

A SURVEY OF STAFF AND FACULTY ATTITUDES
TOWARD IN-SERVICE TRAINING AT THE
UNITED STATES ARMY MISSILE AND
MUNITIONS CENTER AND SCHOOL,
REDSTONE ARSENAL, ALABAMA

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PREFACE

This study was to provide knowledge at the command level in respect to staff and faculty attitudes toward in-service training programs. The primary objective was to determine the attitudes of the staff and faculty toward in-service training programs at the United States Army Missile and Munitions Center and School.

Although this study was a personal endeavor on the part of the writer, it truly was dependent upon pertinent contributions from many other persons. An honest assessment of the circumstances revealed, in fact, that the effort would have been impossible without these contributions.

The author wishes to express his appreciation to his major adviser, Dr. William Davis, for his significant suggestions and helpful inputs concerning the proposal and organization of the study, and for his guidance and assistance throughout this study. Appreciation is also expressed to the Committee Chairman, Dr. Kenneth St. Clair, for his guidance and assistance since March, 1974, and to other committee members, Dr. William E. Segall, Dr. Ivan Chapman, Dr. John D. Hampton, and Dr. Thomas A. Karman, for their invaluable assistance in the preparation of the final manuscript.

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To his wife, Sarah, for her love, compassion, and understanding and to our children, Deanna, Darryl, and Harvey, Jr., for the love understanding, and encouragement they afforded me in order that this dream might reach fruition, a special tribute is extended.

This study is dedicated to the men and women of our armed forces, civilian as well as military, who provide their fellow service members training and education second to that of no other nation.

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CHAPTER I

INTRODUCTION TO THE STUDY

Rationale for the Study

Background

The United States Army Missile and Munitions Center and School (USAMMCS), located at Redstone Arsenal, Alabama, is a member of a nationwide school system that operates under the direction of the United States Army Training and Doctrine Command (TRADOC). The schools' primary function is to train military students in the technical-vocational skills of missile and munitions maintenance and supply. The institution has grown over the years to keep pace with the increasing importance being attached to advanced technological solutions for military defense operations and the impact that advanced technology has had on the service school curriculum.

The school was organized in June, 1951, as the Guided Missile Division (GMD) of the Ordnance Training Command (OTC) located at Aberdeen Proving Ground, Maryland. The Guided Missile Division was charged with the task of initiating maintenance training in the then comparatively new field of guided missile technology. The Guided Missile Division was moved to Redstone Arsenal, Alabama, in March, 1952, where the school has grown with the advance of technology and assignment of additional missions and where its name has evolved to its current title.

The school is accredited by the Southern Association's Commission on Occupational Education Institutions (COEI) and its growth is characterized by the nature and content of its expanding curriculum. In the expanding scope of the curriculum, a greater variety of subject matter as well as a larger number of courses can be found. From an initial listing of one course for officers and four courses for enlisted men, the school now catalogues approximately 68 courses ranging from one to fifty-two weeks in duration. The school also offers a variety of extension and correspondence courses.

Courses, once highly theoretical and cognitive, are now distinctly job performance oriented. Courses at higher skill levels within a family of military occupational specialities (MOS) to provide selected servicemen advanced training later in their careers are also being offered. Since instruction is no longer restricted to entry level courses, the trend is to discard the older terms of vocational and technical education in favor of career education.

The blend of students from sister services and allied nations creates an international atmosphere at the institution and extends the boundaries of the arena for curriculum activity. The arena has been and continues to be extended in other ways. From an interservice point of view, duplication of Common Basic Electronic Training (COBET) has been eliminated and other areas of commonality are now being investigated. Interservice activity, once confined to courses for enlisted men, has now been extended to include courses for officers.

The Interservice Training All-course Review has the purpose of analyzing comparable training among the training commands of the services to assess the possibility of substituting interservice training

at a single installation, or fewer installations, for training now conducted at several installations.¹

As a result, job, career, and curriculum analyses performed by the school's faculty are seasoned by intra-interservice and international factors.

