developers diagram and outline the necessary activities to assist learners in reaching those objectives. The development phase produces the following:

a. Delivery methods, such as PowerPoint presentations, films, lecture, etc.

b. A review of existing material. (You don't want to reinvent the wheel. Review any existing materials to determine if you can use them or redesign them. Avoid duplication of materials to save resources.)

c. Master Training Materials or Instructional courseware. (Student Manuals, handouts, etc.) Remember the cost factor, e.g., cut costs by putting basic concepts/ideas/information on CDs or on the web to avoid reviewing basics on the first day of a course. Send CDs for prerequisite reading to potential students and shorten course length, if at all possible. Additionally, you might furnish students with hyperlinks to relevant websites for selected advance reading materials.

Continued on next page

Chapter 4 - Development, Continued

Section II – Training Materials

4-2. Master Training Materials

Most PROSPECT courses occur in a conventional classroom setting. However, with e-learning, Internet, Distance Learning, Computer-Assisted Instruction (CAI), and Computer-Based Training (CBT), etc., the developer still has many important decisions to make regarding delivery of training. He or she may choose to incorporate more than one or two instructional strategies into the course program. Instructors will need a roadmap to ensure they teach the objectives, provide continuity of core material among sessions, and avoid duplication within a course. Lesson Plans and support materials become that roadmap for the instructors. For each course, these master materials include the following:

a. Master, approved Instructor Lesson Plans.

b. Master, approved support materials.

4.3 Lesson Plans

The Lesson Plan includes the materials and equipment the instructors need to teach a class. The training developers or instructors prepare these master lesson plans for each segment of training, using CEHR-P Form 675, or equivalent format. See FORMS, pages 16 and 17. The proponent approves the lesson plan for technical accuracy. The course manager approves the educational strategy. Approvals must occur prior to implementation of training. Any significant changes to approved lesson plans also require submission to the proponent and course manager for approval prior to implementation. Minimum lesson plan requirements and descriptions of their contents follow:

a. Subject. Title of major segment.

b. Time Period (Total). Length of time required to teach the material, including any student activity time, unless covered by another lesson plan.

c. Type of Lesson. State the lesson type, e.g., conference, lecture, computer-aided instruction (CAI), and lecture with questions, demonstration, or practical exercise.

d. Instructor. Name of preparer.

e. File No. Course control number.

Continued on next page

Chapter 4 - Development, Continued

Section II – Training Materials, Continued

4.3
Lesson Plans
(continued)

f. Course. Course short title.

g. Training aids. Any equipment and aids (e.g., PowerPoint slides, computer, laptop, power cords, audio, audiovisuals, books, manuals) necessary to conduct the lesson.

h. Objectives. Should be identical to those written in CEHR-P Form 832, Task Analysis / Objective Analysis Worksheets and included in the student manual.

i. Instructor references. List of source documents by title, page, and paragraph numbers.

j. Student references and homework. List of references used by the student by title and page number. Include a listing of homework assignments, as needed. If you need more space, list the homework assignments as the last item in the lesson outline.

k. Time. The amount of time allotted for presentation of topics.

l. Lesson outline. Detailed outline of planned lesson content, to include introduction, detailed presentation, summary, and evaluation. You can attach the PowerPoint presentation, with detailed notes, to the Lesson Plan cover sheet to serve as the Lesson Plan, IF and ONLY IF, the notes sufficiently explain how the instructor will cover the introduction, subject matter content, summary, and evaluation for the lesson.

(1) Details should be sufficient to allow a person knowledgeable in the subject matter to conduct the class with minimum research or preparation time.

(2) Develop lesson content to teach each objective.

(a) Select content on the basis of what the student must do to achieve the objective.

(b) Select procedures and support materials to convey the content.

Sequencing should provide for smooth flow from one objective to another as determined in the design phase on the CEHR-P Form 832, Task Analysis / Objective Analysis Worksheets, i.e., simple to complex, concrete to abstract, logically, and sequentially, especially where mastery of one objective is necessary to master another or would make mastery easier.

Continued on next page

Chapter 4 - Development, Continued

Section II – Training Materials, Continued

4-3. Lesson Plans (continued)

m. Key points/aid cues. Any aids or cues, to include visuals (by number) and reference documents. Include nomenclature, page and paragraph number. Write the cues adjacent to the points in the lesson where you will use them.

4-4. Materials and Aids to Support Classroom Training

a. Support materials serve as an extension of the instructor, not a replacement. Use them for the following:

(1) Increase interest by providing variety or change of pace to the instruction.

(2) Clarify or reinforce the spoken or written word.

(a) Illustrate.

(b) Emphasize.

(c) Provide example.

(3) Focus attention of students.

b. Development and approval. Personnel who approved the master lesson plans approve materials and aids to support the training. Course managers, in coordination with the proponent, will ensure such materials will be an integral part of the classroom training, necessary to support accomplishment of the training objectives in the classroom. Materials for supplemental or outside use serve no purpose unless the knowledge and skills gained from such materials become an integral part of the current classroom training, i.e., materials for homework, with the knowledge gained a requirement for building the next day's lesson. Lesson plans will designate the purpose of these materials. Don't forget to integrate Learning Activities into your materials. Be creative. Get students involved in the learning process.

c. Training manuals. Training manuals serve as guides for the student and instructor in the classroom and as reference material back on the job. Any material developed for the training manual must support accomplishment of the training objectives. PDSC Memo No. 55 prescribes the basic requirements for development of training manuals.

d. Publications to support classroom training. The course manager, in coordination with the proponent will approve publications used as support materials. CEHR-TO will not furnish or reproduce publications for purposes other than training.

Continued on next page

Chapter 4 - Development, Continued

Section II – Training Materials, Continued

4-4. Materials and Aids to Support Classroom Training (continued)

e. Handouts.

(1) Handouts should have a definite purpose in the lesson. The lesson plan should state where and how to use the handout.

(2) Identify the handout with a title.

(3) Number the pages and state applicable page numbers in the lesson plan so instructors can guide students in using the handout.

(4) Don't overload. Plan only those handouts that students can use within the classroom or as homework.

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f. PowerPoint presentations/transparencies/slides (visuals).

(1) Before developing the presentation, determine whether visualization is appropriate. Comprehension should be almost instantaneous upon viewing, leaving the student free to focus or concentrate on the speaker's message. Don't use large amounts of verbal material on one slide. Provide such reading material in the student manual or as a handout.

(2) Visuals should not be the major message carrier; you do not need a visual for everything the instructor says or does. Use for clarification, reinforcement, or gaining attention.

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(3) Develop one main idea per visual.

(4) If at all possible, use a horizontal format.

(5) Limit the information and use only key words.

(6) Use color for variety and focusing attention; however, avoid overuse or complicated patterns.

(7) If you must use a form or similar material, break it down, using an overall view first, and then display segments of the forms as discussion merits.

(8) Limit the information in graphs or tables. Be sure students can read the slides from the rear of the room. See JA-3 for Job Aid for Visuals.

Continued on next page

Chapter 4 - Development, Continued

Section II – Training Materials, Continued

4-5. Dry run

To provide continuity, eliminate duplication, identify omissions, and establish policy where various SMEs have divergent ideas, the course manager will schedule a dry run prior to initial presentation of the training. Preliminary lesson plans and support materials must be ready for use in the dry run. As practical, those instructors who will actually be teaching the course should participate in the dry run. The proponent or his designated representative provides approval of technical content. The course manager approves developmental and educational aspects. Submit draft materials, to include revised materials per the dry run, to the course manager who will coordinate any changes required with the proponent prior to production.

4-6. Production

After revision of draft materials, the course manager will oversee production. The course manager also determines milestones.

4-7. Courses Developed and Taught by a Contractor

For contract courses, the government furnishes the results of the analysis and design phase to the contractor as government-furnished material. The contractor will then furnish the SMEs to develop the training and materials, adhering to the COESAT process as stated above. Contractor personnel who will be the course instructors participate in the dry run.

4-8. Validation of Training Materials

Developers accomplish the validation process in two phases:

a. Internal SME board. The course manager, proponent (or representative), and SME review all materials to verify technical accuracy, coverage of all objectives, and educational soundness. Correct identified problems prior to the external validation.

b. External validation. Present the course to a small group of students (5-10; 5-7 optimum) in the same manner as you would present actual training. (Note: if you cannot perform this kind of external validation, your first iteration will serve as your external validation.)

(1) The course manager coordinates the validation and furnishes all course materials.

(2) The proponent furnishes a well-qualified facilitator to conduct the training.

Continued on next page

Chapter 4 - Development, Continued

Section II – Training Materials, Continued

4-8. Validation of Training Materials (continued)

(4) Students complete the pretest and posttest.

(5) Each student and the facilitator complete end-of-course evaluation forms.

(6) The course manager, in coordination with the proponent, evaluates the results of the validation and processes necessary corrections prior to final production of materials.

(7) Remember, revisions do not stop upon the first implementation of the program. Developers and instructors will make revisions and changes throughout the life of the program.

Chapter 5 - Implementation

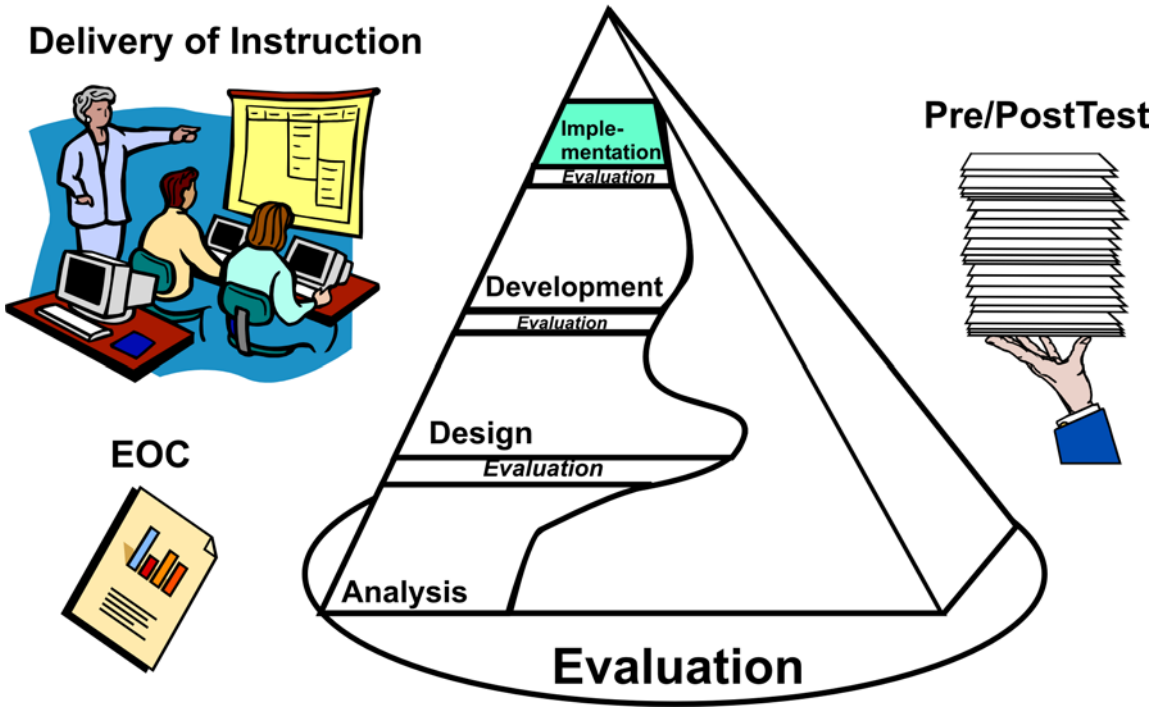

Figure 5-1. Implementation Phase

5-1. Implementation: Basic Requirements

Many activities must occur during the implementation phase, Figure 5-1, of training to ensure successful training. The activities included in this chapter specifically address the following:

a. The approved master materials used to present the instruction.

b. The test instruments designed to measure accomplishment of the training objectives.

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c. The students, instructors, facilitators, proponent, and CEHR evaluate training, as appropriate. As a minimum, each student must complete the following:

(1) Pretest for each student.

(2) Posttest for each student.

(3) End-of-course evaluation.

Continued on next page

Chapter 5 - Implementation, Continued

5.1 Implementation: Basic Requirements (continued)

As applicable, the course manager will prepare the following:

(4) Course evaluations. (See paragraph 5-7.)

(5) Instructor or facilitator evaluations. (See paragraph 5-8.)

5-2. Administration of the pretest

a. A good way to ease test anxiety is by explaining the purposes of the pretest.

(1) The pretest will measure the student's previous knowledge of the training objectives, not as a test of the student, but to give indicators to the trainers as to whether they have designed the training for the proper target audience. For example, a majority of the students answering a particular pretest question correctly over a period of time would indicate that the students did not need instruction on the particular subject matter covered by that question.

(2) The instructors can also use the pretest to tailor the instruction for a particular audience. Weaknesses and strengths indicated by the pretest for students in one session may be different from those in another session. The pretest provides the instructors suggestions about areas to stress or deemphasize for a particular audience.

(3) The students will not be able to answer every question or even a majority of the questions. If they could answer every question, they would have no need for the training. If they cannot confidently answer a question, they should leave a response blank. Guessing can produce false indications about class strengths or weaknesses. The false indications can result in students receiving inappropriate instruction or not receiving instruction they need.

b. The students should use a machine-scannable form, CEHR-P Form 911 (Test Answer Sheet), to record their answers. See FORMS, page18. Instructions for completion are on the form. Caution the students not to make any extraneous marks on the form, as this will render it unscannable. Students must use a pencil on all scannable forms.

Continued on next page

Chapter 5 - Implementation, Continued

5-2. Administration of the pretest (continued)

c. Collect all test materials (i.e., questions and answer sheets) upon completion of the pretest.

d. Do not discuss the answers to the pretest with the students. The pretest and posttest contain the same questions. (Do not tell the students this.) Discussion of the pretest answers will invalidate the posttest results.

e. Ensure each student completes a pretest.

5-3. Review of the pretest

During the student introductions, an instructor(s), not a student(s), should check the pretest.

a. Do not mark on the test answer sheets with anything other than a "copy-not pen" furnished by the PDSC. Any other marks will render the form unscannable.

b. The pretest provides the instructor(s) information as to the students' entry knowledge of the objectives. With this knowledge, the instructor(s) can gear instruction to any weaknesses or strengths identified by the pretest. For example, questions, which have not been answered correctly by most students, will indicate areas for instructional emphasis. Further, if the pretest shows most of the students already know the answer to some questions, these areas will not need extensive instruction.

c. When analyzing the pretest results, consider the following:

(1) A low percentage of correct responses indicates the class has little knowledge of the subject matter; therefore, the instructor will want to give special emphasis to presentation of this material.

