PERCEIVED TRAINING NEEDS OF SUBJECT-MATTER SPECIALISTS AT THE U.S. COAST GUARD INSTITUTE

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CHAPTER I

INTRODUCTION

This study was conducted to assess the training needs of subject-matter specialists at the United States Coast Guard (USCG) Institute, located in Oklahoma City, Oklahoma. The Institute is the center for preparing correspondence courses and promotion examinations for Coast Guard enlisted personnel. According to the USCG Institute Organization Manual (CGI M5400) (1983), these two functions--correspondence courses and promotion examinations--are vital programs for Coast Guard personnel. The Course and Examination Division at the USCG Institute has the primary responsibility for these programs. To fulfill its mission, this division has 62 personnel, including supervisors, subject-matter specialists, education specialists, and writer-editors.

As stated in the USCG Institute Organization Manual (CGI M5400)(1983), the subject-matter specialists are key personnel in the correspondence course and examination development process. They are senior enlisted personnel who provide the technical expertise necessary to produce high quality correspondence courses and examinations. The subject-matter specialists' tour of duty at the USCG

Institute is from three to six years. Since the specialists' expertise is in a technical area, not in correspondence courses and examinations, they must have training in how to prepare courses and examinations.

This study gathered information from supervisors, subject-matter specialists, education specialists, and writer-editors. The information was needed to design training for new subject-matter specialists.

Statement of the Problem

There is a need to identify training needs of subject-matter specialists at the USCG Institute, Oklahoma City, Oklahoma, because the subject-matter specialists are technical experts who have not had experience or training in the preparation of correspondence courses and tests.

Purpose of the Study

The purpose of this study was to identify training needs of subject-matter specialists at the United States Coast Guard Institute, Oklahoma City, Oklahoma, as perceived by subject-matter specialists, supervisors, education specialists, and writer-editors.

Research Questions

The research questions this study sought to answer were:

1. What are the perceived training needs of new

subject-matter specialists relating to correspondence courses and tests, as follows:

a. Planning a correspondence course.

b. Developing the curriculum outline.

c. Developing course pamphlets.

d. Developing self-quizzes.

e. Using illustrations.

f. Word-processing and printing.

g. Motivating students.

h. Revising a course.

i. Developing end-of-course tests.

j. Developing servicewide examinations.

2. Are there any differences in perceptions of subject-matter specialists and other respondents?

Scope of the Study

The scope of the study was limited to:

1. The subject-matter specialists assigned to the USCG Institute, Course and Examination Division.

2. Supervisors (USCG officers) in the Course and Examination Division at the USCG Institute.

3. Education specialists and writer-editors in the Course and Examination Division at the USCG Institute.

Assumptions of the Study

The following assumptions of the study were made:

1. The subject-matter specialists involved in the

study were representative of senior enlisted persons throughout the Coast Guard who might be assigned to the USCG Institute.

2. The responses of the participants were honest expressions of their opinions.

3. The participants provided accurate evaluations of the training needs of new subject-matter specialists.

Limitations of the Study

The limitations of this study were:

1. Many of the individuals involved had limited experience in preparing correspondence courses and tests.

2. There were a limited number of subject-matter specialists in the Course and Examination Division at the USCG Institute.

3. There were a limited number of supervisors, education specialists, and writer-editors in the Course and Examination Division at the USCG Institute.

Definition of Terms

The following definitions are provided to clarify the terms used in this study:

Correspondence course: Good (1973), editor of the Dictionary of Education, defines a correspondence course as "a method of providing for the systematic exchange between student and instructor of material sent by mail for the purpose of instruction in units of subject matter" (pp 142-143).

Course developer: Individual who develops correspondence courses and tests; the term generally refers to subject-matter specialist.

Education specialists: Civilian personnel who provide professional educational guidance for the preparation of correspondence courses and tests.

Subject-matter specialists: Senior enlisted personnel who provide technical expertise for the preparation of correspondence courses and tests.

Supervisors: Branch chiefs and assistant branch chiefs who supervise the preparation of correspondence courses and tests in the Course and Examination Division at the USCG Institute. The supervisors are commissioned officers in the U.S. Coast Guard.

Servicewide examination: A norm-referenced examination used, along with other factors, to rank U. S. Coast Guard personnel for advancement in rate (U.S. Coast Guard Servicewide Examination Development Manual, 1982).

Training: As defined by Good (1973) in the Dictionary of Education, the term "training" means:

> The special kind of teaching and instruction in which the goals are clearly determined, are usually readily demonstrated, and call for a degree of mastery which requires student practice and teacher guidance and appraisal of the student's improved performance capabilities (p. 613).

Training needs: Job-performance problems which can be solved by training.

Writer-editors: Civilian personnel who provide professional guidance in writing correspondence courses and tests.

Organization of the Study

Chapter I introduces the study, presents the problem, purpose, questions, scope, assumptions, limitations, and definition of terms. Chapter II includes a review of literature. The review of literature is divided into five main categories: (1) historical background and organization of the U. S. Coast Guard Institute, (2) preparation of U. S. Coast Guard correspondence courses and tests, (3) basic concepts of correspondence course instruction, (4) relating needs-assessment to training and instructional design, and (5) needs-assessment models and methods. Chapter III describes the methodology used for the research in this study by explaining the population, reviewing the instrument used to collect the data, and explaining the analysis of data. Chapter IV explains the findings of the study. Chapter V concludes the study with a summary, conclusions, and recommendations.

CHAPTER II

REVIEW OF LITERATURE

The purpose of the review of literature was to determine what information was available that related to the training needs of subject-matter specialists at the U. S. Coast Guard Institute. The review of literature is divided into five segments: (1) historical gackground and organization of the U. S. Coast Guard Institute, (2) preparation of U. S. Coast Guard correspondence courses and tests, (3) basic concepts of correspondence course instruction, (4) relating needs assessment to training and instructional design, and (5) needs-assessment models and methods. The first three segments provide the basis on which to identify training needs since they deal primarily with information and procedures the subject-matter specialists will use in performing their jobs. Sections four and five describe some of the methods and models to be used in identifying the training needs.

Historical Background and Organization of the U. S. Coast Guard Institute

According to U. S. Coast Guard History (1973), the United States Coast Guard (USCG) Institute was established in 1928 to prepare correspondence courses for Coast Guard personnel. In 1929, the Institute was moved from Washington, D.C., to New London, Connecticut, where it remained until 1942. At that time it was moved to Groton, Connecticut. On April 1, 1967, the Coast Guard was transferred from the Treasury Department to the newly created Department of Transportation (DOT). That same year, the Coast Guard Institute was moved to Oklahoma City, Oklahoma, and located at the Federal Aviation Administration Aeronautical Center. The Federal Aviation Administration (FAA) had also become a part of the new DOT. In 1969, the Institute was assigned the responsibility of preparing promotion examinations.

Today, one of the primary missions of the USCG Institute is to provide correspondence courses to meet Coast Guard training requirements. The other primary mission is to develop examinations for the selection of personnel for advancement (USCG Institute Organization Manual, 1983).

The Course and Examination Division at the USCG Institute is responsible for developing the correspondence courses and advancement examinations. This division consists of four branches: (1) Aviation Branch, (2) Engineering Branch, (3) Surface Operations Branch, and (4) Clerical and Personnel Services Branch.

The personnel of the Course and Examination Division consist of nine officers, 43 subject-matter specialists, six education specialists, and four writer-editors. The subject-matter specialists provide the technical input for the preparation of correspondence courses and examinations. The education specialists and writer-editors provide professional guidance and assistance for the subject-matter specialists in preparing the courses and examinations (USCG Institute Organization Manual, 1983).