To keep pace with the expanding scope of subject matter and the extending arena for curriculum activity, the school has adopted and is applying a systems approach for curriculum development called the Interservice Procedures for Instructional Systems Development (IPISD). The model was developed under Contract Number N-61339-73-C0150 between the Center for Educational Technology at the Florida State University, Tallahassee, Florida and the U. S. Army Combat Arms Training Board, Fort Benning Georgia.² The mat d'ordre of the model, instructional technology, is defined by the Center for Educational Technology as the utilization of any knowledge, research, or invention (as applicable) in the facilitation of the human learning process.

The organization with the primary responsibility for staff and faculty training at the school and the one confronted most with the pressure of change is the Directorate of Training Development (DOTD). The curriculum, expanding in scope by the force of advancing technology and intra-interservice factors mark the end of an era where curriculum development could be confined to a single school. The new order to maximize training effectiveness and to minimize costs, as prescribed by

¹Letter, "Interservice Training Review (RCS ATT-01-19)." (Fort Monroe, Virginia: U. S. Army Training and Doctrine Command, 19 April 1974), p. 2.

²U. S. Army, Interservice Procedures for Instructional Systems Development, 5 Vols. (Fort Benning, Georgia: U. S. Army Combat Arms Training Board, 1 August 1975)1:i.

Paragraph 1.4 of the Interservice Procedures for Instructional Systems Development, requires that increasing attention be given to the factors accountability, both for the quality of the school's alumni and for the efficient utilization of resources available to the organization.

Needs Assessments and In-service Programs

It is clear, as evidenced by the adoption and application of the Interservice Procedures for Instructional Systems Development, that management officials at the U. S. Army Missile and Munitions Center and School recognize that the current realities on such as the press at the command level, the decrease in staff and faculty mobility, the complexity of military training issues, and the rapid expansion of the knowledge base all highlight the need for in-service programs for the school staff and faculty. This need has not gone unnoticed: universities, other military service schools, and professional agencies expend increasingly more time and energy upon this phase of the preparation of the staff and faculty. In spite of the diversity and number of in-service programs and the fact that in-service training falls outside the boundary of traditional schooling, a great deal of homogeneity exists among most in-service programs. With the exception of their topics, most in-service programs fall into a handful of distinct categories--workshops, seminars, or conferences-- and exhibit few differences in procedure. This observation seems to support the notion that all individuals or groups have the same preferred style of learning and that this style is known--a notion unsupported by research.

On the other hand, research to date offers precious little information concerning the comparative effectiveness of different instructional procedures or a strategy for matching an individual's preferred style of learning to a particular instructional procedure. Within institutions of learning, the increasingly prevalent response to this problem has been the provision of numerous instructional options from which the learner is permitted to select according to her/his preference, a response which, awaiting the production of a more definitive knowledge base, seems quite appropriate.

Significance of the Study

The writer believes that increased interest in the area of staff and faculty in-service training programs for Army service schools will provide instructional improvement in the subjects and that this interest can be stimulated by this study. By this means, other service schools can improve their staff and faculty in-service programs.

This study can provide information needed at the command level to make managers aware of the importance of a well-planned staff and faculty in-service training program determined by the attitudes of its personnel.

The expanding scope and interest of curriculum development at the U. S. Army Missile and Munitions Center and School clearly indicate that the activity of the Directorate of Training Development at the school has not been made known; the results of this study will provide for efficiency and effectiveness in-service training programs. This study is considered both timely and salient.

Purpose of the Study

The purpose of this study was to provide knowledge at the command level in respect to staff and faculty attitudes toward in-service training programs. This was accomplished through an analysis of relevant literature, the administration of a comprehensive questionnaire, and interviews with selected personnel. Particular attention was given to: (1) organization; (2) administration; (3) job assignments; (4) faculty in-service training programs; and (5) institutional doctrine.

Cost of the Study

The cost of this study was defrayed by the U. S. Army Missile and Munitions Center and School, Redstone Arsenal, Alabama.