(2) A high percentage of a particular incorrect response can further indicate a common misconception held by the students, which the instructor will want to counter in instruction.

(3) A high percentage of correct responses indicates the class has a fair grasp of the material that question is testing. In this case, the instructor will not need to put as much emphasis on this area as on areas where many incorrect responses exist. A cursory review may be sufficient or if the percentage is high enough, instructors should inform the proponent so that they can adjust the course material accordingly.

Continued on next page

Chapter 5 - Implementation, Continued

5-4. Delivery of instruction

a. Instructors/facilitators should discuss the training objectives before beginning each segment of instruction. The student's training manual contains the objectives at the beginning of each section; therefore, a good technique is to have the student locate and follow along as the instructor reads or discusses them. Discussion of the objectives eliminates guesswork on the student's part about the importance of the training: the student will know exactly what instructors expect of them upon completion of the training.

b. Instructors must use an approved schedule of instruction (SOI), master lesson plans, and support materials in the presentation of instruction. The master lesson plans contain the core material necessary for accomplishment of the objectives. Presentation using this master material ensures uniformity of training from one session of a course to another. Instructors may want to add their own touches to their portions of instruction (i.e., personal experiences). However, instructors should keep in mind that they must teach core materials to accomplish the objectives. Additionally, since the schedule of instruction provides only a limited amount of time for each portion of instruction, any personalization should not infringe upon time necessary to present required material.

5-5. Administration of posttest

a. The instructor administering the posttest can relieve some test anxiety by explaining the purpose of the posttest. The posttest questions reflect the objectives taught in the training. The course managers use the results to determine whether (1) the instructors have successfully presented the material, and (2) the students have accomplished the objectives.

b. The students should use a machine-scannable form, CEHR-P Form 911 (Test Answer Sheet), to record their answers. See FORMS, page 18. Instructions for completion are on the form. Caution the students not to make any extraneous marks on the form, as this will render the form unscannable.

Continued on next page

Chapter 5 - Implementation, Continued

5-5. Administration of the posttest (continued)

c. An instructor or facilitator should collect all test materials (i.e., questions and answer sheets) upon completion of the posttest and forward them to the PDSC within 5 working days after course completion or give them to the course manager if he/she is present.

d. After the designated individual collects all materials, one instructor should critique the test by reading the stem (part of the test that asks the question) and the complete correct answer. This procedure provides feedback to the students without compromising the test. To give the students their tests back could invalidate future test data. If possible, ensure the students know their scores on both the pretest and posttest. An effective method of letting the students know their numerical scores on the test is to put them on the back of the certificate in pencil.

5-6. Completion of end-of- course evaluations

The pretest and posttest provide objective information as to the success of the training. To round out the evaluation process, CEHR-TO solicits end-of-course evaluations, CEHR-P Form 924 (PROSPECT Classroom Course Evaluation) from the students. See FORMS, pages 19-22. The responsible person must ensure each student completes an evaluation.

5-7. Evaluation of courses

The course manager monitors the first session of all new courses and, when practical, sessions of existing courses in order to offer suggestions for improvements or revisions to the training strategy or methods of presentation. Use CEHR-P Form 744 (Evaluation of Proponent Sponsored Engineer Corps Training (PROSPECT) Course), FORMS pages, 23-24. The proponent or his representative monitors the first session of all new courses, and sessions of existing courses, as applicable, for technical accuracy. The proponent completes the applicable portion of CEHR-P Form 744.

5-8. Evaluation of instructors

To offer suggestions to enhance the capabilities of our instructor staff, the course manager completes a CEHR-P Form 748 (Evaluation of PROSPECT Instructor, FORMS, page 25), when evaluating training. The evaluation serves as a useful tool for the instructor, proponent, and course manager in assessing areas of strengths as well as areas of weakness.

5-9. Validation of classroom training and training materials

If you did not conduct an internal and external validation with small group groups, the results of the pretest and posttest for the first session of each new course can serve as validation of the training and training materials (i.e., determine their success and identify areas warranting change). See Chapter 6 for a detailed discussion of these evaluation instruments.

Chapter 6 - Evaluation

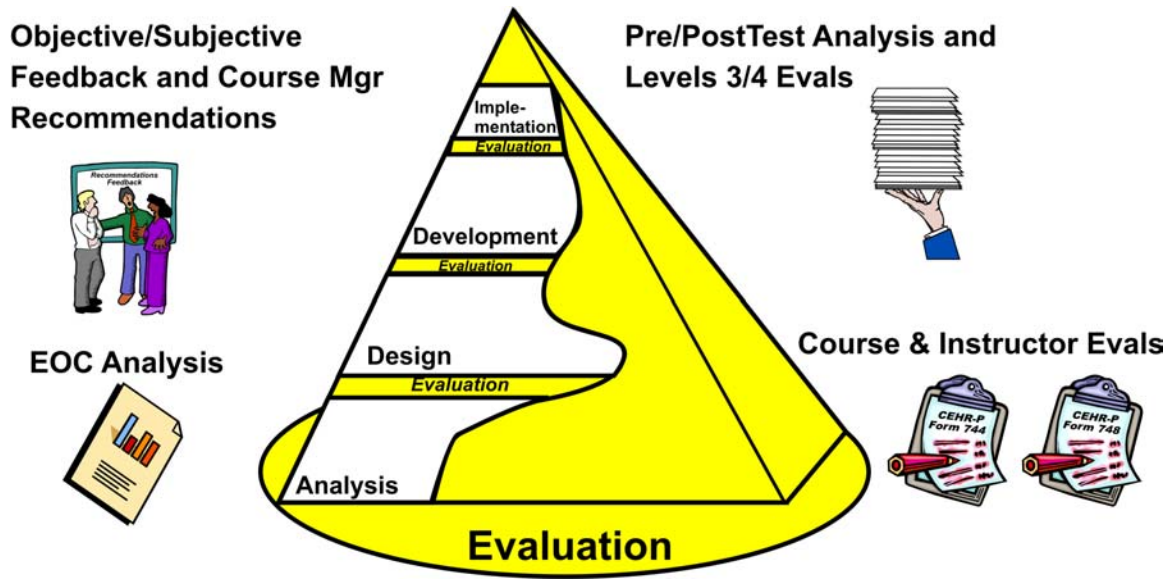

Figure 6-1. Evaluation Phase

6-1. Evaluation: Basic Requirements

a. The ultimate goal of the Corps of Engineers Systems Approach to Training is to provide quality training based on identified job needs (tasks). In the previous phases, we identified the target audience; described and substantiated the needs; and designed, developed, and implemented the training. Now, in the evaluation phase, Figure 6-1, we must determine whether we have accomplished our goal, i.e., did the training actually teach the students to perform the tasks that comprise their jobs and did the instructors teach what they were supposed to teach?

b. A well-rounded evaluation program is twofold.

(1) The results of the pretest/posttest provide *objective* feedback about the accomplishment of the training objectives.

(2) The student, instructor, and facilitator evaluations provide *subjective* feedback about how they perceive the training, based on their own individual needs or expectations.

Continued on next page

Chapter 6 - Evaluation, Continued

6-1. Evaluation: Basic Requirements (continued)

c. To aid in the evaluation process, the course manager will develop the following:

(1) For each session:

(a) Composite of student end-of-course evaluations - computer printout of totals for each question and demographic data, plus actual student comments. (See FORMS, pages 28-31, for examples of printout and resulting graph for courses.)

(b) Course manager's recommendations and comments.

(2) For new courses or existing courses, course managers will prepare the following during the implementation phase:

(a) Evaluation of Proponent Sponsored Engineer Corps Training (PROSPECT) Course, CEHR-P Form 744. (See example on FORMS, pages 23-24.)

(b) Evaluation(s) of PROSPECT Instructor(s), CEHR-P Form 748. (See example on FORMS, page 25.)

6-2. Analysis of pretest items

The pretest questions test accomplishments of the training objectives. Analysis of the pretest results yields objective information about the target audience and their abilities at the beginning of the training.

a. Consistent successful completion of pretest items can indicate an inaccurate assessment of the target audience. If the majority of the students can answer the questions, they do not need training on the tasks the questions cover. Look at the task identification and, subsequently, eliminate any training based on those tasks, if necessary.

Continued on next page

Chapter 6 - Evaluation, Continued

6-2. Analysis of pretest items (continued)

b. Consistent failure by the students to respond correctly to pretest questions reinforces the target audience's deficiency in particular areas. The course manager must continually attempt to answer the following:

(1) Does the deficiency result from a lack of training or from an environmental or managerial breakdown?

(2) Is the deficiency widespread across the Corps or is it confined to particular districts or divisions? Limitations in particular areas could indicate a problems originating from sources other than a training deficiency, i.e., if the target audience in some areas can perform without training, something occurs in those areas that is not occurring in the localities with deficiencies.

6-3. Analysis of the posttest

The pretest establishes the baseline of student needs prior to training. Comparison of the students' accomplishments on the pretest prior to training with their accomplishments *after* training on the posttest provides objective feedback about the success of the training. For example, did the training teach what it was supposed to teach? Can the students now perform successfully in those areas where they were deficient at the onset of training? Instructors/facilitators/course managers should examine all posttest questions not answered correctly by at least 80 percent of the students. Consider the following areas and questions in diagnosing problems:

a. Prerequisites: Did designers and developers properly define course prerequisites? If the students need minimal prerequisites, yet the instruction applies to the master level, instructional success will be minimal.

b. Design:

(1) Does the instruction stress the objectives sufficiently?

(2) Does the instruction counter common misconceptions?

(3) Is the test question properly constructed?

(a) Is the stem (question) ambiguous or misleading?

(b) Are the distracters clear?

(c) Are the distracters misleading?

Continued on next page

Chapter 6 - Evaluation, Continued

6-3. Analysis of the posttest (continued).

c. Instruction (presentation):

(1) Did the instructors stress the objectives during presentation?

(2) Did instructors discuss common misconceptions and correct them in the classroom?

(3) Is the instruction understandable?

(4) Was the instruction logical and sequential?

6-4. Analysis of student end-of-course evaluations

Course managers, instructors, and proponents review the student end-of-course evaluations for areas requiring improvements in single sessions as well as trends that develop for the entire course. For example, they consider whether comments pertain to a particular location or group of instructors or whether the comments remain consistent no matter who presented the course or where the course occurred. This information can help in determining whether to make changes in the course as a whole or in part.

6-5. Analysis of instructor and facilitator end-of-course evaluations

The instructor and facilitator should always provide feedback orally or in writing for the course manager to use in the evaluation of the course. This feedback provides a different viewpoint. For example, an instructor's comment that students did not participate in classroom activities would lead the course manager to search for the reasons in the students' evaluations in areas such as prerequisites, instructor motivation, and subject matter knowledge. Again, course managers will monitor comments that are peculiar to a particular location, instructor, or facilitator, as well as trends that develop over multiple sessions.

6-6. Analysis of Evaluation of Proponent Sponsored Engineer Corps Training (PROSPECT) Course, CEHR-P Form 744

As mentioned in Chapter 5, the course manager uses information from this form to determine the need for revision or changes in the course in areas covered by the evaluation. The course manager and proponent monitor the first session of any new course and monitor existing courses as necessary.

Continued on next page

Chapter 6 - Evaluation, Continued

6-7. Analysis of Evaluation of PROSPECT Instructor(s), CEHR-P Form 748

As discussed in Chapter 5, this evaluation can offer suggestions to enhance the capabilities of our instructor and facilitator staff. It emphasizes areas of strength on which to build as well as weaker areas for improvement.

6-8. Course manager's recommend-ations and comments

The course manager analyzes all the tools discussed and prepares recommendations for revisions to the course (e.g., content, materials, staff, scheduling) and coordinates these recommendations with the course proponent. The course manager ensures the implementation of required changes for the next course year, or immediately when warranted.

6-9. Levels 3 and 4 evaluations

Each course manager will conduct at least two Level 3 / 4 evaluations per year and additional evaluations as time permits. The course managers should maintain schedules of these evaluations to ensure they include all their assigned courses over time. Course managers may conduct the evaluations by email or by using forms mailed through the postal system. Course managers or technicians must obtain students' and students' supervisors' postal and email addresses at the time the students attend PROSPECT courses. The Level 3 / 4 evaluations should occur 6 months after the course ends. The course managers may construct their own Levels 3 / 4 evaluations or use standardized forms available for mailing.

Currently, PDSC course managers have the capability to do the following:

- Choose a course to evaluate.
- Construct Levels 3 and 4 surveys for students and their supervisors.
- Put those surveys on the server at PDSC.
- Send the students emails asking them to (1) go to the link for the student survey and respond (2) forward an email to their supervisors asking them to go to a link for the supervisor survey and respond.
- After the suspense date for responses, the course manager and the QA/QC officer may pull statistical reports from the PDSC Intranet regarding student and supervisor responses.

Course managers should conduct continuous *internal evaluations* to ensure students achieve learning objectives, and *external evaluations (Levels 3 and 4) as often as possible* to ensure that what instructors taught was relevant and transferred to the job and benefited the organization.

Chapter 6 - Evaluation, Continued

6-10. Certification

Many states, as well as certifying and licensing bodies, now require continuing education credits to maintain licenses and certification. The USACE PDSC is a registered provider with the following:

Organization	Continuing Education Credit
International Association for Continuing Education and Training (IACET)	CEU – Continuing Education Unit
American Institute of Architecture (AIA)	LU – Learning Unit
National Society of Professional Engineers (NSPE)	PDH – Professional Development Hour
Project Management Institute (PMI)	PDU – Professional Development Units

Select PROSPECT courses qualify for these credits as determined by (1) close examination of the analysis, design, development, implementation, and evaluation of course materials; (2) observation and evaluation of actual course conduct and instruction; (3) and statistics associated with pretest, posttests, and course evaluations. The Purple Book lists the number and kinds of credit granted for these select courses.

Chapter 7 - Conference, Workshops, Seminars

7-1. Purpose

From time to time, components of the Corps of Engineers or proponents ask the PDSC to conduct or sponsor conferences, workshops, or seminars. This document outlines a systematic method for formal documentation of activities associated with the preparation, design, development, and conduct of conferences, workshops or seminars.