The USCG Institute's nonresident program includes the preparation of rating correspondence courses and special-subject correspondence courses, totaling about 150 courses which must be continuously updated and revised. Each course has three end-of-course tests. The Institute's program is accredited by the National Home Study Council (NHSC). This means that the Institute meets educational and administrative standards established by the National Home Study Accrediting Commission. Additionally, selected Institute courses have been recommended by the American Council on Education (ACE) for academic credit (U.S. Coast Guard Institute Correspondence Course Manual, 1982).

Preparation of Coast Guard Correspondence Courses and Tests

The Coast Guard Institute uses the systems approach to training. That is, each correspondence course is prepared

in accordance with Instructional Systems Development (ISD) procedures. The ISD process is defined in U.S. Air Force Publication 50-58 (1978) as follows:

> ISD is a deliberate and orderly process for planning and developing instructional materials which ensure that personnel are taught the knowledges, skills, and attitudes essential for successful job performance (p. 1-3).

The first step in the correspondence course development process is to analyze the job performed by students who will be enrolled in the course. When analyzing the job, the subject-matter specialists will use their own experience, interview other specialists at field units, and review the Enlisted Qualifications Manual, M1414.8. When possible, a formal job-task analysis will be conducted, including questionnaires to field unit personnel and an analysis of their responses. The overall process of job analysis involves identifying essential job tasks and the skills and knowledge required to perform the tasks, selecting tasks for training, and determining which of the selected tasks can be taught by correspondence courses. The results of the task analysis will help course developers provide a course that best meets the needs of the students (U.S. Coast Guard Institute Course Development Manual, 1981).

After the job task analysis, objectives are prepared based on the tasks selected for training. Mager (1975) defined an objective as:

> . . . a description of a performance you want learners to be able to exhibit before you consider them competent. An objective describes an intended result of instruction, rather than the process itself (p. 5).

The U.S. Coast Guard Institute Course Development Manual (1981) gave another definition of an objective:

> . . . a statement describing an instructional outcome, something the student is expected to be able to do after completing the instruction (p. 4-2).

To be effective and useful, each objective must be stated properly. Mager (1975) stated that each objective must have these characteristics:

1. Performance. An objective always describes what a learner is expected to be able to do.

2. Conditions. An objective always describes the important conditions (if any) under which the performance is to occur.

3. Criterion. Wherever possible, an objective describes the criterion of acceptable performance by describing how well the learner must perform in order to be considered acceptable (p. 21).

The objectives for an Institute correspondence course are used in designing, developing, evaluating, and revising the course. For example, objectives are a good basis for:

1. Selecting or designing instructional materials, content, and methods.

2. Selecting or creating test items designed to measure student learning outcomes (determining whether or not the student has achieved the objectives).

3. Providing students with a practical guide to study; if students know what is expected of them, they can organize their efforts to achieve those objectives (U.S. Coast Guard Institute Course Development Manual, 1981, p. 4-2).

At this point in the course development process, the criterion-test items (end-of-course test) may be prepared (U.S. Air Force Publication 50-58, 1978). However, it is

also acceptable to wait until after text development to prepare the end-of-course test. This step is usually accomplished throughout the course development process.

After the course objectives are developed, they are documented in the curriculum outline. The outline is a communication vehicle among the elements of the course-development and review system. The outline also describes the mission or overall purpose of the course and the scope of the course; the scope establishes the limit within which the training will take place (U.S. Coast Guard Institute Course Development Manual, 1981).

The next phase of the course development process includes the planning and developing of instructional materials. These materials are developed or selected to enable the student to achieve the objectives of the course (U.S. Air Force Publication 50-58, 1978). Each correspondence course consists of one or more pamphlets (75 to 100 pages each); each pamphlet is divided into reading assignments, each of which includes a list of objectives, text material to support the objectives, and a review quiz based on the objectives (U.S. Coast Guard Institute Course Development Manual, 1981).

When developing instructional material, the course developer, assisted by an education specialist and a writer-editor, structures and sequences the text material to best facilitate student motivation and learning. The specialist follows such basic concepts as those described by Mager and

Pipe (1979):

1. Clearly and adequately explains ideas and procedures.

2. Uses language the student will understand.

3. Uses examples the student will understand and relate to.

4. Uses appropriate illustrations to amplify the text.

5. Omits irrelevant information not pertinent to the objectives.

6. Provides adequate practice exercises and self-quizzes.

7. Provides the student feedback and reinforcement by including the answers to the self-quizzes.

The course developers must also ensure that the instructional materials are written at the appropriate reading level for the students. Two formulas, the Fog Index and Forcast, are used to check the readability of instructional materials (Hughes, 1980).

The self-scoring quizzes for each reading assignment must get the student actively involved with the materials. A variety of formats may be used for these quizzes, such as completion items, short-answer items, essay items, problem solving, graphics, situations, matching, and multiple-choice items (U.S. Coast Guard Institute Course Development Manual, 1981).

Although a variety of test-item formats may be used for self-quizzes, only one format--four-response, multiple-choice

--is permitted for the end-of-course test and the service-wide examination. Gronlund (1977) outlined the following requirements for test items:

1. Design each item to measure an important learning outcome.
2. Present a single-clearly formulated problem in the stem of the item.
3. State the stem of the item in simple, clear language.
4. Put as much of the wording as possible in the stem of the item.
5. State the stem of the item in positive form, whenever possible.
6. Emphasize negative wording whenever it is used in the stem of an item.
7. Make certain that the intended answer is correct or clearly best.
8. Make all alternatives grammatically consistent with the stem of the item and parallel in form.
9. Avoid verbal clues that might enable students to select the correct answer or to eliminate an incorrect alternative.
10. Make the distractors plausible and attractive to the uninformed.
11. Vary the relative length of the correct answer to eliminate length as a clue.
12. Make certain each item is independent of the other items in the test (pp. 39-53).

The end-of-course test is a closed-book, proctored criterion-referenced test. The passing score for the test is 80 percent (U.S. Coast Guard Institute Course Development Manual, 1981).

After all course materials, course pamphlets, and tests are prepared, they are typed in camera copy, proofread, printed, and placed in a staging area for distribution. After courses are administered to students, the courses must be continually evaluated to make sure the students learn what they need to know. To evaluate the courses, the Institute checks the students' performance (U.S. Air Force Publication 50-58, 1978). When materials need updating or revising, the same process is used as that used to develop the original materials (U.S. Coast Guard Institute Course Development Manual, 1981).

Servicewide Examinations

As stated in the U.S. Coast Guard Institute Service-wide Examination (SWE) Development Manual (1982),the Institute prepares servicewide promotion examinations which are given twice a year. The SWE examinations are used along with other factors to rank Coast Guardsmen for promotion. The principal procedures for preparing the SWE exams are:

1. The exam typist prepares a single-column, single-spaced copy (roadmap) of the old series exam.

2. The branch plans the exam development and revision strategy based on a review of enlisted qualifications, references, and item statistics. New exam items are written and necessary revisions are made to other items. New and revised items are reviewed and combined with re-used items and arranged into a revised item deck.

3. The exam roadmap (copy of old series exam) is marked to show revisions made to the item cards. The exam is typed and proofed, and the camera-ready copy is prepared. Illustrations are added to the camera-ready copy, page tabs are added, and the exam is printed and checked.