Description of the Existing In-service Training Programs

This section shows a basic outline description of the existing in-service training program at the school (MMCS). The program was divided into 10 courses as follows:

1. Basic Methods of Instruction Course
 - a. Length: Self-paced, approximately 80 hours.
 - b. Location: Building 3448, Redstone Arsenal, Alabama.
 - c. Objective: To develop a working knowledge of the methods of instruction and duties of a USAMMCS instructor.
 - d. Description: The course teaches fundamental methods of military instruction. FM 21-6, "Techniques of Military Instruction," is the basic reference. There are programs

on principles of instruction, speech and platform techniques, questioning techniques, selection and use of training aids, and other related subjects. Students make five platform presentations which are criticized by education specialists.

- e. Prerequisites: Must be assigned to the staff and faculty of USAMMCS as an instructor or supervisor of instructors.

2. Counseling and Guidance Course

- a. Length: Twenty hours, four hours per day for five days.
- b. Location: Building 3448, Redstone Arsenal, Alabama.
- c. Objective: To provide training in the counseling of students.
- d. Description: The course teaches instructors and supervisors how to deal with the problems confronting them as counselors of students. Instruction is given on types of counseling, qualities of counselors, desirable results of counseling, preparation for a counseling session, and how to conduct a counseling session.
- e. Prerequisites: Must be staff or faculty personnel who are, or may be involved in counseling students or subordinates.

3. Instructional Systems Development Workshop

- a. Length: Self-paced, approximately 80 hours.
- b. Location: Building 3448, Redstone Arsenal, Alabama.
- c. Objective: To develop a working knowledge of the steps and procedures for applying the instructional systems development process in the development of training courses.

- d. Description: This workshop includes exercises on instructional systems development which consist of the following phases accomplished in sequence:
 - (1) Phase I, Analyze
 - (2) Phase II, Design
 - (3) Phase III, Develop
 - (4) Phase IV, Implement
 - (5) Phase V, Control
 - e. Prerequisite: Must be staff or faculty personnel responsible for developing or supervising the development of training courses.
4. Orientation to Programmed Instruction
- a. Length: Twenty hours, four hours per day for five days.
 - b. Location: Building 3448, Redstone Arsenal, Alabama.
 - c. Objectives: To develop the ability to evaluate instruction and guide personnel in writing programmed instruction.
 - d. Description: The course is based on TRADOC - Regulation 350-54 and MMCS - Regulation 350-23. It consists of 20 hours of instruction and practice in writing programmed instruction. In particular, this course deals with the problems and difficulties incurred by the supervisor in directing his personnel in writing programmed instruction.
5. Programmed Instruction Workshop
- a. Length: Eighty hours, eight hours per day for ten days.
 - b. Location: Building 3448, Redstone Arsenal, Alabama.
 - c. Objective: To provide training in the techniques of organizing material into ordered sequence and writing

programmed instruction texts.

- d. Description: Workshop participants are given instruction and practice in writing instructional objectives and are required to analyze and write short programs on two or more subjects. They are required to validate their programs by administering them to students unfamiliar with the subject matter. Preliminary instruction on preparation of a department text is provided if time permits.
- e. Prerequisites: Must be staff or faculty personnel responsible for writing programmed texts. Will have assigned departmental subjects on which programmed texts are to be written.

6. Documentation Workshop

- a. Length: Twenty hours, four hours per day for five days.
- b. Location: Building 3448, Redstone Arsenal, Alabama.
- c. Objective: To provide training in the writing of lesson plans and tests.
- d. Description: The course is based on TRADOC Regulation - 350-100-1, with MMCS Supplement. It consists of instruction and practice in writing conference and practical exercise lesson plans, and writing written and performance test items.
- e. Prerequisites: Must be qualified instructors who are, or may be involved in course documentation.

7. Media Technology Workshop

- a. Length: Eighty hours, eight hours per day for ten days.
- b. Location: Building 3448, Redstone Arsenal, Alabama.
- c. Objective: This workshop is designed to develop a working knowledge of selection, preproduction, production, post production, and application of media in individualized and small group training programs.
- d. Description: This workshop includes instruction on subject and media selection criteria, audio, television, and film production techniques; equipment operation; and classroom application of automated instruction. The student will be required to develop and produce instructional programs using slide-syne, television, and other equipment and materials.
- e. Prerequisites: Students should have a working knowledge of instructional techniques and a general knowledge of writing and course development techniques.