7-2. Definitions

a. Conference: a formal meeting of a number of people for discussion or consultation. A seminar or workshop could be within a conference. A conference usually involves a larger number of people than that of a workshop or a seminar.

b. Workshop: a series of meetings for intensive study, work or discussion in a particular field. A workshop usually indicates a “hands-on” approach. Workshop and seminar are sometimes synonymous.

c. Seminar: a small group of students meeting regularly under the guidance of a tutor, e.g., to exchange information or discuss theories.

7-3. Background

a. Numerous states, certifying, registering, or licensing bodies, and professional associations have established mandatory continuing education and/or training (CE/T) requirements for engineers and land surveyors. To foster consistency in these requirements, the National Council of Examiners for Engineering and Surveying (NCEES) developed guidelines that it encourages entities to use and voluntarily comply with for CE/T. The specific board of licensure or association has the final approval on whether activities qualify for credit. However, following the guidelines and formal documentation of activities that comply with the guidelines make the approval of credit more likely.

b. The PDSC concurs with the NCEES guidelines and will adhere to those guidelines. Additionally, the PDSC will require a modified version of the regular COESAT documentation. See JA-1 for the COESAT Job Aid that lists the COESAT documentation necessary for conferences, workshops, and seminars.

7-4. Policy

a. The PDSC will only award CE/T credit for conferences, workshops, or seminars that are officially approved by (1) the Chief, Engineering and Construction Division and/or other Division Chiefs, HQUSACE, or higher authority; (2) the Chief, PDSC; or (3) QA/QC Officer in the case of courses earning Professional Development Units (PDUs) for the Program Management Institute (PMI).

Continued on next page

Chapter 7 - Conference, Workshops, Seminars, Continued

7-4. Policy (continued)

b. The standard measurement for credit other than for the PMI will be the professional development hour (PDH). The NCEES requires that any other measurement be converted to PDHs.

c. An individual who delivers or attends a technical professional presentation that is a part of an approved conference or seminar program may count his or her attendance for PDHs.

d. One hour of participation will earn one PDH. One hour of presentation will earn 2 PDHs. An individual can only earn presentation credit for the first time he or she makes the presentation.

7-5. Documentation

The organization sponsoring the conference, seminar, or workshop will maintain the documentation to show the following:

a. Location and inclusive dates.

b. Sponsoring organization point(s) of contact.

c. Each attendee's name.

d. Each attendee's social security number (SSN).

e. Each participant. (For workshops and seminars, you may only have one continuous session.)

f. A detailed description of each session's content.

g. Number of PDHs to be earned for each session.

h. A biographical sketch of each presenter, listing qualifications.

The sponsoring organization will provide each participant a completion certificate that lists the following:

a. Conference, Workshop, Seminar title, location, and inclusive dates.

b. Participant's name and SSN.

c. List of sessions attended by participant, if applicable.

d. Number of PDHs or PDUs earned for sessions attended.

Continued on next page

Chapter 7 - Conference, Workshops, Seminars, Continued

7-6. Responsibility

a. The student is responsible for determining the number of PDHs or PDUs needed in a given year to maintain individual records. The student is also responsible for completing and submitting any forms required by the certifying, registering, or licensing body.

b. The PDSC will maintain conference, workshop, and seminar documentation as well as student attendance records for all activities sponsored and approved as a PROSPECT conference, workshop, or seminar.

7-7. Certificates

a. When the PDSC sponsors a PROSPECT conference, workshop, or seminar, the certificates will be like the certificates issued for a regular PROSPECT course and will list the number of PDHs or PDUs earned, *if* the conference, workshop, or seminar met the qualifications for PDHs or PDUs.

b. When a component of the Corps sponsors a conference, workshop or seminar, the sponsoring organization will work with PDSC QA/QC personnel in designing the certificate. Publication of the certificate will be the responsibility of the sponsoring component. A sample certificate for a conference is on the PDSC website or QA/QC personnel will furnish a sample upon request.

7-8. COESAT Requirements

See JA-1, the COESAT Job Aid, for documentation necessary for conferences, workshops, and seminars.

EVALUATION OF PROPOSED TRAINING COURSE (ER 690-1-414)	USACE CONTROL NUMBER	RCS: CEHR-D-35

TO: CDR, USACE (CEHR-D) WASH DC 20314-1000	NOTE: FORM MAY BE SUBMITTED AT ANY TIME; HOWEVER, TO BE IN THE NEXT SCHEDULED TRAINING SURVEY, IT MUST BE RECEIVED BY CEHR BY 1 OCT

PART 1

ORIGINATOR COMPLETES PART I AND FORWARDS ALL PARTS TO CEHR-D. IF ORIGINATOR IS ALSO PROPONENT, COMPLETE PARTS I AND III BEFORE SENDING TO CEHR-D; USE ADDITIONAL SHEETS IF NECESSARYATTACH DRAFT COURSE DESCRIPTION

1. PROPOSED COURSE TITLE	2. SUGGESTED HQUSACE PROPONENT ORGANIZATION

3. EXPLAIN WHY THIS COURSE IS NEEDED AND WHAT KNOWLEDGE, SKILLS, AND ABILITIES TRAINEES SHOULD OBTAIN FROM THE COURSE
.

4. SUGGESTED TASKS/TOPICS TO BE COVERED BY THIS COURSE

5. TARGET AUDIENCE (List the types of employees who should attend. Include functional areas, grade level, and series of potential students. List any knowledge or skills nominees should have **before** attending this class)

6. COMMENTS

NAME, TITLE AND ORGANIZATION (Type or Print)	SIGNATURE	TELEPHONE NO.(incl Area Code)
		Date

PART II

CEHR-D ASSIGNS USACE CONTROL NUMBER, PROVIDES COMMENTS

COMMENTS

NAME, TITLE AND ORGANIZATION (Type or Print)	SIGNATURE	TELEPHONE NO.(incl Area Code)
		Date

PART III

COURSE PROPONENT COMPLETES PART III AND RETURNS TO CEHR-D. USE ADDITIONAL SHEETS IF NECESSARY

1. GENERAL

a. CURRICULUM STABILITY

(1) HOW OFTEN ARE CHANGES ANTICIPATED?

(2) WHAT TYPES OF CHANGES WOULD BE INVOLVED? (e.g. regulation update/changes, on-the-job task changes, etc)

(3) HOW EXTENSIVE WOULD THE CHANGES BE? (e.g. major-entire course; moderate-half the course; minor-little changes; etc)

b. WHEN IS THE FIRST TRAINING NEEDED? (Qtr/Yr, justify any requirements less than 18 months)

c. THE LEVEL BEING TRAINED (e.g.,. BASIC OR ADVANCED)

2. SPECIAL COURSE CONSIDERATIONS (e.g. equipment needs, computer computer time, funding, regional application, etc)	3. Estimated # to be trained- Explain the method used to determine these numbers in block 6

4. RECOMMEND CLASSROOM _____ OR DISTANCE LEARNING_____ (EXPLAIN RECOMMENDATION)

5. SUGGESTED PRICE FOR DEVELOPMENT/INSTRUCTORS (NAME, ORGANIZATION, TELEPHONE, IF KNOWN)

CORPS EMPLOYEE
LABS
CONTRACTORS

6. REMARKS (AMPLIFY/CLARIFY/VERIFY INFORMATION IN PART I)

NAME, TITLE AND ORGANIZATION (Type or Print)	SIGNATURE	TELEPHONE NO.(incl Area Code)
		Date

PART IV CEHR-P COMPLETES FORWARDS TO PROPONENT BY SUSPENSE DATE		
1. COURSE TITLE		2. CEHR-D CONTROL NUMBER
3. CEHR-P CONTROL NUMBER	4. CLASS SIZE (IF CLASSROOM TRAINING SELECTED)	5. CLASS LENGTH
6. SIMILAR COURSE OR DUPLICATION OR SUBJECT MATTER OFFERED IN OTHER COURSE BY USACE, FEDERAL GOVERNMENT, INDUSTRY OR ACADEME (EXPLAIN RESEARCH METHOD AND RESULTS)		
7. RECOMMEND CLASSROOM _____OR DISTANCE LEARNING _____(EXPLAIN RECOMMENDATION)		
8. ESTIMATED COST IN DOLLARS	a. DEVELOPMENT $_____ b. FIRST YEAR $_____	
9. PROPOSED SURVEY SCHEDULE (SESSION #, DATES, LOCATIONS)		
10. REMARKS-CEHR-P REACTION IN TERMS OF FUNDING, INSTRUCTOR AVAILABILITY, CEHR-P STAFF REQUIRED, TIME NEEDED FOR DEVELOPMENT, ETC.		
11	PREPARED BY	
NAME, TITLE (TYPE OR PRINT)	SIGNATURE	TELEPHONE NO. (INCL AREA CODE) DATE:
	APPROVED BY	
NAME, TITLE (TYPE OR PRINT)	SIGNATURE	TELEPHONE NO. (INCL AREA CODE) DATE:

VERIFICATION OF TRAINING NEEDS FY_____ (ER 690-1-414)	REQUIREMENT CONTROL NO. CEHR-D-24

PART I
(To be completed by CEHR-P)

TO:	FROM: USACE PROFESSIONAL DEVELOPMENT SUPPORT CENTER ATTN: CEHR-P P.O. BOX 1600 HUNTSVILLE, AL 35807-4301

1. COURSE TITLE	2. CONTROL NO.	3. LENGTH (HOURS)
4. TYPE	5. CLASS SIZE	6. CERTIFICATION CREDITS ____CEU ____PDH _____LU

7. COURSE HISTORY

NO. YEARS CONDUCTED	NO. YEARS PROSPECT PROGRAM	TOTAL STUDENTS COMPLETING

FISCAL	SURVEY		ALLOCATIONS		CONDUCTED	
YEAR	SESSIONS	STUDENTS	SESSIONS	STUDENTS	SESSIONS	STUDENTS

8. CEHR-P SURVEY DATA RECOMMENDATION:

Session Number Start Date End Date City State

9. CEHR-P COMMENTS: PLEASE REVIEW THE COURSE DESCRIPTION FOR ACCURACY & UPDATE

COURSE MANAGER/TELEPHONE#	SIGNATURE	DATE

ENG Form 4712-R, Nov 02 ALL PREVIOUS EDITIONS ARE OBSOLETE Page 1 of 3 Pages (Proponent CEHR-D)

PART II
(To be completed by the USACE Proponent)

TO: USACE PROFESSIONAL DEVELOPMENT SUPPORT CENTER ATTN: CEHR-P P.O. BOX 1600 HUNTSVILLE, AL 35807-4301	FROM

1. DOES THE COURSE HAVE A LEGAL OR REGULATORY BASIS? (IF YES, PLEASE LIST BY TITLE AND DATE.)

2. WHAT SPECIFIC COMPETENCIES, SKILLS, KNOWLEDGES, ABILITIES, DEVELOPMENTAL REQUIREMENTS, ETC, ARE ADDRESSED BY THIS COURSE?

3. IS THE COURSE INCLUDED AS MANDATORY OR OPTIONAL TRAINING IN ANY ACTEDS PLAN? IF SO, PLEASE LIST BY CAREER PROGRAM TITLE AND NUMBER EACH PLAN THAT INCLUDES THIS COURSE.

4. ARE THE RIGHT PEOPLE (THOSE INCLUDED IN THE DESIGNATED TARGET POPULATION(S)) ATTENDING THIS COURSE? IF NOT, WHO IS NOT GETTING THE TRAINING? ARE THERE ANY PRIMARY ISSUES OR CONCERNS IN THIS AREA?

5. COURSE NEEDED IN FY_____? _____ NO _____ YES (IF YES, PLEASE EXPLAIN APPLICABILITY TO CORPS MISSION AND STRATEGIC INITIATIVES.)

6. RECOMMENDED COURSE FREQUENCY, IF NOT OFFERED ANNUALLY:

_____EVERY TWO YEARS _____ EVERY THREE YEARS

7. RELATIONSHIP OF THIS COURSE TO OTHER TRAINING

a. DO YOU KNOW OF ANY TRAINING OF A SIMILAR NATURE AVAILABLE THROUGH GOVERNMENT, INDUSTRY OR ACADEMIA?

_____ NO _____ YES (IF YES, PLEASE PROVIDE INFORMATION ON PROVIDER, COST, LOCATION, METHOD OF DELIVERY)

b. IF YES, WHY MUST THIS BE CONDUCTED AS A USACE COURSE? (IF AVAILABLE TRAINING IS INSUFFICIENT, UNSATISFACTORY, ETC., PLEASE EXPLAIN.)

8. REMARKS

a. ARE ANY MAJOR/MINOR CHANGES TO THE FY_____COURSE/MATERIALS ANTICIPATED, I.E. NEW REGULATIONS, POLICY, ETC.?