4. The answer key and section title sheets are prepared.

5. After the exam is administered, it is audited for errors which may have been missed. Errors are corrected and the exam is scored.

Basic Concepts of Correspondence Course Instruction

Correspondence study is a unique way for people to continue their education, and more and more people are becoming interested in this method. For example, the National Center for Education Statistics reported that in 1976 one-fourth of the 1.8 million vocational students were enrolled in 100 correspondence course schools. These students had completed high school and were not attending college (Poteet, 1979).

Lambert (1980) identified the distinguishing characteristics of correspondence education as follows:

> Education designed for students who live at a distance from the teaching institution. Ordinarily, printed and/or recorded materials are sent by mail, providing the student with structured units of information, assigned exercises for practice and examinations to measure achievement, which in turn are submitted to the teaching institution for evaluation and comment . . . (p. 25).

The research on how adults learn by correspondence study, or by any other means, has been somewhat inconclusive and limited. However, correspondence programs have achieved a respectable amount of success. Fowler (1980) suggested that success can be attributed in part to some of the following basic concepts:

> Learning takes place everywhere, and most of it outside the classroom.
>
> Home study learning theory is based on the concept of independent, mature learners studying formally prepared materials in a given subject. The learners are motivated primarily by the interest they have in the subject they are studying.
>
> . . . The teacher (or more properly tutor) plays a supportive role by guiding the learner, giving encouragement, and providing feedback and, hopefully, external motivation (p. 4).

Researchers have concluded that correspondence course study has several advantages, such as those outlined in Poteet (1979): (1) Students do not have to give up their jobs, reschedule working hours, or move. (2) Students do not have the hidden costs of attending class such as parking, transportation, and baby-sitting. (4) Students can get extra help when it is needed.

In addition to the advantages, correspondence study has disadvantages as well. For example, there is no face-to-face contact with an instructor to clarify points that could be confusing to the student. The student must have initiative, self-discipline, and the desire to learn (Poteet, 1979). Also, since most students studying by correspondence are adults, they may have problems such as

lack of confidence in their ability to learn, or they may be afraid of not performing well. The students may have problems finding time to study because of family and job obligations. Also, fatigue may hamper the students' progress. The course developer must be aware of these possibilities (Fowler, 1980).

Since correspondence study is unique, the course developer must be aware of the basic concepts and fundamentals of developing correspondence course materials. Each course should include clearly stated objectives so the students know exactly what is expected of them. The lessons must contain essential information to enable the student to achieve the stated objectives. The information should be well organized and not too complex for the student. All course materials should be pertinent to the needs of the student and of the highest quality possible. All unnecessary material should be omitted from the course. Each course should have built-in reading assignments and self-evaluative instruments, such as self-scoring examinations. All test items in a course must be based on the stated objectives. Student motivation techniques should be used in each lesson. For example, the subject matter should progress from easy to difficult, known to unknown, etc. Having the student do practice exercises in the text is a way of motivating the student (Lambert, 1980; Frenzel, 1980).

Relating Needs Assessment to Training and Instructional Design

The basis for any training program is the identification of a "need" for the training. Briggs (1981) describes a "need" as the difference between the existing state of affairs and a desired state of affairs. "Learning needs" can be identified as ". . . those changes that should be made in employees or students, by educational techniques, to further efficient operation and mission accomplishment" (Knowles, 1980, p. 97).

Knowles (1980) found that, in every organization, situations are constantly occurring which produce obvious training needs. For example, a new employee comes to work, an employee is assigned to a new job requiring new skills, methods for performing a job are changed, new equipment is installed, or the mission of an organization is substantially changed.

Before attempting to provide training to correct problem situations, the persons responsible must have a clear understanding of the trainees and what they need to know about specific topics (Anderson, 1980). The main purposes of determining learner needs are to (1) provide training that the trainee does not already have and (2) give the trainees information they can use.

The process of identifying learner needs is called "needs assessment." Although the literature of the field

offers many definitions of "needs assessment," the general definition is:

> . . . a process for identifying and measuring gaps between what is and what ought to be, prioritizing the gaps, and determining which of the gaps to work on to obtain closure (Trimby, 1979, p. 26).

There has been widespread adoption of needs assessment strategies and techniques during the past decade. This has contributed to more effective educational planning (Kimpston, 1979). Because of widespread use and effectiveness, the needs-assessment process has become recognized as an integral part of educational planning and evaluation (Witkin, 1977).

The method for determining needs or problems which are most important to plan for generally has four steps (Kimpston, 1979):

1. Generate goals and rank them for importance--that is, determine the desired conditions.
2. Determine the present status of each goal, or existing conditions.
3. Identify and analyze discrepancies between the goals and the present status.
4. Assign priorities to the discrepancies (i.e., needs) (Kimpston, 1979, p. 16).

Roberts (1977) described how the U. S. Army used needs assessment techniques for improving its training program. For example, in 1971 the Army Chief of Staffs directed the Board for Dynamic Training to complete a needs assessment of Army training. The purpose was to identify discrepancies in what the Army required and in what it was then doing. The discrepancies identified led to many improvements in Army training, such as:

1. A self-study series of mediated instructional material for soldiers in units where expert instruction was not always available.

2. New techniques in training literature.

3. A network for exchanging ideas between operational units and the training base which provides instructional materials (p. 42).

The U. S. Army conducted another needs assessment in 1975. Among the results of the study was the development of a new agency, the U. S. Army Training and Doctrine Command, Training and Development Institute.

The two needs assessment studies conducted by the Army were significant in the formulation of Army training programs and policy. Training is more efficient because it is provided only for those tasks requiring training; training is developed under instructional technology methods; training is done at the right time; and training is provided at the best location (Roberts, 1977).

In another study, Dick and Carey (1977) also found that a needs assessment is invaluable in the design of instruction. Their study showed that instructional designers can use needs assessments to obtain information essential for effective programs. First, the instructional designers documented the needs relating to the target groups, functions they were required to perform, and conditions under which they performed the functions. These documented needs were studied to differentiate between instructional needs and noninstructional needs. The next

step was to identify which instructional needs were the most critical. The result was a list of priority instructional needs, which were converted into instructional goals. The information gathered in the needs assessment was used to design the instruction--to identify entry behaviors for the target population, develop performance objectives and criterion test items, and design instructional materials. The needs-assessment data were used in determining if the student was performing at the expected level. Then, when the instructional materials were evaluated, the results were used to update the information about the target population in the original needs assessment.

Needs Assessment Models and Methods

In recent years, there have been many different models, tools, kits, strategies, and instruments for assessing educational or training needs. Trimby (1979) identified four needs assessment models used in the military, government, business, industry, and education. These were the Kaufman, Coffing, Lee, and Harless models. All four models are concerned with gaps between present and desired outcomes and prioritizing the gaps, with emphasis on planning stages. The first two models, the Kaufman and Coffing, differ in that the Kaufman model emphasizes problem-solving. The Lee model, like the Coffing model, places emphasis on the client's perceptions of needs rather than the assessor's.

The Harless model, called front-end analysis, is concerned with both problem solving and decision making. Witkin (1977) identified another model, called pupil perceived needs assessment (PPNA), which was developed by Research for Better Schools, Inc. This model gives instructions on conducting a needs assessment as perceived by pupils. Guidelines are also included for developing instruments rather than providing instruments developed by others.

Several methods are used to gather data for assessing training needs. Knowles (1980) has determined that the general methods are the use of management (personnel) records and reports, performance and achievement tests, group problem analysis, job analysis combined with performance appraisal, interviews, and written questionnaires.