8. Training Supervisor Course

- a. Length: Twenty hours, four hours per day for five days.
- b. Location: Building 3448, Redstone Arsenal, Alabama.
- c. Objective: To develop a working knowledge of the procedure, techniques, and problems related to supervision of instruction and instructors at the USAMMCS.
- d. Description: This course is comprised of presentations, discussion, and practical exercises relative to the actual problems confronting the supervisor on the job. Each session is designed to allow for maximum exchange

between participants and the instructors. The aim is to help clarify and strengthen USAMMCS supervisory concepts, and to provide opportunities for attendees to discuss problems which affect production and performance in their job environments. Sessions will be conducted on the following subject areas:

- (1) Organization and mission of school elements.
 - (2) Preparation of training plans.
 - (3) Department of the Army Management Review and Improvement Program (DAMRIP).
 - (4) Training Support Resources.
 - (5) Personnel Administration and Supervision.
 - (6) Counseling.
 - (7) Quality control.
- e. Prerequisites: Must be staff or faculty members at the GS-9 level and above and/or the rank of E-6 and above, whose present or contemplated assignments involve supervisory duties.

Two courses recently added to the group are:

9. Skill Qualification Workshop
 - a. Length: Forty hours.
 - b. Objective: To develop techniques for developing skill qualification tests (criterion references, performance based).

10. Techniques of Discussion Leadership
 - a. Length: Twelve hours.
 - b. Objective: Techniques for delivering race appreciation training.

Limitations of the Study

The study was limited to the resources and constraints available to the researcher at the time of this study. More specifically, the study was limited in the following ways:

Limitations as to Geographic Areas--The study was conducted at the United States Army Missile and Munitions Center and School, Redstone Arsenal, Alabama. The results of the study are not generalizable beyond this geographic area.

Limitations as to Population--This study included a random sample of managers, supervisors, curriculum specialists, education specialists, training specialists, instructor team chiefs and instructors from the Directorate of Training and Directorate of Training Development. This sample was selected from a population of both military and civilians. The results of the study are not generalizable beyond this population.

Limitations as to Time--This study is based on the assessed attitudes of the previously mentioned groups in December, 1976 and not for any other time frame.

Limitations as to Content--The study was limited to a needs-assessment survey implemented by means of a comprehensive questionnaire.

Definition of Terms

The following definitions of terms used in the study are provided to facilitate understanding.

Assessment: A judgment of the effectiveness and efficiency of a training system, in terms of measurement and evaluation.

✓ Attitude: A persisting state of a person that influences his choice of action.

✓ Attitude Measure: An instrument designed to gather information about how people feel toward a particular object. This could include liking or disliking subject matter, usefulness of a medium, or opinions about the medium.

Career Education: The planned arrangement for entry-level training to qualify an individual to enter a particular vocation, phase necessary to renew proficiency or to acquire new skills and knowledge as the need arises, plus advanced training to broaden knowledge and professional skills at appropriate points in his career.

Service School: An institution authorized by the Department of Army, Air Force, Navy, or Marine Corps that conducts formal instruction for members of the armed forces. The U. S. Army Missile and Munitions Center and School is classified as a technical-vocational service school.

Training: The teaching of job skills. It can take a number of forms such as self-teaching, exportable packages, training manuals, individual learning packages, Formal on-the-Job Training (FOJT) or group training.

Organization of the Study

The report of the study is organized into five chapters. Chapter I has presented the rationale, significance, problem, purpose, cost, description, methodology, limitations, definitions, and organization of the study.

Chapter II presents a review of literature that pertains to the study.

Chapter III presents the development and utilization of data gathering instruments.

Chapter IV presents a report of the findings and an analysis of the data.

Chapter V presents a summary of the study, conclusions reached as a result of the study and recommendations, followed by the Selected Bibliography and Appendixes.