_____ NO _____YES (IF YES, PLEASE PROVIDE A BRIEF DESCRIPTION OF CHANGE(S) AND THE REASON FOR THEM.) PLEASE ESTIMATE HOW MUCH THESE CHANGES WILL COST $_____ AND/OR MANHOURS_____.

b. IS A SUFFICIENT SUPPLY OF DEVELOPERS/INSTRUCTORS AVAILABLE AT THIS TIME TO SUPPORT TRAINING DEVELOPMENT AND PRESENTATION ? _____ YES _____ NO

9. ANSWERING THE FOLLOWING QUESTION WILL HELP PROPONENTS AND THE PDSC IDENTIFY COURSES (OR MODULES OF COURSES) TO CONVERT FROM CLASSROOM DELIVERY TO A MORE ECONOMICAL MODE OF DELIVERY (e.g. DISTANCE LEARNING, CD-ROM, OR ON THE USACE LEARNING NETWORK).

a. COURSE IS CURRENTLY DELIVERED ONLY IN CONVENTIONAL/FORMAL CLASSROOM TRAINING MODE.
_____YES_____NO

b. COURSE IS REASONABLY STABLE REQUIRING ONLY MINIMAL UPDATES, e.g. STANDARD MINOR, ANNUAL UPDATE TO KEEP COURSE IN SYNC WITH CHANGING PROCEDURES, TERMINOLOGY, STATISTICS, ETC.
_____YES _____NO

c. COURSE PROVIDES TRAINING REQUIRED BY A RELATIVELY LARGE OR DIVERSE TARGET POPULATION, e.g. APPROXIMATELY 100+STUDENTS PER YEAR, AND /OR BROAD IN SCOPE, COVERING MULTIPLE CAREER PROGRAMS/CAREER FIELDS ACROSS USACE / ARMY/DOD. _____YES _____NO

d. COURSE IS MORE THAN EIGHT HOURS, BUT NO MORE THAN TWO WEEKS IN LENGTH. _____YES _____NO

e. COURSE PROVIDES COGNITIVE TRAINING WHICH REQUIRES MINIMAL HANDS ON PARTICIPATION BY STUDENTS AND DOES NOT REQUIRE SUBSTANTIAL STUDENT INTERACTION. _____YES _____NO

f. IF YOU RECOMMEND THIS COURSE REMAIN CLASSROOM BASED, ARE THERE SEGMENTS OR MODULES OF THE COURSE THAT YOU WOULD LIKE TO CONSIDER FOR CONVERSION TO DISTANCE LEARNING? IF SO, PLEASE DESCRIBE THEM:

10. ADDITIONAL COMMENTS

NAME AND ORG SYMBOL OF COURSE PROPONENT, PHONE, E-MAIL ADDRESS	SIGNATURE	DATE

TARGET POPULATION DESCRIPTION
PROPOSED TRAINING TITLE:
COURSE CODE:
SERIES:
MILITARY PERSONNEL EQUIVALENTS: _____
POSITIONS: _____
RESPONSIBILITIES: _____
EXPERIENCE: _____
TRAINING: _____
KNOWLEDGES: _____

CEHR-P FORM 829
1 DEC 03

DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
WASHINGTON, D.C. 20314-1000

Duty List/Task Inventory	
Proposed Training Title: HVAC Operations and Maintenance **Course Code:** 246	
Duty Number: 2	**Duty Statement:** Operating standard HVAC control systems.
Task Number:	**Task Statement(s):**
2.001	Operate standard digital controller in manual mode.
2.002	Operate standard digital controller in self-tune mode.
2.003	Operate standard digital controller in automatic mode.
Duty Number: 3	**Duty Statement:** Maintaining standard HVAC control systems.
Task Number:	**Task Statement(s):**
3.001	Calculate digital controller operating parameters to achieve proper system performance.
3.002	Use multimeter to measure sensor/transmitter output signals.
3.003	Replace time clock battery.
	(Note: This particular duty had a total of 12 tasks—three listed to show sample.)

SAMPLE

CEHR-P Form 830
1 Dec 03

DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
WASHINGTON, D.C. 20314-1000

REPLY TO
ATTENTION OF

S: DATE

CEHR-P-TO (690-400a) Date

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Task Analysis Survey

1. The Professional Development Support Center is developing training for Heating, Ventilation, and Air-Conditioning (HVAC) Control Systems Operation and Maintenance. To verify the need for this training and to ensure that any training developed meets the needs of the target audience, we are conducting a survey to identify those tasks that require training.

2. Enclosed are five Task Analysis Data Booklets and Duty List/Task Inventory for the survey respondents to use. The Task Analysis Data Booklet contains instructions for completing the survey. Give priority to HVAC Operation and Maintenance personnel in the grades WG 8-12.

3. Please return the completed booklets and inventories in the enclosed addressed envelopes to CEHR-P-T (Course Manager) NLT (Date).

4. Thank you for your continued assistance and support in helping us develop effective training to meet the needs of our customers.

5. Please refer questions concerning this survey to (Course Manager), telephone Number) and e-mail address .

2 Encls

Gary F. Andrew
Director, USACE Professional Development
Support Center

DISTRIBUTION:
(Insert Distribution List)

DO NOT BEND, FOLD, STAPLE OR MUTILATE

US Army Corps of Engineers

TASK ANALYSIS DATA BOOKLET

INTRODUCTION

The US Army Corps of Engineers Professional Development Support Center has the responsibility for developing effective training to meet Corps of Engineers' needs. In order to accomplish this mission, input from those persons occupying the applicable positions is essential. We are soliciting your help in identifying tasks that require training in the areas identified in the accompanying task inventory. It is requested that you respond to the attached questionnaire, basing your responses on your personal experience.

PRIVACY ACT STATEMENT

Authority: Title 5, United States Code, Section 301

Purpose: To promote the development of valid instructional programs by identifying those tasks which require formalized training.

Routine Use: To provide data to be used in determining training requirements.

Disclosures and Effects on Individuals: All disclosures are voluntary with no penalties to be imposed upon individuals not providing information. Data collection does not require the recording of names. Information obtained will not be used against any individual under any circumstances.

INSTRUCTIONS

You will need a Task Analysis Data Booklet and a Task Inventory to complete this survey.

There are three questions to be answered in the Task Analysis Data Booklet for each task in the Task Inventory. Read each task in the inventory and mark your response to each question for that task next to its corresponding number in the Task Analysis Data Booklet.

Use a No. 2 soft lead pencil. Completely fill in the circle indicating your response. Be sure you place your responses in the proper column, marking only one response per column, three responses per task. If you change your mind, erase your first mark completely.

If the responses do not agree with your opinion, mark the response that most closely agrees. If a task that you perform is not listed anywhere in the entire list, place it on the comment sheet provided and state the appropriate responses.

Do NOT make any marks other than your responses or write on the booklet. These forms are tabulated by computer and any writing other than response marks will cause a malfunction in the computer operations.

Course code can be found at the top of the first page on the task inventory.

COURSE CODE		
0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

SUPERVISOR
YES ○
NO ○

CIVILIAN SERIES			
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

MILITARY MOS		
0	0	A
1	1	B
2	2	C
3	3	D
4	4	E
5	5	F
6	6	G
7	7	H
8	8	I
9	9	J
		K
		L
		M
		N
		O
		P
		Q
		R
		S
		T
		U
		V
		W
		X
		Y
		Z

DIV/DIST.		
A	A	A
B	B	B
C	C	C
D	D	D
E	E	E
F	F	F
G	G	G
H	H	H
I	I	I
J	J	J
K	K	K
L	L	L
M	M	M
N	N	N
O	O	O
P	P	P
Q	Q	Q
R	R	R
S	S	S
T	T	T
U	U	U
V	V	V
W	W	W
X	X	X
Y	Y	Y
Z	Z	Z

CLASSIFICATION														
GM	GS	WG					OFFICER		WARRANT OFFICER				ENLISTED	
○	○	○					○		○				○	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

TIME IN CAREER FIELD	
1–6 months	○
6–12 months	○
1–2 years	○
2–3 years	○
3–4 years	○
4–8 years	○
8–14 years	○
Over 14 years	○

TIME IN PRESENT ASSIGNMENT	
1–6 months	○
6–12 months	○
1–2 years	○
2–3 years	○
3–4 years	○
4–8 years	○
8–14 years	○
Over 14 years	○

TIME IN GRADE	
1–6 months	○
6–12 months	○
1–2 years	○
2–3 years	○
3–4 years	○
4–8 years	○
8–14 years	○
Over 14 years	○

EDUCATIONAL LEVEL	
H/S Diploma	○
GED	○
Did not complete H.S.	○
Credits toward BA/BS	○
Bachelors Degree	○
Credits toward MA/MS	○
Masters degree or higher	○

SURVEY YEAR	
9	0
0	1
	2
	3
	4
	5
	6
	7
	8
	9

INSTRUCTIONS: For each task, blacken the circle under the correct column to indicate your response to the questions below.

DIFFICULTY: Is task difficult to learn?

IMPORTANCE: How important is task in job performance?

FREQUENCY: How often is the task performed?

	DIFFICULTY			IMPORTANCE			FREQUENCY		
	1 EASY	2 AVERAGE	3 VERY	1 NOT	2 AVERAGE	3 VERY	1 NEVER	2 SOME	3 OFTEN
1.	①	②	③	①	②	③	①	②	③
2.	①	②	③	①	②	③	①	②	③
3.	①	②	③	①	②	③	①	②	③
4.	①	②	③	①	②	③	①	②	③
5.	①	②	③	①	②	③	①	②	③
6.	①	②	③	①	②	③	①	②	③
7.	①	②	③	①	②	③	①	②	③
8.	①	②	③	①	②	③	①	②	③
9.	①	②	③	①	②	③	①	②	③
10.	①	②	③	①	②	③	①	②	③
11.	①	②	③	①	②	③	①	②	③
12.	①	②	③	①	②	③	①	②	③
13.	①	②	③	①	②	③	①	②	③
14.	①	②	③	①	②	③	①	②	③
15.	①	②	③	①	②	③	①	②	③

	DIFFICULTY			IMPORTANCE			FREQUENCY		
	1 EASY	2 AVERAGE	3 VERY	1 NOT	2 AVERAGE	3 VERY	1 NEVER	2 SOME	3 OFTEN
16.	①	②	③	①	②	③	①	②	③
17.	①	②	③	①	②	③	①	②	③
18.	①	②	③	①	②	③	①	②	③
19.	①	②	③	①	②	③	①	②	③
20.	①	②	③	①	②	③	①	②	③
21.	①	②	③	①	②	③	①	②	③
22.	①	②	③	①	②	③	①	②	③
23.	①	②	③	①	②	③	①	②	③
24.	①	②	③	①	②	③	①	②	③
25.	①	②	③	①	②	③	①	②	③
26.	①	②	③	①	②	③	①	②	③
27.	①	②	③	①	②	③	①	②	③
28.	①	②	③	①	②	③	①	②	③
29.	①	②	③	①	②	③	①	②	③
30.	①	②	③	①	②	③	①	②	③

US ARMY CORPS OF ENGINEERS
TASK ANALYSIS

PAGE 1
DATE - 01/04/99

PROGRAM: 246 -

POPULATION - 104

SUPERVISOR .....
YES = 14 (13%) NO = 80 (77%)

CIVILIANS (GS).....
01 = 0 (0%) 04 = 0 (0%) 07 = 0 (0%) 10 = 0 (0%) 13 = 0 (0%)
02 = 0 (0%) 05 = 0 (0%) 08 = 0 (0%) 11 = 2 (2%) 14 = 0 (0%)
03 = 0 (0%) 06 = 0 (0%) 09 = 1 (1%) 12 = 0 (0%) 15 = 0 (0%)

CIVILIANS (WG).....
01 = 0 (0%) 04 = 0 (0%) 07 = 1 (1%) 10 = 59 (57%) 13 = 0 (0%)
02 = 0 (0%) 05 = 1 (1%) 08 = 2 (2%) 11 = 4 (4%) 14 = 1 (1%)
03 = 0 (0%) 06 = 0 (0%) 09 = 5 (5%) 12 = 0 (0%) 15 = 0 (0%)

OFFICERS .....
O1 = 0 (0%) O3 = 0 (0%) O5 = 0 (0%)
O2 = 1 (1%) O4 = 0 (0%) O6 = 0 (0%)

ENLISTED .....
E1 = 0 (0%) E3 = 0 (0%) E5 = 2 (2%) E7 = 0 (0%) E9 = 0 (0%)
E2 = 0 (0%) E4 = 0 (0%) E6 = 1 (1%) E8 = 0 (0%)

TIME IN CAREER FIELD .....
1-6 MOS = 0 (0%) 6-12 MOS = 0 (0%)
1-2 YRS = 1 (1%) 2-3 YRS = 2 (2%) 3-4 YRS = 2 (2%)
4-8 YRS = 7 (7%) 8-14 YRS = 15 (14%) OVR 14 YRS = 72 (69%)

TIME IN PRESENT ASSIGNMENT .....
1-6 MOS = 1 (1%) 6-12 MOS = 1 (1%)
1-2 YRS = 6 (6%) 2-3 YRS = 7 (7%) 3-4 YRS = 12 (12%)
4-8 YRS = 14 (13%) 8-14 YRS = 26 (25%) OVR 14 YRS = 30 (29%)

TIME IN GRADE .....
1-6 MOS = 2 (2%) 6-12 MOS = 3 (3%)
1-2 YRS = 0 (0%) 2-3 YRS = 7 (7%) 3-4 YRS = 8 (8%)
4-8 YRS = 10 (10%) 8-14 YRS = 31 (30%) OVR 14 YRS = 33 (32%)

EDUCATION LEVEL .....
H/S = 45 (43%) GED = 9 (9%) NO H/S = 1 (1%)
CR BA/BS = 36 (35%) B/S = 5 (5%) CR MA/MS = 1 (1%)
M/S OR HIGHER = 0 (0%)

CIVILIAN SERIES TOTALS .....
4749 = 35 5306 = 23 5301 = 11 2606 = 3 0802 = 2 3806 = 2
0830 = 1 3359 = 1 4742 = 1

DIVISION/DISTRICT TOTALS .....
DPW = 15 KCD = 6 ENG = 3 DSS = 1 076 = 1 077 = 1
078 = 1 079 = 1 080 = 1 081 = 1 082 = 1 OTHR = 72