One of the most widely used tools for assessing training needs is the written questionnaire (Witkin, 1977). The advantage of questionnaires is that they can reach many people in a short time and at reasonable expense. People can give their ideas, anonymously without fear of reprisals. The data can be processed quickly. Questionnaires also have limitations in that they get answers only to questions that are asked. Another limitation of questionnaires is that they may not reveal the causes of problems and the best was to solve them (Knowles, 1980).

If questionnaires are used, interviews should be made to provide a framework for the questionnaire before it is constructed. Before being administered, questionnaires

should be pre-tested for clarity, adequacy, etc. The anonymity of the participants must be safeguarded. If a questionnaire is used, the user should be prepared to report the general findings to those who participate and to do something about the findings (Knowles, 1980).

Witkin (1977) pointed out that the following needs-assessment questionnaires are available from publishers: (1) Battelle survey, (2) Westinghouse surveys, and (3) Institutional goals inventory (IGI). The Battelle and IGI questionnaires use a 5-point scale to rate the importance of goals. The Westinghouse questionnaires use a 3-point scale for ranking goals. These instruments are easy to administer and provide information that is easily understood. Most locally produced questionnaires are modeled on one of these instruments. The questionnaires ask for participants' perceptions of existing and desired conditions. The resulting statements of needs are ranked in order of importance.

Although there are many methods for assessing needs, none will produce exact results for decision making. Since new needs-assessment technologies are being developed, the planner may find it difficult to select a method. The best guideline is to ask why the needs assessment is needed and how the data will be used. This technique may help planners select the most effective method (Witkin, 1977).

Summary

The review of literature began with a description of

the history and organization of the U. S. Coast Guard Institute and continued with a description of the Institute's correspondence course and test programs. Then, the basic concepts of correspondence course instruction were outlined. In the last two segments of the literature review, the relationship between needs assessment and instructional design was discussed, and was followed by a brief review of needs assessment models and methods.

CHAPTER III

METHODOLOGY

The purpose of this study was to gather information concerning the training needs of subject-matter specialists at the U. S. Coast Guard Institute, as perceived by the branch chiefs, warrant officers, subject-matter specialists, education specialists, and writer-editors at the Institute. The information will be used to determine the appropriate training program for the subject-matter specialists.

The following sections are discussed in this chapter:

1. Population and Sample,
2. Development of Questionnaire,
3. Collection of Data,
4. Analysis of Data.

Population and Sample

The study was conducted at the U. S. Coast Guard Institute, Oklahoma City, Oklahoma, in the Spring of 1983. The population of the study consisted of nine Coast Guard officers, 34 subject-matter specialists, six education specialists, and four writer-editors. All participants were members of the Course and Examination Division at the U. S. Coast Guard Institute.

Development of Questionnaire

The data gathering instrument for the study was a questionnaire. (See the Appendix for a copy of the final instrument.) It was designed to obtain the perceptions of the training needs of new subject matter specialists. The questionnaire was developed locally and was based on job tasks performed by subject matter specialists. The questionnaire was divided into two parts: Part I contained the demographic characteristics of the respondents. Part II listed 10 major categories of tasks relating to the preparation of correspondence courses and tests. Under each category, several tasks/topics were identified. Respondents were asked to rate each topic on a 5-point scale ranging from great need (5) to little need (1). In addition, space was provided so that respondents could insert additional topics or comments. The questionnaire was field-tested by three persons not participating in the study to check for accuracy and clarity. Revisions were made before the questionnaire was distributed.

Collection of Data

The questionnaire was distributed by the division chief to branch chiefs, warrant officers, subject-matter specialists, education specialists, and writer-editors in the Course and Examination Division at the U. S. Coast Guard Institute in March 1983.

Analysis of Data

The data gathered by the questionnaire were compiled using frequencies, means, percentages, and ranks.

CHAPTER IV

PRESENTATION OF FINDINGS

This study was conducted to identify the training needs of new subject-matter specialists at the U. S. Coast Guard Institute as perceived by subject-matter specialists, branch chiefs, warrant officers, education specialists, and writer-editors. A questionnaire was the data gathering instrument. Of the 62 questionnaires distributed, 53 or 84 percent were returned to the Course and Examination Division Chief. The findings of the study are organized according to the data gathered by the questionnaire. The following sections are discussed:

1. Demographic Characteristics of Respondents
2. Major Categories of Tasks for Preparing Correspondence Courses and Tests
3. Comparison of Subject-Matter Specialists' Responses to the Responses of Other Respondents

Demographic Characteristics of Respondents

The data relating to the characteristics of the respondents in this study are shown in Table I. Five groups of respondents, totaling 53, completed the questionnaire: branch chiefs, warrant officers, subject-matter specialists,

TABLE I

DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

POSITION	N	%
Branch Chief	3	5.6*
Warrant Officer	7	13.2
Subject-Matter Specialist	34	64.1
Education Specialist	6	11.3
Writer-Editor	3	5.6
TOTAL	53	
Years at the USCG Institute:		
Under 12 months	20	37.7
12 months or more	33	62.2

*Numbers may not total 100 due to rounding.

education specialists, and writer-editors. The 34 subject-matter specialists made up the largest of the five groups. Twenty of the respondents had worked at the Coast Guard Institute for less than 12 months, and 33 had worked 12 months or longer.

Major Categories of Tasks for Preparing Correspondence Courses and Tests

The questionnaire listed 10 major categories of tasks for preparing correspondence courses and tests. Each category was further divided into topics, which were rated according to the degree of need for training. The frequencies and means for each topic are discussed in the following paragraphs and are illustrated in tables. The scale shown below was used to divide the means into three groups:

	>	3.80	=	high mean
3.20	-	3.80	=	middle
	<	3.20	=	low mean

The preceding scale was derived by subtracting the lowest mean 2.60 from the highest mean 4.39, which equaled 1.79. This figure was then divided by three. The answer, .6, was added to 2.60 to get the low-mean group (less than 3.20). The .6 was then added to 3.20 to get the middle group of means (3.20 - 3.80). The means that were greater than 3.80 were in the high-mean group.

Planning a Correspondence Course

The data pertaining to Planning a Correspondence Course are presented in Table II. This category includes seven training topics. The frequency of responses by degree of need is presented in columns one through five. The mean is shown in column six. "Determining what job tasks to cover" had the highest mean (3.69) in this category. Of the 53 respondents, 38 gave this topic a rating of four or above. "Determining the emphasis to give each task" had the next highest mean of 3.62. The lowest rating in this category was "describing the target population," which had a mean of 2.69. This topic and two others with slightly higher means were in the low-mean group for the study.

Developing the Curriculum Outline

As seen in Table III, two out of seven training topics relating to the curriculum outline were in the high-mean group. Respondents gave the highest rating in this category to "procedures for developing the outline," which had a mean of 4.22. This was one of the highest means in the entire study. Forty-five of the 53 respondents gave this topic a rating of four or above. The second highest rating in this category was "writing performance objectives," which had a mean of 3.83. The lowest mean for this category was 3.18, "scheduled review of the outline," which was in the low-mean group for the study.