CHAPTER II

REVIEW OF THE LITERATURE

This chapter contains a review of the literature relative to the assessment of the attitudes of the staff and faculty toward an in-service training program at the military service school. For ease of presentation, this chapter is presented in the following order: (1) the conceptual base which provided the framework for the design of the in-service program, (2) a survey of assessment techniques for in-service training programs, and (3) a summary.

This review deals with selective studies whose results bring into focus what seems to be some of the most educationally significant factors important to the assessment of an in-service program for the staff and faculty members in military services schools.

In-service Education

In the area of in-service education, the literature reviewed reveals that the responsibility for this function rests primarily with teacher educators and supervisors. Hill (1963) declared that "teacher educators will have responsibilities in providing additional education or arranging for education and technical courses. This may be done in short courses, in summer school, or in the school year."

Often times, supervisors, representing the state boards of education, work in conjunction with educators to provide in-service

training. However, in a recent study conducted by Jones (1975), it was found that vocational teachers expressed the desire for fellow teachers with expertise to provide portions of in-service training. So again all three groups must work cooperatively in this facet of teacher preparation.

The next section of this chapter will review what the literature has to say about training and development and its value in relation to the study.

Training and Development

The 1958 Government Employees Training Act from the U. S. Congress defines training as:

The process of providing for and making available to an employee and placing or enrolling such employee in a planned, prepared, and coordinated program, course, curriculum, subject, system, or routine of instruction or education, in scientific, professional, technical, mechanical, fiscal, administrative, or other fields which are or will be directly related to the performance by such employee of official duties for the government, in order to increase the knowledge, proficiency, ability, skill, and qualifications of such employee in performance of official duties (p. 1).

This definition applies equally to business, industrial and military training and provides a broad description of what training has involved traditionally.

Before discussing specific types of training and development such as staff and faculty in-service training, it is necessary to review the evolution of training.

Historical Background of Training

During the middle ages, training was on a person-to-person basis and ended with performance of a prescribed task or the production of a "masterpiece" which demonstrated that the apprentice had learned his craft well.

With the arrival of the Industrial Revolution in the 1800's, the individual craftsman was threatened by mass production of crude machines driven by steam or water power. It was an age of simple machines, and there was plenty of labor available. Little attention was given to working conditions; management was dominant; the margin of profit was so great that there was no need for refined organization. Labor was in ready supply, and the main inducement to productivity was fear of unemployment. Training was a simple matter, the worker achieved proficiency for mere survival (Tracey, 1974). The Industrial Revolution speeded the decline of the craftsman because the skills needed by workers were few, simple, and easily learned.

Formal training programs originated in the late nineteenth century with the corporation schools. Clark and Sloan (Tracey, 1974) stated that at least five corporation schools were established between 1872 and 1900 and that by 1916 some 60,000 boys were enrolled. The schools were established so that industry could meet its need for skilled labor at a time when vocational education programs were too new and too few to meet the demand.

As technological advancement made industrial development more and more complex, management and administration entered a new critical phase of their development, thus accounting for the contemporary

emphasis on management problems and management training.

This need for trained managers became apparent around 1901. The ideas of Frederick Taylor reflected the need for management that was capable of coping with this emergent technological complexity. His scientific management movement was intended to increase productivity and worker motivation through "mutuality of interest."

Following Taylor's ideas, the human relations movement evolved from the research at the Hawthorne Plant of Western Electric. This study conducted by F. J. Roethlisberger and William S. Dickson applied theory, concepts, and research methodology from the behavioral sciences to training in organizations. Their work revealed that the behavioral sciences were essential to the understanding of organizations and advanced the nation of training (Roethlisberger and Dickson, 1939).

The human relations movement began to fade around 1960. Evolving from its basic idea, a new movement called Industrial Humanism emerged. This movement advocated that democracy was infinitely more desirable and beneficial than bureaucracy. The industrial humanist's program included changing management's mind as to what was good administration of people. Their theoretical foundations in the applied sciences suggested that the human relations and industrial movements were one. The behavioral sciences approach became a logical extension for achieving a more rational means of the utilization of human resources (Scott and Mitchell, 1972).