US ARMY CORPS OF ENGINEERS
TASK ANALYSIS

PAGE 2
DATE - 01/04/99

PROGRAM: 246 -

POPULATION - 104

TSK	DIFFICULTY	IMPORTANCE	FREQUENCY	RESULT	TASK STATEMENT
1	AVERAGE (2.3)	VERY (2.5)	SOME (1.7)	TRAIN	PERFORM BIDDABILITY,CONSTRUCTABILITY,OPERABILITY(BCO)
2	AVERAGE (2.1)	VERY (2.7)	SOME (2.0)	TRAIN	INSPECT/VERIFY COMPONENTS ARE INSTALLED PER DESIGN
3	AVERAGE (2.2)	VERY (2.7)	SOME (1.9)	TRAIN	ENSURE COMPONENTS MEET REQUIREMENTS OF CEGS-15950
4	AVERAGE (2.1)	VERY (2.8)	SOME (2.1)	TRAIN	TEST CONTROL SYS OP TO VERIFY SEQUENCE OF OPERATION
5	AVERAGE (2.4)	VERY (2.8)	SOME (2.1)	TRAIN	ENSURE CONTR OP PARAMETERS,PB,TR,SP CORRECT FOR APPLR
6	AVERAGE (1.8)	VERY (2.7)	SOME (2.0)	TRAIN	ENSURE ALL POSTED INSTRUCTIONS ARE POSTED/ACCURATE
7	AVERAGE (2.0)	VERY (2.7)	OFTEN (2.5)	TRAIN	INTERPRET CONTROL PANEL DISPLAYS, GAGES & SWITCHES
8	AVERAGE (2.0)	VERY (2.5)	SOME (2.1)	TRAIN	OPERATE STANDARD DIGITAL CONTROLLER IN MANUAL MODE
9	AVERAGE (2.1)	VERY (2.5)	SOME (2.0)	TRAIN	OPERATE STANDARD DIGITAL CONTROLLER IN SELF-TUNE MODE
10	AVERAGE (2.0)	VERY (2.6)	SOME (2.2)	TRAIN	OPERATE STANDARD DIGITAL CONTROLLER IN AUTOMATIC MODE
11	AVERAGE (2.2)	VERY (2.7)	SOME (2.0)	TRAIN	4-STEP PROCESS/DETERMINE IF CONTROLLER IS FUNCTIONING
12	VERY (2.5)	VERY (2.7)	SOME (1.9)	TRAIN	CALC OPERATING PARAMETERS/ACHIEVE PROPER SYS PERF
13	AVERAGE (2.4)	VERY (2.8)	SOME (2.0)	TRAIN	ADJUST/TUNE DIGITAL CONTROLLER PARAMETERS/SYS PERF
14	AVERAGE (2.2)	VERY (2.7)	SOME (2.1)	TRAIN	ADJ POSITIONERS,SWITCHES,SEQUENCERS,ACTUATORS/PERF
15	AVERAGE (1.9)	VERY (2.6)	SOME (1.9)	TRAIN	UPDATE POSTED INSTRUCTIONS/REFLECT CURRENT OP COND
16	AVERAGE (1.9)	VERY (2.8)	SOME (2.2)	TRAIN	USE MULTIMETER/MEASURE SENSOR/TRANSMITTER OUTPUT SIG
17	AVERAGE (2.2)	VERY (2.6)	SOME (1.8)	TRAIN	USE RESISTANCE TEMP DEVICE(RTD)/CALIBRATE TST
18	AVERAGE (1.9)	VERY (2.7)	SOME (2.2)	TRAIN	USE MULTIMETER TO MEASURE CONTROLLER OUTPUT SIGNAL
19	AVERAGE (2.3)	VERY (2.6)	SOME (1.8)	TRAIN	USE 4-20 MILLIAMP SIG GEN/ADJUST DEVICES/ACTUATE RANG
20	AVERAGE (2.2)	VERY (2.7)	SOME (2.0)	TRAIN	ANALYZE VOLTAGE MEASUREMENTS TO DIAGNOSE CONTROL PROB
21	AVERAGE (1.9)	VERY (2.7)	SOME (2.2)	TRAIN	REPLACE CONTROL COMPONENTS
22	AVERAGE (1.9)	AVERAGE (2.3)	SOME (1.9)	POSSIBLE	UPDATE TIME CLOCK PROG/REFLECT CHANGES IN OP SCH
23	AVERAGE (1.6)	AVERAGE (2.3)	SOME (1.8)	POSSIBLE	REPLACE TIME CLOCK BACK-UP BATTERY
24	AVERAGE (2.1)	VERY (2.7)	SOME (2.3)	TRAIN	SELECT REPLACEMENT PARTS TO MEET REQMTS/SPECS

Task Analysis / Objective Analysis Worksheet

Proposed Training Title: HVAC Operations and Maintenance

Duty No: 1 **Duty: Verifying that standard HVAC control systems operate properly.**

Task No: 1.004 **Date: 1 November 2003** **Sequence No: 4**

Task Statement:
Test control system operation to verify that the sequence of operation is consistent with the design.

Elements: List all the elements or steps required for task performance, if needed:

OBJECTIVE ANALYSIS:

Action: (one observable performance/behavior; one VERB)

Test sequence of operation for consistency with ladder diagram.

Conditions: (actual conditions under which tasks/action will occur. Include tools, procedures, materials, aids, or facilities used to perform the task.)

Using the control diagram.

Standard: (standard for satisfactory task performance—How often? How well? How many? How much?)

Without error.

Test Items:

10. A control system ladder diagram shows which of the following:
    a. All system components
    b. All equipment operating setpoints
    c. Control logic and relationship between the system electrical components
    d. How to get control hardware in ceilings and other inaccessible locations

CEHR-P Form 832
1 Dec 03

SAMPLE

SCHEDULE OF INSTRUCTION

COURSE TITLE: CONSTRUCTION CONTRACT ADMINISTRATION **LOCATION:**

DATES:

GROUP:

CONFERENCE ROOM:

Day	Hours From To	Subject	Reference	Instructor
MON				

FY___

INSTRUCTOR'S LESSON PLAN

COURSE: EST. FOR CONSTR. MODS

COURSE CONTROL NO: #180

SUBJECT: TYPES AND FORMATS

INSTRUCTOR: Tom Jones

TIME OF LESSON: MONDAY (1400-1500 HOURS)

DEVELOPER: Tom Jones

TIME PERIOD (TOTAL): 1 HOUR

TYPE OF LESSON: LECTURE

TRAINING AIDS: PowerPoint Presentation (attached)

OBJECTIVES: SEE BELOW

INSTRUCTOR REFERENCES: STUDENT MANUAL (CHAPTER 5)

STUDENT REFERENCES AND HOMEWORK:

PROPONENT APPROVAL: _____ **DATE:** _____
CEHR-P APPROVAL: _____ **DATE:** _____

TIME	POINTS/ AID CUES	LESSON OUTLINE
		OBJECTIVES:
		UPON COMPLETION OF THIS SECTION,
		THE STUDENT WILL BE ABLE TO:
	Slide 1	Begin presentation.

TIME	KEY POINTS/ AID CUES	LESSON OUTLINE

TOPICS USED FOR DISCUSSION:

NOTE:

QUESTIONS AND COMMENTS

Note to Lesson Plan Developer: Be sure you have specific directions in the Lesson Plan so that instructors can understand and use the lesson plan without difficulty. If you attach your PowerPoint slides to the lesson plan cover, be sure that you have comprehensive notes to explain all slides used as well as information about what to do for the entirety of the time covered by the lesson plan.

DO NOT BEND, FOLD, STAPLE OR MUTILATE

PROSPECT TEST ANSWER SHEET

US Army Corps of Engineers

USE A NO. 2 PENCIL ONLY

Correct Mark ●

Incorrect Marks ✓ ✗ ◒ •

The Professional Development Support Center has the responsibility for developing effective training to meet Corps of Engineers needs. In order to accomplish this mission, an analysis of the course test data will be made to determine if the course materials do what they were designed to do.

COURSE CONTROL NO. _____

SESSION NO. _____ (If Exportable, Leave Blank)

DATE _____

NAME: _____ _____
LAST FIRST

TYPE OF TEST
PRETEST ○
POSTTEST ○

SERIES

0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

1 A B C D	26 A B C D	51 A B C D	76 A B C D	101 A B C D
2 A B C D	27 A B C D	52 A B C D	77 A B C D	102 A B C D
3 A B C D	28 A B C D	53 A B C D	78 A B C D	103 A B C D
4 A B C D	29 A B C D	54 A B C D	79 A B C D	104 A B C D
5 A B C D	30 A B C D	55 A B C D	80 A B C D	105 A B C D
6 A B C D	31 A B C D	56 A B C D	81 A B C D	106 A B C D
7 A B C D	32 A B C D	57 A B C D	82 A B C D	107 A B C D
8 A B C D	33 A B C D	58 A B C D	83 A B C D	108 A B C D
9 A B C D	34 A B C D	59 A B C D	84 A B C D	109 A B C D
10 A B C D	35 A B C D	60 A B C D	85 A B C D	110 A B C D
11 A B C D	36 A B C D	61 A B C D	86 A B C D	111 A B C D
12 A B C D	37 A B C D	62 A B C D	87 A B C D	112 A B C D
13 A B C D	38 A B C D	63 A B C D	88 A B C D	113 A B C D
14 A B C D	39 A B C D	64 A B C D	89 A B C D	114 A B C D
15 A B C D	40 A B C D	65 A B C D	90 A B C D	115 A B C D
16 A B C D	41 A B C D	66 A B C D	91 A B C D	116 A B C D
17 A B C D	42 A B C D	67 A B C D	92 A B C D	117 A B C D
18 A B C D	43 A B C D	68 A B C D	93 A B C D	118 A B C D
19 A B C D	44 A B C D	69 A B C D	94 A B C D	119 A B C D
20 A B C D	45 A B C D	70 A B C D	95 A B C D	120 A B C D
21 A B C D	46 A B C D	71 A B C D	96 A B C D	121 A B C D
22 A B C D	47 A B C D	72 A B C D	97 A B C D	122 A B C D
23 A B C D	48 A B C D	73 A B C D	98 A B C D	123 A B C D
24 A B C D	49 A B C D	74 A B C D	99 A B C D	124 A B C D
25 A B C D	50 A B C D	75 A B C D	100 A B C D	125 A B C D

PRIVACY ACT STATEMENT

Authority: Title 5, United States Code, Section 301

Purpose: To promote valid instructional programs by assuring students achieve the course objectives.

Routine Use: To provide data to be used in assessing the effectiveness of training programs.

Disclosures: Access to data will be limited to authorized training and supervisory personnel.

CEHR-P FORM 911
01 NOV 98

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PROSPECT CLASSROOM COURSE EVALUATION

US Army Corps of Engineers

Introduction

This evaluation instrument is designed to help you identify needed course improvements. Your input will be used to upgrade this course. Please answer all questions based on your personal experience and observations.

PART I

Using a Number 2 (soft) lead pencil, print your name, pay grade, job series, course #, and session # in the blocks below. Completely blacken the circle indicating your response. If you wish to change a response, erase thoroughly.

Correct Mark: ●

Incorrect Marks: ✓ ✗ ◒ ⊙

1. **NAME:**
   (optional)

Last _____ First _____

2. **CLASSIFICATION**

OFFICER	WARRANT OFFICER	ENLISTED	WAGE	GS	GM
○	○	○	○	○	○

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

3. **JOB SERIES**

0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

4.

CORPS ○

NON-CORPS ○

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CEHR-P FORM 924
01 NOV 98

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PART II

Darken only one response circle for each statement. If you feel the statement is NOT APPLICABLE or you are not able to give a knowledgeable response, simply leave the item blank. If you select number 1 or 2, explain the problem and suggest action for a resolution on the last page.

		STRONGLY AGREE			STRONGLY DISAGREE		N/A
1. INSTRUCTORS	a. Were well organized	5	4	3	2	1	○
	b. Were well versed in their subject matter	5	4	3	2	1	○
	c. Performed a review after each subject	5	4	3	2	1	○
	d. Encouraged student participation	5	4	3	2	1	○
	e. Demonstrated effective platform skills	5	4	3	2	1	○
2. LEARNING OBJECTIVES	a. Were identified for each subject	5	4	3	2	1	○
	b. Were job related	5	4	3	2	1	○
	c. Were thoroughly covered	5	4	3	2	1	○
3. COURSE CONTENT	a. Was presented in a logical sequence	5	4	3	2	1	○
	b. Subjects were job related	5	4	3	2	1	○
	c. Course was a reasonable length	5	4	3	2	1	○
4. COURSE MANUAL	a. Was well organized	5	4	3	2	1	○
	b. Was legible	5	4	3	2	1	○
	c. Was used during instruction	5	4	3	2	1	○
	d. Will be used as a reference on the job	5	4	3	2	1	○
5. VISUAL AIDS	a. Were relevant to learning objectives	5	4	3	2	1	○
	b. Enhanced the instruction	5	4	3	2	1	○
	c. Were good quality (readable/accurate)	5	4	3	2	1	○
6. EXAMS	a. Test items were related to learning objectives	5	4	3	2	1	○
	b. Test items were easily understood	5	4	3	2	1	○
7. HANDOUTS	a. Were relevant to learning objectives	5	4	3	2	1	○
	b. Were explained and used during instruction	5	4	3	2	1	○
8. CASE STUDIES	a. Case studies/exercises supported objectives	5	4	3	2	1	○
	b. Case studies/exercises were understood	5	4	3	2	1	○
9. OVERALL REACTION	a. Course expectations were met	5	4	3	2	1	○
	b. Would recommend course to others	5	4	3	2	1	○
	c. Contributed to my knowledge and skills	5	4	3	2	1	○

COURSE CONTROL NUMBER _____

SESSION NUMBER _____

NAME: (optional)

_____
Last

_____
First

PART III

Write your narrative comments below. Give specific suggestions for improvement to this course. Your pertinent comments will be reviewed by the proponent, instructors, and the Professional Development Support Center in Huntsville, AL. Thank you for your time and attention to detail.

1. What subject(s) should be improved or added to enhance your job performance?

_____

_____

_____

2. What subject(s) should be deleted or de-emphasized?

_____

_____

_____

3. What subject(s) was most beneficial?

_____

_____

_____

4. GENERAL COMMENTS:

a. Instructors _____

_____

_____

_____

_____

_____

b. Classroom/Lodging _____

_____

_____

See reverse for additional space

COMMENTS (cont'd)

EVALUATION OF PROPONENT SPONSORED ENGINEER CORPS TRAINING (PROSPECT) COURSE SESSION

1. Course Title:	2. Control Number:	3. Session Number:
4. Course Location:	5. Course Dates:	6. Number of Attendees:
7. Evaluator - Name, Duty Title, Organization:		8. Hours Observed:
9. Course Proponent - Name, Duty Title, Organization:		10. Overall Course Rating: I A G O

RATING	I - INADEQUATE	A - ADEQUATE	G - GOOD	O - OUTSTANDING

11. MAJOR ITEMS EVALUATED	RATING				SEE NOTES	MAJOR ITEMS EVALUATED	RATING				SEE NOTES
a. Course Preparation	I	A	G	O		j. Aids and Equipment	I	A	G	O	
b. Introduction	I	A	G	O		k. Student/Instructor Ratio	I	A	G	O	
c. Objectives	I	A	G	O		l. Instructor Qualities	I	A	G	O	
d. Lesson Plans	I	A	G	O		m. Presentation/Content	I	A	G	O	
e. Schedule of Instruction	I	A	G	O		n. Target Audience	I	A	G	O	
f. Course Manual	I	A	G	O		o. Student Interest and Participation	I	A	G	O	
g. Student Handouts	I	A	G	O		p. Administration	I	A	G	O	
h. Exams/Evaluations	I	A	G	O		q. Room and Facilities	I	A	G	O	
I. Practical Exercises	I	A	G	O							

NOTES: Number notes to correspond with those entered in the "SEE NOTES" column above. (Standard Abbreviations: N/O - Not Observed, N/A - Not Applicable, N/R - Not Rated).