TABLE II

MEAN RESPONSES TO TOPICS RELATING TO PLANNING A CORRESPONDENCE COURSE

TOPICS	DEGREE OF NEED 5* N	4 N	3 N	2 N	1 N	$\bar{X}$
Determine job tasks/topics to cover	19	19	9	8	2	3.69
Determine emphasis for tasks/topics	13	20	9	9	2	3.62
Select Enlisted Qualifications	15	16	10	8	3	3.54
List and analyze job tasks	6	11	19	11	6	3.00
Obtain source material	15	13	11	11	3	3.49
Obtain copyright release	15	5	8	15	8	2.96
Describe target population	5	8	19	13	8	2.69

*Not all topics total 53 because some participants did not respond to all topics.

TABLE III

MEAN RESPONSES TO TOPICS RELATING TO DEVELOPING THE CURRICULUM OUTLINE

TOPICS	DEGREE OF NEED 5* N	4 N	3 N	2 N	1 N	$\bar{X}$
Procedures for developing the outline	28	15	6	2	2	4.22
Purpose of the curriculum outline	16	16	13	5	3	3.69
Components of the outline	17	15	10	8	2	3.64
Writing performance objectives	20	13	14	3	3	3.83
Characteristics of objectives	13	16	14	5	5	3.50
Evaluating objectives	12	11	21	3	6	3.37
Scheduled review of the outline	11	8	20	8	6	3.18

*Not all topics total 53 because some participants did not respond to all topics.

Developing Pamphlets

According to the data for Developing Pamphlets, presented in Table IV, three of the 11 training topics had means above four. "Pamphlet development procedures" had the second highest mean of the entire study (4.35); 46 of 53 respondents rated this topic four or above. "Preparing the rough draft" and "organizing and presenting the text" had means of 4.07 and 4.11, respectively. The lowest ratings were given to "use of readability formulas" and "purposeful repetition," which had means of 2.60 and 3.00, respectively. Both were in the low-mean group, and 2.60 was the lowest mean of the study.

Developing Self-Quizzes

The data relating to developing self-quizzes are shown in Table V. "Requirements for self-quizzes," which had a mean of 3.83, was the only one of the three topics in this category in the high-mean group. "Writing various types of items" was next highest with a 3.71 mean. None of the topics were in the low-mean group.

Using Illustrations

As seen in Table VI, none of the three topics relating to illustrations were in the high-mean group. The highest mean was 3.49 for "effective use of graphics." Only one of the topics, "numbering illustrations," with a mean of 2.9, was in the low-mean group.

TABLE IV

MEAN RESPONSES TO TOPICS RELATING TO DEVELOPING PAMPHLETS

TOPICS	DEGREE OF NEED 5* N	4 N	3 N	2 N	1 N	$\bar{X}$
Pamphlet development procedures	29	17	5	1	1	4.35
Outlining	16	18	15	1	2	3.79
Standard text breakdowns	13	16	13	7	3	3.49
Preparing the rough draft	25	13	12	1	1	4.07
Required pages for each pamphlet	13	12	14	6	5	3.24
Organizing and presenting the text	24	17	8	3	0	4.11
Characteristics of a good reading assignment	20	15	13	3	1	3.88
Writing principles:						
a. Word usage	15	16	14	4	3	3.62
b. Gender related wording	13	12	13	6	7	3.22
c. Use of new terms	8	14	15	9	6	3.11
d. Grammar	15	15	14	4	4	3.56

TABLE IV (Continued)

TOPICS	DEGREE OF NEED 5* N	4 N	3 N	2 N	1 N	$\bar{X}$
e. Spelling and punctuation	16	14	12	6	5	3.49
f. Sentence structure	16	14	14	4	4	3.58
g. Paragraph development	15	15	14	4	4	3.56
h. Introductions, summaries, and transitions	13	17	15	4	3	3.56
i. Purposeful repetition	8	12	18	3	11	3.00
Managing text readability	8	18	15	4	6	3.22
Use of readability formulas	3	10	16	13	9	2.60
Review of printed pamphlets	9	10	23	6	3	3.18

*Not all topics total 53 because some participants did not respond to all topics.

TABLE V

MEAN RESPONSES TO TOPICS RELATING TO DEVELOPING SELF-QUIZZES

TOPICS	DEGREE OF NEED 5* N	4 N	3 N	2 N	1 N	$\bar{X}$
Requirements for self-quizzes	18	16	12	6	1	3.83
Length and complexity of self-quizzes	15	14	11	9	2	3.47
Writing various types of items	16	18	12	3	3	3.71

*Not all topics total 53 because some participants did not respond to all topics.

TABLE VI

MEAN RESPONSES TO TOPICS RELATING TO USING ILLUSTRATIONS

TOPICS	DEGREE OF NEED 5* N	4 N	3 N	2 N	1 N	$\bar{X}$
Effective use of graphics	7	21	17	7	1	3.49
Appropriate illustrations/graphics	6	18	17	9	1	3.24
Quality of illustrations/graphics	9	17	15	8	3	3.33
Placement in text	8	15	17	11	1	3.28
Numbering illustrations	8	6	20	12	6	2.90

*Not all topics total 53 because some participants did not respond to all topics.

Word-Processing and Printing

The data relating to Word-Processing and Printing are shown in Table VII. This category includes three training topics. "Proofreading procedures/requirements" had a mean of 3.92, the highest mean in this category and one of the high means of the study. Twenty of 53 respondents rated this topic a five, and 15 gave it a four. "Pamphlet print (styles and procedures)" had a mean of 3.09, which is in the low-mean group and the lowest in this category.

Motivating Students

As seen in Table VIII, none of the means of the nine topics relating to student motivation were in the high-mean group. The highest mean of this category was 3.37 for "appropriate length and complexity of reading assignments." Three of the topics were in the low-mean group: "facilitating independent study" (mean, 2.92), "rewarding performance" (mean, 2.86), and "getting the learner involved" (mean, 3.09).

Revising a Correspondence Course

The data relating to Revising a Correspondence Course are shown in Table IX. This category includes seven training topics. Five of the seven topics were rated in the high-mean group. The highest mean in this category was 4.20 for "procedures for revising a course." Although the lowest mean for this category was 3.56 for "use of the error tickler file," it was not among the low means for the study.

TABLE VII

MEAN RESPONSES TO TOPICS RELATING TO WORD-PROCESSING AND PRINTING

TOPICS	DEGREE OF NEED 5* N	4 N	3 N	2 N	1 N	$\bar{X}$
Rough copy requirements	15	17	13	8	0	3.73
Proofreading procedures/requirements	20	15	13	4	1	3.92
Pamphlet printing (styles and procedures)	5	14	19	11	4	3.09

*Not all topics total 53 because some participants did not respond to all topics.

TABLE VIII

MEAN RESPONSES TO TOPICS RELATING TO STUDENT MOTIVATION

TOPICS	DEGREE OF NEED 5* N	4 N	3 N	2 N	1 N	$\bar{X}$
Using a variety of learning activities	13	9	14	10	7	3.20
Sequence of instructional units	11	11	19	7	4	3.28
Length and complexity of reading assignments	11	12	20	7	2	3.37
Techniques for encouraging learning	12	14	14	6	6	3.32
Helping the learner achieve success	12	10	18	7	5	3.26
Applying positive reinforcement	13	9	20	5	5	3.32
Facilitating independent study	9	10	15	7	11	2.92
Rewarding performance in learning	8	9	15	11	9	2.86
Getting the learner involved	12	10	12	10	8	3.09

*Not all topics total 53 because some participants did not respond to all topics.

TABLE IX

MEAN RESPONSES TO TOPICS RELATING TO REVISING A COURSE

TOPICS	DEGREE OF NEED 5* N	4 N	3 N	2 N	1 N	$\bar{X}$
Procedures for course revision	30	8	11	4	0	4.20
Reviewing pamphlets for revision	20	16	11	4	0	3.86
Correcting errors in pamphlets	22	13	10	6	1	3.86
Updating pamphlets	21	15	9	6	1	3.86
Use of error tickler file	16	13	13	8	2	3.56
Identifying unnecessary material	14	20	9	5	4	3.60
Determine what information should be added, removed, or changed	24	15	7	3	3	3.96

*Not all topics total 53 because some participants did not respond to all topics.

Developing End-of-Course Tests (EOCT)

According to the data in Table X, three of the 12 topics relating to End-of-Course Tests were in the high-mean group. Respondents gave the highest rating of this category to "developing/selecting test items to test objectives," which had a mean of 4.18. The next highest ratings were for "rules for writing test items" and "planning the end-of-course test," which had means of 4.01 and 3.94, respectively. None of the topics were in the low-mean group; however, "adjusting scores on the EOCT," had the lowest mean (3.26) for this category.

Developing the Servicewide Exam (SWE)

The data relating to developing the Servicewide Exam are presented in Table XI. This category includes 20 training topics, seven of which were in the high-mean group for the study. The five highest ratings were for "selecting items" (4.11), "writing new items" (mean, 4.39), "item writing principles" (mean, 4.15), "interpreting item statistics" (mean, 4.00), and "item banking" (mean, 4.13). The 4.39 rating was the highest mean of the entire study. Only one of the topics, "numbering the item deck," was in the low-mean group, with a mean of 3.07.

TABLE X

MEAN RESPONSES TO TOPICS RELATING TO DEVELOPING END-OF-COURSE TESTS

TOPICS	DEGREE OF NEED 5* N	4 N	3 N	2 N	1 N	$\bar{X}$
Planning end-of-course test development	20	18	8	6	1	3.94
Developing/selecting test items to test objectives	24	18	8	3	0	4.18
Rules for writing test items	23	14	10	6	0	4.01
Organizing the end-of-course test	14	13	19	5	2	3.60
Preparing the revised roadmap	19	14	13	4	2	3.77
Proofreading the end-of-course test	20	9	16	5	3	3.71
Preparing the score key	15	12	14	10	2	3.52
Reviewing printed end-of-course test booklets	13	10	20	9	1	3.47
Crediting end-of-course test items	17	13	15	5	3	3.67
Adjusting scores on the end-of-course test	13	10	14	10	6	3.26
Answering student inquiries	14	14	17	7	1	3.62
Interpreting item statistics	17	18	10	4	4	3.75

*Not all topics total 53 because some participants did not respond to all topics.

TABLE XI

MEAN RESPONSES TO TOPICS RELATING TO DEVELOPING THE SERVICEWIDE EXAM

TOPICS	DEGREE OF NEED 5* N	4 N	3 N	2 N	1 N	$\bar{X}$
Planning SWE development strategy	21	17	7	4	3	3.86
Completing the strategy worksheet	14	15	13	6	5	3.50
Selecting items to be reused/revised/replaced	23	16	11	3	0	4.11
Writing new items	28	19	5	1	0	4.39
Item writing principles	24	18	8	2	0	4.15
Interpreting item statistics	24	14	8	5	2	4.00
Using illustrations	15	6	23	7	2	3.47
Organizing the SWE into sections	14	11	18	8	2	3.50
Typing exam items on item cards	14	7	14	13	5	3.22
Numbering the item deck	11	9	13	13	7	3.07
Preparing the revised roadmap	19	14	12	7	1	3.81
Preparing the modified item deck	19	11	14	9	0	3.75

TABLE XI (Continued)

TOPICS	DEGREE OF NEED 5* N	4 N	3 N	2 N	1 N	$\bar{X}$
Preparing section title sheets	15	8	13	14	3	3.33
Proofreading the SWE	22	11	11	8	1	3.84
Reviewing the camera-ready copy	21	8	15	8	1	3.75
Preparing the answer key	19	7	13	11	3	3.52
Reviewing the printed exam booklets	18	8	14	11	2	3.54
Performing the prescoring audit	17	10	15	9	2	3.58
Item banking	30	10	6	5	1	4.13
Answering student inquiries	13	15	15	9	1	3.56

*Not all topics total 53 because some participants did not respond to all topics

Comparison of Subject-Matter Specialists' Responses to the Responses of Other Respondents

Since the subject-matter specialists were the largest group of the study, their responses were compared to the responses of the other respondents (Table XII). A mean of means was computed for each category of tasks for preparing correspondence courses and tests. In all categories, the means for other respondents were higher than the means for the subject-matter specialists. Both groups gave the lowest ratings to the categories "motivating students" and "using illustrations," but the groups disagreed on the highest ratings. The subject-matter specialists gave the highest rating (3.60) to "developing the servicewide exam," whereas the other respondents gave the highest rating (4.30) to "revising a course."

The study showed a significant difference in the ratings for the following categories:

Categories	Subject-Matter Specialists	Other Respondents	Difference
Revising a course	3.59	4.30	.71
Motivating students	2.99	3.52	.53
Planning a correspondence course	3.12	3.58	.46

TABLE XII

COMPARISON OF SUBJECT-MATTER SPECIALISTS' RESPONSES TO THE RESPONSES OF OTHER RESPONDENTS (MEAN OF MEANS)

Category of Tasks for Preparing Correspondence Courses & Tests	Subject-Matter Specialists $\bar{X}$	Other Respondents $\bar{X}$	Difference
Planning a correspondence course	3.12	3.58	.46
Developing the curriculum outline	3.52	3.84	.32
Developing pamphlets	3.39	3.72	.33
Developing self-quizzes	3.52	3.93	.41
Using illustrations	3.10	3.52	.42
Word-processing and printing	3.46	3.80	.34
Motivating students	2.99	3.52	.53
Revising a course	3.59	4.30	.71
Developing end-of-course tests	3.57	3.96	.39
Developing the servicewide exam	3.60	3.90	.30

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter concludes the study by presenting a summary and discussion in three parts. A summary of the study is presented first, followed by the conclusions based on the findings of the study. The remainder of the chapter discusses recommendations for practice and further research.

Summary

The problem of the study was related to perceptions of the training needs of new subject-matter specialists at the U. S. Coast Guard Institute regarding the preparation of correspondence courses and tests. The subject-matter specialists are technical experts sent to the USCG Institute for a three- to four-year period to prepare correspondence courses and tests. The purpose of the research was to identify the training needed by new subject-matter specialists to enable them to prepare correspondence courses and tests.

The population for the study included personnel of the Course and Examination Division at the U. S. Coast Guard

Institute as follows: subject-matter specialists, branch chiefs, warrant officers, education specialists, and writer-editors.

A questionnaire was the instrument used to gather the data for the study. The questionnaire listed 10 major categories of tasks/topics for preparing correspondence courses and tests. Each category was broken down into topics. Participants rated each topic according to degree of need for training.

The data relating to the categories of tasks and related topics were analyzed, compiled, and presented in Chapter IV. The data included the frequency of responses and a mean response for each topic. The means were divided into three groups:

$$> 3.80 = \text{high mean},$$
$$3.20 - 3.80 = \text{middle},$$
$$< 3.20 = \text{low mean}.$$

The responses of the subject-matter specialists were compared to the responses of the other respondents by computing a mean of means for each major category of tasks for preparing correspondence courses and tests. The two groups gave the lowest ratings to the same categories, but disagreed on the highest ratings. The other respondents' ratings were significantly higher than the subject-matter specialists' ratings for the following categories: "revising a course," "motivating students," and "planning a correspondence course."