EVALUATION OF PROPONENT SPONSORED ENGINEER CORPS TRAINING (PROSPECT) COURSE SESSION

Professional Development Support Center PDSC) Recommendations:

Course Proponent Comments and/or Recommendations:

Actions Accomplished:

Signature of Evaluator:	Date:	Signature of Course Proponent:	Date:
			Page 2 of 2

Evaluation of PROSPECT Instructor/Facilitator

Instructor/Facilitator:	
Proponent	
Course Title and Number:	
Course Location:	
Evaluator:	Date:

	Agree	Disagree
1. Prepared classroom, equipment, and materials prior to start of class.	_____	_____
2. Appeared self-confident.		_____ _____
3. Properly used grammar, voice, eye contact, and mannerisms.	_____	_____
4. Was well organized.		_____ _____
5. Used lesson plan properly.		_____ _____
6. Constructively used allotted time.		_____ _____
7. Provided introduction and stated objectives.		
8. Material was presented in a logical, easy-to-understand manner and appeared to be current and at the proper difficulty level.	_____	_____
9. Used proper questioning techniques.		_____ _____
10. Questions were thought-provoking, reinforced learning, and were easily understood.		_____ _____
11. Properly used appropriate training aids.	_____	_____
12. Encouraged student participation.		_____ _____
13. Motivated students and developed student/instructor rapport.	_____	_____
14. Summarized main points after each session.	_____	_____
15. Exhibited a professional behavior and attitude.	_____	_____

COMMENTS: (Key comments to items above. Furnish comment for all items marked disagree.)

CEHR-P Form 748
1 Dec 03

Print

SAMPLE

1/8/2004

Pre-Test/Post-Test Analysis Report

Course No: 64	Title: INSTRUCTIONAL METHODS
FY: 2004	Location: Huntsville , AL
Session: 1	Dates: 11/3/2003 - 11/7/2003
Pre-Test Population: 19	Post-Test Population: 19

	---- Correct ----	Other Responses			- No Answer -
1 PreTest	A = 0 (0%)	B = 0 (0%)	C = 0 (0%)	D = 0 (0%)	19 (100%)
7 PostTest	C = 16 (84%)	A = 1 (5%)	B = 0 (0%)	D = 2 (11%)	0 (0%)
2 PreTest	C = 2 (11%)	A = 0 (0%)	B = 1 (5%)	D = 0 (0%)	16 (84%)
3 PostTest	B = 19 (100%)	A = 0 (0%)	C = 0 (0%)	D = 0 (0%)	0 (0%)
3 PreTest	A = 0 (0%)	B = 1 (5%)	C = 0 (0%)	D = 0 (0%)	18 (95%)
11 PostTest	C = 17 (89%)	A = 0 (0%)	B = 0 (0%)	D = 2 (11%)	0 (0%)
4 PreTest	B = 0 (0%)	A = 1 (5%)	C = 0 (0%)	D = 1 (5%)	17 (89%)
1 PostTest	C = 17 (89%)	A = 1 (5%)	B = 1 (5%)	D = 0 (0%)	0 (0%)
5 PreTest	D = 8 (42%)	A = 0 (0%)	B = 0 (0%)	C = 0 (0%)	10 (53%)
4 PostTest	D = 19 (100%)	A = 0 (0%)	B = 0 (0%)	C = 0 (0%)	0 (0%)
6 PreTest	B = 9 (47%)	A = 0 (0%)	C = 0 (0%)	D = 0 (0%)	9 (47%)
6 PostTest	A = 19 (100%)	B = 0 (0%)	C = 0 (0%)	D = 0 (0%)	0 (0%)
7 PreTest	D = 0 (0%)	A = 0 (0%)	B = 0 (0%)	C = 1 (5%)	18 (95%)
8 PostTest	B = 18 (95%)	A = 1 (5%)	C = 0 (0%)	D = 0 (0%)	0 (0%)
8 PreTest	D = 2 (11%)	A = 0 (0%)	B = 2 (11%)	C = 0 (0%)	15 (79%)
9 PostTest	B = 14 (74%)	A = 4 (21%)	C = 0 (0%)	D = 1 (5%)	0 (0%)
9 PreTest	A = 9 (47%)	B = 0 (0%)	C = 1 (5%)	D = 0 (0%)	8 (42%)
13 PostTest	D = 18 (95%)	A = 0 (0%)	B = 1 (5%)	C = 0 (0%)	0 (0%)
10 PreTest	A = 8 (42%)	B = 0 (0%)	C = 1 (5%)	D = 0 (0%)	10 (53%)
2 PostTest	C = 14 (74%)	A = 1 (5%)	B = 2 (11%)	D = 2 (11%)	0 (0%)
11 PreTest	B = 1 (5%)	A = 0 (0%)	C = 1 (5%)	D = 0 (0%)	17 (89%)
5 PostTest	D = 17 (89%)	A = 1 (5%)	B = 1 (5%)	C = 0 (0%)	0 (0%)
12 PreTest	C = 2 (11%)	A = 0 (0%)	B = 0 (0%)	D = 0 (0%)	17 (89%)
12 PostTest	B = 10 (53%)	A = 0 (0%)	C = 0 (0%)	D = 8 (42%)	1 (5%)

U.S. Army Corps of Engineers
Professional Development Support Center
Classroom Course Evaluation

Course: 64 2004 1 Dates: 3-Nov-2003 7-Nov-2003

Title: INSTRUCTIONAL METHODS Location: Huntsville, AL

	Sub-Element Average	Element Average
1. Instructors		
A. Were well organized	4.7	
B. Were well versed in their subject matter	4.7	
C. Performed a review after each subject	4.6	
D. Encourgaged student participation	4.7	
E. Demonstrated effective platform skills	4.5	4.7
2. Learning Objectives		
A. Were identified for each subject	4.7	
B. Were job related	4.2	
C. Were thoroughly covered	4.4	4.5
3. Course Content		
A. Was presented in a logical sequence	4.1	
B. Subjects were job related	3.9	
C. Course was a reasonable length	3.9	4.0
4. Course Manual		
A. Was well organized	4.1	
B. Was legible	4.6	
C. Was used during instruction	4.7	
D. Will be used as a reference on the job	3.8	4.3
5. Visual Aids		
A. Were relevant to learning objectives	4.5	
B. Enhanced the instruction	4.4	
C. Were good quality (readable/accurate)	4.4	4.4
6. Exams		
A. Test items were related to learning objectives	4.7	
B. Test items were easily understood.	4.4	4.6
7. Handouts		
A. Were relevant to learning objectives	4.5	
B. Were explained and used during instruction	4.5	4.5
8. Case Studies		
A. Case studies/exercises supported objectives	4.4	
B. Case studies/exercises were understood	4.3	4.3
9. Overall Reaction		
A. Course expections were met	4.2	
B. Would recommend course to others	4.2	
C. Contributed to my knowledge and skills	4.4	4.2

SAMPLE

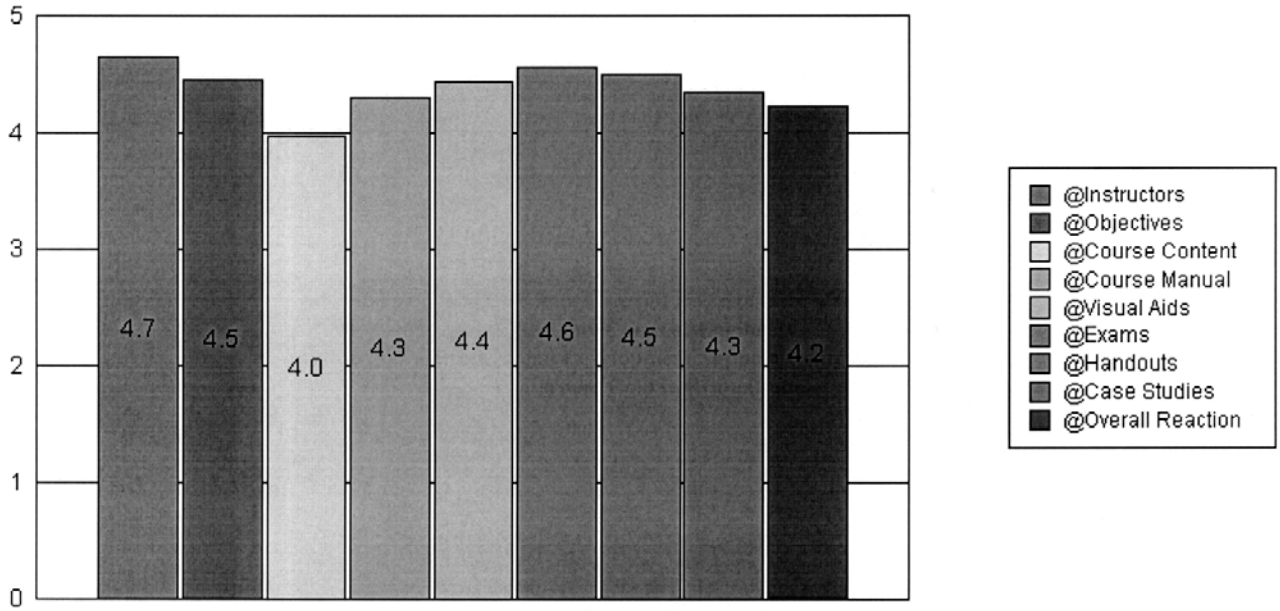
U.S. Army Corps of Engineers
Professional Development Support Center
Classroom Course Evaluation

Course: 64 2004 1 Dates: 3-Nov-2003 7-Nov-2003

Title: INSTRUCTIONAL METHODS Location: Huntsville, AL

Course Elements

Rating below 3.7 indicates need for improvement



SAMPLE

		GS07	GS09	GS11	GS12	GS13	Total
	0	0	0	1	0	0	1
0025	0	0	2	1	0	0	3
0028	0	0	0	0	1	0	1
0110	0	0	0	0	0	1	1
0303	0	1	0	0	0	0	1
0401	0	0	0	0	1	1	2
0560	0	0	0	0	1	0	1
0690	0	0	0	0	1	0	1
0808	0	0	0	0	1	0	1
0810	2	0	0	0	0	1	3
0819	0	0	0	0	1	0	1
0855	1	0	0	0	0	0	1
1302	0	0	0	0	1	0	1
1410	0	0	0	0	0	1	1
Total	3	1	2	2	7	4	19

COESAT JOB AID

	Required Tasks and Documentation for PROSPECT TRAINING	PROSPECT Courses	Conf Workshop Seminar	Personnel Involved	Average Time Required
Analysis	Identify training needs (ENG Form 4713R)	X	X	AO/S	1d
	Describe Target Population (CEHR-P Form 829)	X	X	AO/CM/S	4 h
	List Duties and Tasks (CEHR-P Form 830)	X		AO/CM/S	3 d
	Survey Target Population (as needed and if time permits-includes transmittal letter, task inventory, etc.) *or* use other method for task analysis as described in the COESAT Handbook.	X		CM	5 d
	Select Tasks for Training (Task Analysis Report)	X		AO/CM/S	1 d
	Analyze Selected Tasks (CEHR-P Form 832, Task Analysis / Objective Analysis Worksheet)	X		AO/CM/S	3 d
	Verify Training Need (CEHR-P Form 4712, Verification of Training Needs FY _)	X	X	AO/CM	2 h
Design	Develop Objectives (CEHR-P Form 832, Task Analysis / Objective Analysis Worksheet)	X	X (obj only)	AO/CM/S	2 d
	Design Test Items (CEHR-P 832, Task Analysis / Objective Analysis Worksheet)	X		AO/CM/S	2 d
	Develop Schedule of Instruction (SOI) (CEHR-P Form 676 or equivalent)	X	X	CM/AO/S	1 d
Development	Develop Lesson Plans (CEHR-P 675 or equivalent)	X		CM/AO/S	varies
	Develop Support Materials (Student Manual, PowerPoint Presentation, Handouts, CD-ROM, Web-Based Instruction, Computer-Based Instruction, Videotapes, etc.)	X	X	CM/AO/S	varies
	Validate Materials	X		CM/AO/S	varies
Implementation	Administer Pretest	X		S	1 h
	Conduct Training	X	X	S	varies
	Administer Posttest	X		S	1 h
	Administer End-of-Course Evaluations (CEHR-P Forms 913 or 924)	X	X	S	.75 h
Evaluation	Analyze Pretest/Posttest (Computer-Generated Report)	X		CM/AO/S	.5 h
	Evaluate End-of-Course Evaluations (Computer-Generated Report)	X	X	CM/AO/S	.5 h
	Evaluate Course (CEHR-P Form 744)	X	X	CM/AO/S	.5 h
	Evaluate Instructors (CEHR-P Form 748)	X	X	CM/AO/S	.5 h
	Analyze Post-Training Surveys (CEHR-P Forms 979 and 980 or equivalent)	X		CM/AO/S	.5 h

AO-Action Officer
X-Required
S-SME
CM-Course Manager
d-Days
h-Hours

AO-Action Officer
X-Required
S-SME
CM-Course Manager
d-Days
h-Hours

Verb List

Standardized Verbs

Standardized verbs ---

a. Promote clarity.

b. Prevent duplication.

c. Promote application of sound training principles. Many words appear to be action verbs, but don't actually refer to an observable action. Examples of such verbs are *know*, *understand*, or *appreciate*. By using standard verbs, you will avoid these words and produce sound, observable tasks.

STANDARD VERBS

Note: Use verbs marked with an asterisk (*) with caution. For a fuller explanation, see VERBS TO USE WITH CAUTION.

***Achieve** To attain a desired end.

Adjust
1. To correct the actions of a distant unit.
   Example: Adjust Indirect Fire.
2. To bring parts of instruments into a truer or more effective relative position or setting.

***Administer** To manage or supervise the execution, use, or conduct of a relatively structured activity.

Advise To counsel or recommend.

Alert To make aware of.

Align To place parts in the proper position to one another.

Allocate To apportion for a specific purpose or to particular persons or things.

Ambush
1. To attack.
2. To conduct a surprise attack.

***Analyze** To separate a whole into its constituents with a view to its examination and interpretation.

Continued on next page

Verb List, Continued

Annotate To make or furnish critical or explanatory notes or comments.

***Apply**
1. To put on.
   Example: Apply Base Coat of Paint.
2. To use practically.
3. To concentrate.

Approve To give formal or official sanction.