Conclusions

The conclusions drawn from the study were as follows:

1. The subject-matter specialists, as a group, felt that the greatest need for training is in the following categories (in the order shown):
    a. Developing the servicewide examination,
    b. Revising a correspondence course,
    c. Developing the end-of-course test,
    d. Developing self-quizzes and developing the curriculum outline.
2. Other respondents felt that the greatest need for training is in the following categories (in the order shown):
    a. Revising a correspondence course,
    b. Developing the end-of-course test,
    c. Developing self-quizzes,
    d. Developing the servicewide examination.
3. Individual training topics which were given the highest overall ratings of the study were:
    a. Writing new servicewide exam items (4.39),
    b. Pamphlet development procedures (4.35),
    c. Procedures for developing the curriculum outline (4.23),
    d. Procedures for course revision (4.20),
    e. Developing/selecting end-of-course test items to test objectives (4.18),
    f. Servicewide exam item writing principles (4.15).

3. When compared with the subject-matter specialists' responses, the responses of other respondents were significantly higher in the following categories: revising a course, motivating students, and planning a correspondence course.

Recommendations

The following recommendations for practice are based on the results of the study. It is recommended that:

1. Greater emphasis be placed on training in the topics which were in the high-mean group.

2. Less emphasis be placed on training in the topics which were in the low-mean group.

3. The findings of this study be shared with the U. S. Coast Guard Institute, Course and Examination Division.

Further Study

Additional studies could be conducted to identify or collect the following information:

1. A follow-up study to show the results of changes in the training emphasis.

2. A study to determine why respondents' ratings were significantly higher than subject-matter specialists' ratings for certain categories.

3. A study to show perceived training needs relating to the best methods of presenting the training and the best time to present training.

4. A study comparing the Institute's training program to similar programs in other branches of the military.

5. A study comparing the Institute's correspondence course program with the programs of other correspondence course institutions, including colleges, universities, and privately owned institutions.

A SELECTED BIBLIOGRAPHY

Anderson, William A., and Rebecca C. Henry. "Using Needs Assessment Strategies for Effective Workshops." Journal of Instructional Development, Vol. 4, No. 1 (Fall, 1980), pp. 19-22.

Briggs, Leslie J., and Walter W. Wager. Handbook of Procedures for the Design of Instruction. (2nd ed.) New Jersey: Education Technology Publications, 1981.

Dick, Walter, and Lou M. Carey. "Needs Assessment and Instructional Design." Educational Technology, Vol. XVII, No. 11 (November, 1977), pp. 53-59.

Fowler, William A. "From Theory to Practice." Course Development Handbook. Washington, D.C.: National Home Study Council, 1980.

Frenzel, Louis E. "Approaching Course Development." Course Development Handbook. Washington, D.C.: National Home Study Council, 1980.

Good, Carter V. Dictionary of Education. Ed. Carter V. Good. New York: McGraw-Hill Book Company, Inc., 1973.

Gronlund, Norman E. Constructing Achievement Tests. (2nd ed.) New Jersey: Prentice-Hall, Inc., 1977.

Hughes, Lee. "Managing Text Readability." Course Development Handbook. Washington, D.C.: National Home Study Council, 1980.

Kimpston, Richard D., and William S. Stockton. "Needs Assessment: A Problem of Priorities." Educational Technology, Vol. XIX, No. 6 (June, 1979), pp. 16-21.

Knowles, Malcolm S. The Modern Practice of Adult Education. Chicago: Association Press, Follett Publishing Company, 1980.

Lambert, Michael P. "Naming the Parts." Course Development Handbook. Washington, D.C.: National Home Study Council, 1980.

Mager, Robert F. Preparing Instructional Objectives. (2nd ed.) California: Fearon Publishers, Inc., 1975.

Mager, Robert F., and Peter Pipe. Criterion-Referenced Instruction: Analysis, Design, and Implementation. (2nd ed.) California: Mager Associates, Inc., 1979.

Poteet, G. Howard. There's a School in Your Mailbox. Washington, D.C.: McGraw-Hill Continuing Education Center, 1979.

Roberts, Wesley K., Kathleen M. Daubek, and John C Johnston. "The Use of Needs Assessment Techniques for Establishing Training Programs Responsive to the U.S. Army's Role." Educational Technology, Vol. XVII, No. 11 (November, 1977), pp. 41-42.

Trimby, Madeline J. "Needs Assessment Models: A Comparison." Educational Technology, Vol. XIX, No. 12 (December, 1979), pp. 24-28.

U.S. Air Force Publication 50-58, Volumes I and III, Handbook for Designers of Instructional Systems. Washington, D.C.: U.S. Government Printing Office, 1978.

USCG Institute Organization Manual (CGI-M5400). Oklahoma City, Oklahoma: U.S. Coast Guard Institute, 1983.

U.S. Coast Guard History (CG-213). Washington, D.C.: U.S. Government Printing Office, 1973.

U.S. Coast Guard Institute Correspondence Course Manual (MD1501) (3rd ed.). Oklahoma City, Oklahoma: U.S. Coast Guard Institute, 1982.

U.S. Coast Guard Institute Course Development Manual. Oklahoma City, Oklahoma: U.S. Coast Guard Institute, 1981.

U.S. Coast Guard Servicewide Examination Development Manual. Oklahoma City, Oklahoma: U.S. Coast Guard Institute, 1982.

Witkin, Bell Ruth. "Needs Assessment Kits, Models, and Tools." Educational Technology, Vol. XVII, No. 11 (November, 1977), pp. 5-17.

APPENDIX

COURSE AND EXAM DIVISION

TRAINING NEEDS SURVEY

The purpose of this questionnaire is to assess the training needs of new subject-matter specialists assigned to the Coast Guard Institute. The results will be useful in designing training for subject-matter specialists.

Part I

A. What is your position at the Coast Guard Institute?

1. Branch Chief . . . . . _____
2. Warrant Officer . . . . . _____
3. Subject-Matter Specialist . . . . . _____
4. Education Specialist . . . . . _____
5. Writer-Editor . . . . . _____

B. How long have you worked at the Coast Guard Institute? _____

Part II

Indicate your opinion of the training needs of new subject-matter specialists by circling one of the numbers at the right of each task/topic listed below. The numbers range from "5" (great need for training) to "1" (little need for training).

TASK/TOPIC	TRAINING NEED				
	GREAT NEED				LITTLE NEED
A. PLANNING A CORRESPONDENCE COURSE					
1. Determine what job tasks/topics to cover in a course	5	4	3	2	1
2. Determine the emphasis to give each task/topic	5	4	3	2	1
3. Select appropriate Enlisted Qualifications to be covered	5	4	3	2	1

Part II

(Continued)

Indicate your opinion of the training needs of new subject-matter specialists by circling one of the numbers at the right of each task/topic listed below. The numbers range from "5" (great need for training) to "1" (little need for training).