Assemble
1. To fit the parts of an item together.
   Note: Usually said of a machine.
2. To bring together.
   Note: Usually said of an organization or group.

***Assess**
1. To determine the importance, size, or value of.
2. To fix the amount of.

Assign
1. To give responsibility.
   Note: For the execution of a task.
2. To place under the control of.
   Example: Assign employees to organizations.

Assist To give aid by participating in a task.

Authenticate
1. To verify identity in response to a challenge.
   Note: See Challenge.
2. To verify the authenticity of.

Breach
1. To break through.
2. To secure passage through.
   Note: Usually said of an obstacle.

Brief To give information or final precise instructions.

Calculate To ascertain by computation.

Camouflage Concealing of personnel, equipment, and facilities.

Challenge To order to prove identity.

Change To make different in some particular.

Check To inspect for satisfactory condition, accuracy, safety, or performance.

Continued on next page

Verb List, Continued

Clear
1. To make secure by searching and eliminating enemy resistance.
   Example: Clear a Building.
2. To make safe by following a prescribed procedure for unloading.
   Example: Clear an M16A2 Rifle.
3. To render operable by overcoming a temporary condition.
   Example: Clear a Stoppage in a M60 Machine Gun.

Close
1. To arrive at a designated position.
2. To move in such a manner as to present passage through.

Collate To bring parts together to form a whole.

Collect
1. To gather or exact from a number of persons or sources.
   Note: Usually said of information.
2. To bring together in a group.

Combine To join two or more things such as units, or chemical substances into one.

Communicate To convey knowledge of or information about; to make known.

***Compare** To examine the character or qualities of, especially in order to discover resemblances or differences.
Example: Compare Courses of Action.

Complete To bring to an end and especially into a perfected state.

Comply To act in accordance with orders, regulations, policy, etc.

Compute To determine, especially by mathematical means.

***Conduct** To direct or control, lead, or guide.

Confirm To validate.

Connect
1. To join.
2. To fasten together.

Consolidate
1. To organize or reorganize, bringing separate parts together into one whole.
2. To secure or complete an action.
   Example: Consolidate the Objective.

Construct To build.

Continued on next page

Verb List, Continued

Control	1. To exercise restraining or direct influence over. 2. To regulate. 3. To dominate.
Coordinate	To bring into a common action, movement, or condition.
Correct	To alter or adjust so as to bring to some standard or required condition.
Correlate	To present or set forth so as to show relationship.
***Counsel**	Advise or provide guidance.
Counter	To act in opposition to; nullify.
Cover	To afford protection or security to.
Cross	To pass over or through.
Cross-check	To check from various angles or sources to determine validity or accuracy.
Debrief	To obtain an oral report on an action or mission immediately afterwards.
Decontaminate	To cleanse or remove chemical or radiological contamination.
Defend	To ward off an actual or threatened action.
***Define**	1. To determine the limits and nature. 2. To state the meaning of.
Deliver	To send to an intended destination.
***Demonstrate**	1. To show by reasoning. 2. To show the operation or working of. 3. To explain by using examples, experiments, or action.
Deploy	1. To spread out, use, or arrange, especially tactically. 2. To position for use.
Designate	To indicate and set apart for a specific purpose, office, or duty.
Destroy	1. To render unusable. 2. To render ineffective.

Continued on next page

Verb List, Continued

Detect	To discover.
Determine	1. To settle or decide by choice of alternatives or possibilities. 2. To fix precisely.
Develop	To set forth or make clear by degrees or in detail.
Direct	1. To regulate the activities or course by acting through subordinate leaders. 2. To control through suggestions and guidelines.
Disassemble	To take apart, usually for the purposes of cleaning or repair.
Disconnect	To sever the connection between.
Disengage	To release or break contact with.
Dismantle	To render inoperable by taking apart. ***Note:*** See Disassemble.
Dispatch	To send away with promptness or speed, especially on official business.
Displace	To leave one position and occupy another.
Disseminate	To disperse throughout. ***Note:*** Usually refers to orders, information, and similar matters.
Distribute	To give out or deliver, especially to members of a group.
Draft	To draw the preliminary sketch, version, or plan of.
***Effect**	To cause the desired result or outcome. ***Note:*** See Achieve.
Emplace	To put in a prepared position.
Employ	To make use of.
Encrypt	Encipher, encode.
Enforce	To see that the provisions (of an order or regulation) are carried out effectively.
Engage	To intermesh or interlock. ***Note:*** Usually refers to machinery.

Continued on next page

Verb List, Continued

***Ensure**	To make certain. To guarantee.
Enter	To come in.
Erect	To build or set up.
Establish	1. To bring into existence. 2. To introduce as a permanent entity or procedure.
Evacuate	To move from an area.
Evade	To avoid.
***Evaluate**	To determine the significance or worth of, usually by careful appraisal and study.
Exchange	To part with for a substitute.
Extend	To increase the scope, meaning, or application of.
Extract	To select and copy out or cite.
Finalize	To put in final or finished form: to give final approval to.
Fire	To discharge a weapon.
Format	To produce a document or electronic report in a specified form or style.
Formulate	To put into a systematized statement or expression.
Forward	To send onward.
Fuel	To provide with fuel.
Ground	To connect electrically with a ground.
Guard	1. To protect by physical security means. 2. To prevent from escaping by physical security means.
Hover	To hold a flying aircraft relatively motionless.

Continued on next page

Verb List, Continued

***Identify**	1. To determine critical or necessary conditions or other factors. 2. To determine the specific model of an item. 3. To ascertain the origin, nature, or definitive characteristics of.
Implement	To give practical effect to and ensure of actual fulfillment by concrete measures.
Infiltrate	To move by small groups, usually clandestinely.
Inform	To make known.
Input	To provide information to or to enter information into a system.
***Inspect**	To examine officially.
Install	To put in an indicated place, condition, or status.
Integrate	To form, coordinate, or blend into a functioning or unified whole.
Interpret	To present or delineate the meaning of. ***Example:*** Interpreting for Russian and English speakers.
Issue	To give out.
Land	To bring an aircraft to earth.
Launch	To send an aircraft or missile into the air. ***Note:*** See Take Off.
Lead	1. To go at the head. 2. To exercise direct, low-level control.
Level	1. To make even or uniform. 2. To apportion equally.
Load	1. To insert ammunition into a weapon or launcher. 2. To place in or on a means of conveyance.
Locate	To determine or set the position of.
Log	To enter details of or about an event in a log.

Continued on next page

Verb List, Continued

Maintain	To preserve, fix, or keep in good repair.
Make	To create or cause to happen.
***Manage**	1. To handle or direct with a degree of skill or specialized knowledge 2. To exercise executive, administrative, and supervisory direction.
Modify	To make minor changes in/to.
***Monitor**	To watch, observe, or check, especially for a special purpose.
Motivate	To provide with an incentive.
Move	To proceed from one point to another.
***Name**	1. To designate or mention by name. 2. To appoint. 3. To identify by giving the right name. 4. To give a name.
Navigate	Determine and follow a course.
Notify	To inform, to warn, to make known, or to make notice of.
Observe	To watch carefully.
Obtain	To gain or attain. ***Note:*** Usually by planned action or effort.
Occupy	To reside or control.
Open	1. To make ready for business. 2. To make available for entry or passage.
Operate	1. To cause a piece of equipment to function. 2. To perform a function.
***Orchestrate**	1. To compose/arrange music. 2. To organize, manage, or arrange.
Order	To command a specific action to be executed.

Continued on next page

Verb List, Continued

Organize	To arrange by systematic planning and united support.
Orient	To point or look in a specific direction.
***Oversee**	To watch over and direct.
Pack	To place in a container for transportation or storage.
Patrol	To conduct security or offensive operations with small, specially tailored groups.
***Perform**	To carry out an action or pattern of behavior.
Place	Put in proper position or location. ***Note:*** "Position" or "locate" are usually better choices.
Plan	1. To devise or project. 2. To formulate a systematic scheme or program of action.
Plot	To mark or note on a map, chart, or graph.
Police	1. To provide protective or police services. 2. To make clean and put in order.
Position	To put in place; to set.
Post	1. To make transfer entries. 2. To position at a certain site.
Predict	Foretell on the basis of observation, experience, or scientific reason.
Prepare	1. To put together. 2. To combine elements and produce a product. ***Example:*** Prepare a Meal. 3. To make ready. 4. To make other persons or things ready.
Prevent	To keep from occurring or recurring. ***Example:*** Prevent Cold Weather Injuries.
***Prioritize**	To put in order or rank. ***Note:*** Especially for the purpose of allocating resources.

Continued on next page

Verb List, Continued

Process	To initiate a series of actions or operations leading to a particular end. ***Example:*** Process a Request for Transfer.
Produce	To develop or create.
Project	To plan, calculate, or estimate for the future.
Protect	To shield from destruction; safeguard.
Provide	To supply or make available.
Publish	To produce for distribution.
Range	To determine the distance.
Reach	To arrive at a location.
React	To respond, usually to an emergency situation with a limited choice of actions.
Read	To examine carefully so as to understand.
Realign	To reorganize or make new groupings.
Reassess	To re-determine the extent or value.
Recall	To bring back to another location.
Receive	To acquire from someone else. ***Example:*** Receive patients.
***Recognize**	To determine the category of an item. ***Learning Objective Example:*** Recognize certain types of vehicles.
Recommend	To endorse as worthy, fit, competent, exceptional, etc.
Reconnoiter	To obtain information by visual observation or other methods. ***Note:*** Reconnoiter usually implies a physical movement to the area to be observed.
Record	1. To set down as a means of preserving information. 2. To document. 3. To mechanically or electronically save information.
Recover	To extract damaged or disabled equipment and move to a location for repair.

Continued on next page

Verb List, Continued

Redistribute To reallocate, usually in response to uneven consumption or usage.

Reduce
1. To diminish in size, amount, extent, or number.
2. To render operable by following a prescribed procedure to eliminate a malfunction.
3. To render ineffective by partially dismantling.

Reestablish To establish again, usually in response to a combat loss or damage.
Example: Reestablish communications.

Reexamine To examine again.

Release
1. To let go.
2. To set free from configuration or condition.

Relieve
1. To replace.
2. To reduce or eliminate pressure on.

Relocate Establish or lay out in a new place.

Remove
1. To take away or displace.
2. To dismiss.
3. To eliminate, kill, or destroy.

Reorganize To organize again.

Repair To restore to serviceable condition.

Replace To substitute a new or workable item or person.

Replenish To fill again.

Report
1. To present an account officially.
2. To formally or regularly carry back and repeat to another.
3. To provide information on ongoing activities.

Request
1. To ask for.
2. To ask someone to do something.

Resolve To reduce by analysis.

Restate To state again or in another way.

Continued on next page

Verb List, Continued

Resume	To begin again.
Return	To restore to a former or proper place.
***Review**	To go over for the purpose of determining correctness or currency.
Revise	To correct or improve. ***Note:*** Usually applied to a plan or document.
Rotate	To cause to turn about an axis or center.
Schedule	To appoint, assign, or designate for a fixed time.
Secure	1. To make safe. 2. To fix tightly. 3. To make immobile.
Select	To choose from among others to meet specific standards or criteria.
Send	To dispatch.
Set	To adjust a device to a desired position, to make ready for future action.
Set up	To erect or position components.
Sort	To examine and place into categories.
Splint	To support or restrict.
State	To declare or set forth; a condition.
Stockpile	To accumulate supplies for use.
Store	To stock or deposit.
Strike	To attack.
Submit	To send forward for approval.
Supervise	1. To oversee. 2. To critically watch, motivate and direct the activities of subordinates.
Support	To aid or help.
Sweep	To move through and search an area.

Continued on next page

Verb List, Continued

Take charge	To assume control or command.
Task	To assign responsibility.
Test	To examine to prove the value or ascertain the nature of something.
Track	To follow by means of marks or scent.
Train	To make proficient by instruction and practice.
Translate	To express in more comprehensible terms, or in a different language.
Transmit	To send over a communications net.
Transport	To carry from one place to another; convey.
Treat	To care for medically.
Triage	To assess patients' physical condition to determine treatment priority.
Troubleshoot	To locate the source of trouble in equipment, systems, or operations.
Tune	To put on the proper setting or frequency. ***Note:*** As a radio.
Turn	To change the direction or orientation of something.
Update	To bring up to date or make current.
Validate	To substantiate accuracy by comparison or investigation.
Verify	To confirm or establish the accuracy or truth of something.
Wear	To bear or have on the person; to carry on the person.
Zero	To set a sight to enable a firearm to shoot a target.

Verbs To Use With Caution

Use these verbs with care. Some are only variants of the verb 'Do,' and don't convey any special meaning. Their overuse results in vague "fuzzy" task statements.
Other verbs in this list are often used for a procedural step in the performance of the task. When selecting a verb for a task title:

1. Choose a verb you think is appropriate.
2. Give yourself the "why" test, i.e., ask, "Why would someone perform this task?"
3. Determine if the answer to the "why" test is truly "to perform the entire task as written" **or** "to perform a task step." Your answer will indicate ---

   a. You selected the correct verb for the task title;
   b. You need to change the task verb;
   c. You really have a task step.

Other verbs are most often used to define *enabling* objectives. For example, when teaching a student to repair an item of equipment, the instructor might require the student to LIST, NAME, or IDENTIFY the component parts of the item.

Achieve This verb implies you are going to measure the product (or quality), not the process. A common mistake is to use the verb "achieve" and then to use standards that represent steps in the task rather than the quality of the outcome.

Administer The use of this verb should be restricted to fairly mechanical or structured activities or to medical activities. It is not a synonym for 'Manage.'

Analyze One usually analyzes something in order to accomplish a real task.

Apply The use of "Apply" often leads to unobservable or immeasurable task statements.
Improper Use Example:
Apply the Principles of Leadership.

Assess Difficult to observe or measure. Usually the analyst would be better off stating what the individual has to do in order to assess something.

Check Checking is usually done as part of supervision or verification.

Compare The answer to the "why" test may indicate the "compare" statement is really a task step and not a task.

Conduct The verb 'Conduct' should be used ONLY when a more precise verb does not exist or when the use of a more precise verb would result in an unusually clumsy construction.

CAUTION: The verb "Conduct" (as well as "Perform" and other verbs that simply mean 'Do') is often used to mask a serious error ---using more than one verb in a task statement.