TASK/TOPIC	TRAINING NEED				
	GREAT NEED				LITTLE NEED
A. PLANNING A CORRESPONDENCE COURSE (continued)					
4. List and analyze job tasks	5	4	3	2	1
5. Obtain source material	5	4	3	2	1
6. Obtain a copyright release	5	4	3	2	1
7. Describe the characteristics of the target population	5	4	3	2	1
8. Other: (specify)					
_____					
B. DEVELOPING THE CURRICULUM OUTLINE					
1. Procdures for developing the curriculum outline	5	4	3	2	1
2. Purpose of the curriculum outline	5	4	3	2	1
3. Components of the curriculum outline	5	4	3	2	1
4. Writing performance objectives	5	4	3	2	1
5. Characteristics of performance objectives	5	4	3	2	1
6. Evaluating objectives	5	4	3	2	1
7. Scheduled review of the curriculum outline	5	4	3	2	1
8. Other: (specify)					
_____					

Part II

(Continued)

Indicate your opinion of the training needs of new subject-matter specialists by circling one of the numbers at the right of each task/topic listed below. The numbers range from "5" (great need for training) to "1" (little need for training).

TASK/TOPIC	TRAINING NEED				
	GREAT NEED				LITTLE NEED
C. DEVELOPING PAMPHLETS					
1. Pamphlet development procedures	5	4	3	2	1
2. Outlining	5	4	3	2	1
3. Standard text breakdowns	5	4	3	2	1
4. Preparing the rough draft	5	4	3	2	1
5. Required pages for each pamphlet	5	4	3	2	1
6. Methods of organizing text	5	4	3	2	1
7. Characteristics of a good first reading assignment	5	4	3	2	1
8. Writing principles:					
a. Word usage	5	4	3	2	1
b. Gender related wording	5	4	3	2	1
c. Use of new terms	5	4	3	2	1
d. Grammar	5	4	3	2	1
e. Spelling and punctuation	5	4	3	2	1
f. Sentence structure	5	4	3	2	1
g. Paragraph development	5	4	3	2	1
h. Writing introductions, summaries, & transitions	5	4	3	2	1
i. Purposeful repetition	5	4	3	2	1
9. Managing text readability	5	4	3	2	1
10. Use of readability formulas	5	4	3	2	1
11. Review of printed pamphlets	5	4	3	2	1
12. Other: (specify)					
_____					
D. DEVELOPING SELF-QUIZZES					
1. Requirements for self-quizzes	5	4	3	2	1
2. Length and complexity of quizzes	5	4	3	2	1
3. Writing various types of items	5	4	3	2	1
4. Other: (Specify)					
_____					

Part II

(Continued)

Indicate your opinion of the training needs of new subject-matter specialists by circling one of the numbers at the right of each task/topic listed below. The numbers range from "5" (great need for training) to "1" (little need for training).

TASK/TOPIC	TRAINING NEED (GREAT NEED)				(LITTLE NEED)
E. USING ILLUSTRATIONS					
1. Effective use of graphics	5	4	3	2	1
2. Appropriate illustrations/ graphics	5	4	3	2	1
3. Quality of illustrations	5	4	3	2	1
4. Placement in text	5	4	3	2	1
5. Numbering illustrations	5	4	3	2	1
6. Other: (Specify)					
_____					
F. WORD-PROCESSING AND PRINTING					
1. Rough copy requirements	5	4	3	2	1
2. Proofreading procedures and requirements	5	4	3	2	1
3. Pamphlet printing (styles and procedures)	5	4	3	2	1
4. Other: (specify)					
_____					
G. MOTIVATING STUDENTS					
1. Using a variety of learning activities for different learning styles	5	4	3	2	1
2. Best structure and sequence of instructional units	5	4	3	2	1
3. Appropriate length and complexity of reading assignments	5	4	3	2	1
4. Techniques for encouraging learning	5	4	3	2	1
5. Helping the learner succeed	5	4	3	2	1
6. Using positive reinforcement	5	4	3	2	1
7. Facilitating independent study	5	4	3	2	1
8. Building self-confidence	5	4	3	2	1
9. Getting the learner involved	5	4	3	2	1
10. Other: (specify)					
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Part II

(Continued)

Indicate your opinion of the training needs of new subject-matter specialists by circling one of the numbers at the right of each task/topic listed below. The numbers range from "5" (great need for training) to "1" (little need for training).

TASK/TOPIC	TRAINING NEED				
	GREAT NEED				LITTLE NEED
H. REVISING A COURSE					
1. Procedures for course revision	5	4	3	2	1
2. Reviewing pamphlets for revision	5	4	3	2	1
3. Correcting errors in pamphlets	5	4	3	2	1
4. Updating pamphlets	5	4	3	2	1
5. Use of error tickler file	5	4	3	2	1
6. Identifying unnecessary material	5	4	3	2	1
7. Determine what information should be added,removed, or changed	5	4	3	2	1
8. Other: (specify)					
I. DEVELOPING END-OF-COURSE TESTS (EOCT)					
1. Planning EOCT development	5	4	3	2	1
2. Developing/selecting test items to test objectives	5	4	3	2	1
3. Rules for writing EOCT items	5	4	3	2	1
4. Organizing the EOCT into sections	5	4	3	2	1
5. Preparing the revised roadmap	5	4	3	2	1
6. Proofreading the EOCT	5	4	3	2	1
7. Preparing the score key	5	4	3	2	1
8. Reviewing printed EOCT booklets	5	4	3	2	1
9. Crediting EOCT items	5	4	3	2	1
10. Adjusting scores on the EOCT	5	4	3	2	1
11. Answering student inquiries	5	4	3	2	1
12. Interpreting item statistics	5	4	3	2	1
13. Other: (specify)					

Part II

(Continued)

Indicate your opinion of the training needs of new subject-matter specialists by circling one of the numbers at the right of each task/topic listed below. The numbers range from "5" (great need for training) to "1" (little need for training).

TASK/TOPIC	TRAINING NEED				
J. DEVELOPING THE SERVICEWIDE EXAM (SWE)	GREAT NEED				LITTLE NEED
1. Planning SWE development strategy	5	4	3	2	1
2. Completing the strategy worksheet	5	4	3	2	1
3. Selecting items to be reused/ revised/replaced	5	4	3	2	1
4. Writing new items	5	4	3	2	1
5. Item writing principles	5	4	3	2	1
6. Interpreting item statistics	5	4	3	2	1
7. Using illustrations	5	4	3	2	1
8. Organizing the SWE into sections	5	4	3	2	1
9. Typing the exam items on cards	5	4	3	2	1
10. Numbering the deck	5	4	3	2	1
11. Preparing the revised roadmap	5	4	3	2	1
12. Preparing the modified item deck	5	4	3	2	1
13. Preparing section title sheets	5	4	3	2	1
14. Proofreading the SWE	5	4	3	2	1
15. Reviewing the camera copy	5	4	3	2	1
16. Preparing the answer key	5	4	3	2	1
17. Reviewing printed exam booklets	5	4	3	2	1
18. Performing the prescoring audit	5	4	3	2	1
19. Item banking	5	4	3	2	1
20. Answer student inquiries	5	4	3	2	1
21. Other: (specify)					

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VITA 2

Darla J. Burns

Candidate for the Degree of

Master of Science

Thesis: PERCEIVED TRAINING NEEDS OF SUBJECT-MATTER SPECIALISTS AT THE U.S. COAST GUARD INSTITUTE

Major field: Occupational and Adult Education

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Professional Experience: Teacher of business education, Yearington High School, Yearington, Nevada, 1957-1958; teacher of business education and social studies, Tularosa High School, Tularosa, New Mexico, 1958-1959; teacher of high school English, Cloudcroft High School, Cloudcroft, New Mexico, 1960-1961; written examinations editorial assistant, Flight Standards Technical Division, FAA Aeroanutical Center, 1962-1969; Education Specialist, U.S. Coast Guard Institute, Oklahoma City, Oklahoma, 1970 - present.

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