Continued on next page

Verbs To Use With Caution, Continued

Counsel	This has the connotation of simply providing general information. The verbs "advise" and "recommend" are usually what is really meant and indicate "action."
Define	Use of this verb often indicates an enabling objective that would be used in a classroom setting, not the task itself. ***Example Of Improper Use:*** Define the Purpose of a Front End Analysis.
Demonstrate	Like "define," "demonstrate" is usually indicative of an enabling objective. ***Example Of Improper Use:*** Demonstrate an understanding of Front End Analysis by defining the Purpose of a Front End Analysis.
Effect	Similar in meaning to "achieve" but more vague.
Ensure	Difficult to observe or measure. Usually the analyst would be better off stating what the individual or unit has to do in order to ensure something happens or doesn't happen.
Evaluate	Usually indicates a step or enabling objective.
Identify	May indicate a step or enabling objective. ***Example Of Improper Task Title:*** Identify the Parts of the M16A2 Rifle.
Inspect	Usually indicates a step or enabling objective.
Manage	Difficult to observe or measure. Usually the analyst would be better off stating what the individual has to do in order to manage something. Since management is a complex set of skills, a task that uses the verb "manage" should be closely examined. You may need to split the task into several more well-defined tasks.
Monitor	Usually indicates a step or enabling objective.
Name	Nearly always indicates an enabling objective.
Orchestrate	1. To compose/arrange music. 2. To organize, manage, or arrange.
Oversee	To watch over and direct.

Continued on next page

Verbs To Use With Caution, Continued

Perform	"Perform," like "conduct," is simply another way of saying, "do."
Prioritize	Usually indicates a step or enabling objective.
Recognize	"Recognize" may be very appropriate for a learning objective, but use caution if you use it in a task title as the resulting statement may really be a task step. ***Example***: Recognize friendly aircraft" may be a step in the task "Report enemy aircraft."
Review	Usually indicates a step or enabling objective.

VERBS TO USE WITH CAUTION FOR ENABLING LEARNING OBJECTIVES OR LEARNING ACTIVITIES:

Describe **Discuss** **Explain** **List**	**Reason:** These verbs usually indicate an enabling objective.

VERBS WITH SIMILAR DEFINITIONS

Administer, Manage	"Administer" refers to relatively structured activities, while "manage" refers to broader activities requiring great depth of knowledge and experience. A clerk may administer the organization's publications. An executive or senior officer manages procurement.
Assist, Support	**"Support"** usually indicates a collective task, while **"assist"** usually indicates an individual task. **Assist:** An assistant participates in the action with the principal actor. ***Illustration:*** The secretary assists the supervisor. Support: Implies a different kind of activity than the primary activity. ***Illustration:*** The Desktop Publishing personnel support the division.
Decide, Determine	Decide: Refers to arriving at a conclusion and to pronounce that decision. Determine: To settle or decide by choice of alternatives or possibilities and to fix precisely.
Disassemble, Dismantle	Disassemble implies taking apart for the purpose of repairing or cleaning. Dismantling implies taking apart on a relatively long-term basis to render inoperable.

Continued on next page

Verbs To Use With Caution, Continued

VERBS WITH SIMILAR DEFINITIONS, Continued

Lead, Command	"Lead" implies to go ahead, or to control the activities of a small group. "Command" is a legal status, which includes not only direction, but also disciplinary authority.
Operate, Employ	"Operate" is to turn on, control, and turn off a piece of equipment. "Employ" is to ensure that the equipment is used to further the mission of the organization.
Recognize, Identify	"Recognize" implies a less stringent standard than "identify."

VERBS NOT TO USE

Appreciate	Not measurable or observable.
Become aware of	Not measurable or observable.
Clarify	Usually indicates an enabling objective.
Consider	Rarely Observable.
Enjoy	Not measurable or observable.
Execute	Vague. Another version of 'Do.'
Know	Not measurable or observable.
Relate	Usually indicates an enabling objective.
Summarize	No action indication.
Synthesize	Not measurable or observable.
Understand	Not measurable or observable.
Use	Vague. Another version of 'Do.'
Utilize	Vague. Another version of 'Do.'

Note: This list modified from TRADOC Regulation 350-70, Appendix D, Standard Verb List.

Glossary

Section I - Abbreviations

ADDIE	Analysis, Design, Development, Implementation, Evaluation
ATMP	Army Training Management Program
CAI	Computer-aided instruction
CBI	Computer-based instruction
CBT	Computer-based training
CD-Rom	Compact-Disk Read Only Memory
CEHNC	U.S. Army Engineering and Support Center, Huntsville
CEHR-D	Human Resources Planning and Development Division, Directorate of Human Resources, HQUSACE
CEHR-P	USACE Professional Development Support Center, Huntsville
CEHR-P-TO	USACE Professional Development Support Center, Huntsville
COESAT	Corps of Engineers Systems Approach to Training
COTS	Commercial off-the-shelf
CRI	Criterion-referenced instruction
CRT	Criterion-referenced test/testing
CSI	Computer-supported instruction
DIF	Difficulty, Importance, Frequency
DL	Distance Learning
DoD	Department of Defense
ER	Engineering Regulation
FAA	Functional Area Assessment
ICH	Instructor Contact Hours
LO	Learning Objective
METL	Mission Essential Task List
MIPR	Military Interdepartmental Purchase Request
OJT	On-the-job training
PAT	Process Action Team
PE	Practical Exercise
PMP	Project Management Plan
PROSPECT	Proponent-Sponsored Engineer Corps Training
SAT	Systems Approach to Training
SGI	Small Group Instruction

Continued on next page

Glossary, Continued

Section I – Abbreviations, Continued

SME	Subject Matter Expert
TBD	To be developed/determined
TD	Training Developer or Training Development
TLO	Terminal Learning Objective
TMIS	Training Management Information System
TNET	Teletraining Network
TRADOC	Training and Doctrine Command
USACE	United States Army Corps of Engineers
VI	Visual Information
VTC	Video Teleconference
VTT	Video Teletraining
WBT	Web-based training

Glossary, Continued

Section II - Terms

Action Officer	*Action officer* refers to course proponents within their functional area of responsibility. Action officers submit recommendations to senior decision makers or Organizational Proponents who then approve or disapprove the recommendatons.
Action Verb	Verb that conveys action/behavior, e.g., *place*, *cut,* or *drive*. For training purposes, these action verbs must reflect measurable, observable, verifiable, and reliable behaviors.
Analysis	One of the five basic phases of the COESAT training development process. Analysis tells (1) if training is needed; (2) who needs the training; (3) the critical tasks students must perform; and (4) the standards, conditions, and performance measures needed to perform each task.
Answer key	A document that shows the answer to each test question.
Audit trail	A systematic documentation of decisions or actions taken.
Behavior	An observable activity or action. The performance of a skill.
Bypassing	In instruction, normally programmed, web-based, or computer-based; this techniques permits a student to omit certain portions of material because of prior knowledge.
Cognitive Learning	A category of learning concerned with knowledge and various mental activities and processes.
Computer-aided instruction (CAI)	CAI involves use of computers to aid in the delivery of instruction.
Computer-based instruction (CBT)	CBI usually refers to course materials presented or controlled by a computer, using multiple requirements for student responses as a primary means of facilitating learning.
Content Validity	Tests intended to measure the extent to which students learn the content of the instructions. The extent to which the test measures this is called content validity.

Continued on next page

Glossary, Continued

Section II – Terms, Continued

Corps of Engineers Systems Approach to Training (COESAT)	The Corps system for complying with the requirement in AR 690-400 to develop training based on needs systematically.
Course Manager	CEHR-P-TO personnel assigned responsibility to oversee/manage courses in accordance with ER 350-1-414.
Criterion	The standard by which something is measured.
Criterion-referenced test	Test to measure student's accomplishment of lesson objectives, with the criterion or standard being accomplishment of the objectives.
Cue	A word, situation, or other signal for action.
Design	The phase of COESAT that translates analysis data into a blueprint for training. The design phase tells resource requirements, training structure, learning objectives, training sequence, student evaluation requirements, and a schedule of instruction.
Design concept	Detailed description of the way objectives will be presented in an exportable course.
Development	A major phase of the COESAT process that converts the design into training materials, e.g., lesson plans, student handouts, media, etc.
Difficulty-importance-frequency model	A model sometimes used for selecting tasks for training, based on difficulty, importance, and frequency of job task performance.
Digitization	The overarching term for electronic recording of information for distribution via Internet, computer networks, computer disks, magnetic tapes, optical disks, satellite transmission, and bulletin boards.
Distance Learning (DL)	The delivery of training to students at the right place and right time through application of multiple means and technologies. DL may involve both synchronous (with instructor) and asynchronous (without student-instructor interaction). It may also involve self-paced instruction without benefit or access to an instructor.

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Glossary, Continued

Section II – Terms, Continued

Enabling Learning Objective (ELO)	A statement in behavioral terms of what is expected of the student in demonstrating mastery at the knowledge and skill level necessary for achievement of a Terminal Learning Objective (TLO) and another ELO.
Evaluation	The cornerstone of quality training. One of the five phases of COESAT. Evaluation can occur as formal as internal and external evaluations or informal feedback between the student and instructor.
Exportable training	Training to be conducted locally using visual-based exportable training materials.
Facilitator	In the exportable training program, the individual who leads training sessions.
Fidelity	The extent to which an objective or training approximates those of a task or job.
In-house course	A classroom training program course designed, developed, and taught by Corps employees who serve with the permission of their organization.
Item Analysis	The process of determining whether a test item is functioning as intended.
Interactive Multimedia Instruction (IMI)	IMI applies to a group of predominately interactive, electronically-delivered training and training support products
Job (or duty position)	A collection of unique, specific, related set of activities (tasks) performed by a unique, defined set of personnel.
Job Aid	A checklist, procedural guide, decision table, worksheet, algorithm, or other device used a san aid in performing duty position tasks.
Just-in-time training	Training provided to individuals or groups just before they will use the skills or function taught, typically used to teach perishable or infrequently used skills.
Knowledge-based test	Testing procedure that simply asks for recall or the selection of information or knowledge.
Learning Hierarchy	The relationship among objectives in which students must master some objectives before they can learn others.
Learning Object	Learning objects represent an alternative approach to content development: developers break content down into chunks, normally between five and fifteen minutes of learning material.

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Glossary, Continued

Section II – Terms, Continued

Learning Objective	A precise three-part statement describing what the students will accomplish in terms of expected student performance under specific conditions to accepted standards.
Learning Organization	Organization with continuous testing of experience and the transformation of that experience into performance and supporting skills/knowledges. The learning is accessible to the whole organization and is relevant to its core purpose.
Lesson	The basic building block of training. The lesson normally includes (1) showing or telling students what to do or how to do it, (2) giving an opportunity for students to practice, and (3) providing students feedback regarding their performance.
Lesson Plan	The blueprint for presenting training by an instructor. It prevents training from becoming haphazard and provides for training standardization. The lesson plan includes all the details required for presentation.
Mission Essential Task List (METL)	A compilation of mission essential tasks that an organization must perform if it is to be successful. A mission-based training requirement (1) justifies resource needs, (2) links functional requirements to tasks, and (3) allows developers to make informed decisions, thereby satisfying critical mission-based task performance requirements.
Objectives	Statements which specify precisely what behavior the student must exhibit upon completion of training, the conditions under which the behavior will be accomplished, and the minimum standard of acceptable performance (also referred to as training or learning objectives).
Performance-based tests	Tests which measure performance of a task in either the natural or a simulated situation against a standard or criterion. Included are written simulations, identification tests (written or performance), simulated performance, and work samples (written or performance).
Posttest	A test given to a student upon completing a course of instruction to measure learning achieved.
Prerequisites	Skills, knowledges, and abilities required of a student to effectively participate in a specific training course prerequisites may be based on position, grade, job series, subject knowledge, or experience the student must have.
Pretest	A test given to a student before entry into a course or unit of instruction to determine the technical skills and knowledges he or she already possesses in a given subject. In classroom training, this test can be used to identify areas for more/less emphasis; in exportable training, it can be used to identify portions of the instruction the student can by-pass.

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Glossary, Continued

Section II – Terms, Continued

Proponent (Organizational)	The Organizational Proponent sponsors and reviews the training curriculum, to include all courses for the functional area: (1) to ensure consistency with mission objectives and eliminate or prevent any duplications between courses, (2) to recommend solutions for training tasks not covered by existing courses, (3) to recommend the most cost-effective methodology for training; and (4) to ensure currency of content training and materials.
Proponent-Sponsored Engineer Corps Training (PROSPECT)	Short-term training courses sponsored by USACE elements. Previously, the acronym was used to refer to the classroom program only; however, all training managed by CEHR-P-TO is proponent-sponsored, whether classroom or exportable.
Reliability	The extent to which a test/test item gives consistent results each time instructors use it. Instructors should measure tests for validity as well as reliability.
Stem	The part of a multiple-choice test item that asks the question.
Subject matter expert(s)	An individual, usually from a USACE element, who has been designated by a proponent or action officer to serve as an advisor/consultant to CEHR-P-TO for a specified course regarding subject matter, content, objectives, etc. An SME may be an advisor/ consultant, a developer, a course monitor, or an instructor; an SME sometimes performs multiple roles.
Target population	The group of individuals that will potentially require training in a specific area.
Task	A unit of work that forms a significant part of a duty.
Task analysis	A method by which the knowledge, skills, and steps required for task performance is systematically examined.
Task inventory	A list of all the task statements for a job.
Teletraining	Video or audio training delivered via communication links such as satellite or cable links.
Terminal Learning Objective (TLO)	The main objective of a lesson. The TLO describes exactly what the student must accomplish, under the stated conditions and to the prescribed standard, upon lesson completion.

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Glossary, Continued

Section II – Terms, Continued

Training Developer (TD)	The individual with the function o analyzing, designing, developing, and evaluating training and training products. Any individual functioning in this capacity is a training developer, regardless of job or position title.
Training Package	In the exportable training program, all the materials needed to conduct the training. Included are a facilitator's guide, student study guides, visual content carriers (e.g., videocassettes, and supplemental materials.
Validation	Presentation of training under normal circumstances to determine the validity of learning objectives, content, sequence, methods, and student achievement.
Web-based training	Web-based training is a DL method in which training applications residing on a central computer functions as a network server to deliver training across a public or private computer network, e.g., the Internet, to students at any location and displayed on a web-browser. Authorized students may access training on demand and download applications for individual instruction.