The Current State of Training

With all of the movements and new ideas influencing it, training in business, industry and the military is still practically impossible to define and describe. Ginzberg and Hepburn (1972) stated, "We know very little about the total training structure in the United States because it is so diffuse that nobody has an overview of it" (p. 2).

In an effort to learn more about training in the United States today, Tracey (1974), through a review of literature on training, sought to gather specific information about the scope of training. He was particularly interested in five areas: (1) number of companies that conduct training; (2) number of staff assigned to training activities; (3) number of courses or training programs offered; (4) number of personnel trained; and (5) training costs (salaries, materials, aids and equipment, maintenance and repair of facilities and equipment, and total costs). His search yielded 250 citations and 95 Journal articles, none of which contained any of the data needed.

In 1968, Sommer (1969) completed a pilot study of a survey on training in business and industry. His analysis of data resulted in the following findings:

1. Almost 35 per cent of the firms with training programs had more than 2,000 employees; only 6.5 per cent had 100 or fewer employees. Only medium-sized and large (over 500 employees) firms had any significant amount of training.
2. Most firms with training programs were in manufacturing or service industries; relatively few were in construction.

3. Only a small proportion of the firms kept records on trainees and training that could be readily transferred to a questionnaire form. Most of those were larger firms. Records frequently contained gross estimates for the company as a whole, rather than detailed data.
4. Generally, respondents expressed no regret over a lack of records, which indicate that they felt little need for such records and that the effort to maintain records could not be justified by costs and benefits.
5. A uniform terminology for occupations and training programs was lacking.
6. Of the 842 specific training programs identified, data for fewer than one in four could be readily transferred to a questionnaire.
7. Data on turnover and upward mobility of trainees were generally unavailable.
8. There were readily transferable records for entry-level on-the-job training for only 41 programs and for on-the-job upgrading for only 29 programs.
9. Respondents refused to provide data for 32 classroom programs.
10. Detailed records on the costs of training were almost nonexistent (pp. 23-24).

Data on the number and type of training programs offered by business, industry and military are scarce. Probably the most widely accepted and used training activity in military is training for individual workers and management personnel. These programs may take many forms. Tracey (1974) lists common types of training and development activities.

Individual Training and Development:

1. Company-wide training programs include:
 Orientation courses for new employees,
 Tuition aid or remission programs,
 Voluntary general education programs,
 Safety training,
 Human relations training,
 Enterprise functions and process training,
 Correspondence study.
2. Manufacturing and Production training programs include:
 Apprenticeship training,
 Formal entry-level semi-skills and skills programs,
 Formal advanced level skills and technical training,
 On-the-job training, both entry-level and advanced,
 Cooperative work-study programs between company and school.
3. Engineering and scientific training programs include:
 Non-degree, in-house programs,
 On-site degree programs for advanced degrees,
 Part-time campus degree programs,
 Engineering or scientific management programs.
4. Marketing and sales training programs include:
 Sales training,
 Sales engineering training,
 Service engineering training,
 Customer training,
 Dealer training.

Management Training and Development:

1. Presupervisory training programs focus on the development of supervisory, human relations, and leadership skills. These include:
 Role and responsibilities of a supervisor,
 Work planning and scheduling,
 Delegation,
 Communication,
 Interviewing,
 Employee training,
 Performance rating,
 Safety,
 Company policy,
 Relations with unions and organized labor,
 Grievance procedures,
 Practical psychology.

2. Middle management development programs focus on management theory, decision-making, and problem solving. They include:
 - Assessment centers,
 - Case problems,
 - Critical incidents,
 - Discussion,
 - Simulation,
 - In-basket exercises,
 - Business games,
 - Rotational job assignments,
 - Committee participation,
 - Seminars and conferences,
 - College and university courses.

3. Executive development programs focus on on-the-job development. They include:
 - Participation in instructed discussion,
 - Simulation,
 - Role-playing,
 - Business games,
 - Grid seminars,
 - Out-of-enterprise seminars,
 - Sensitivity-training sessions,
 - College and university courses (pp. 36-38).

The Bureau of National Affairs (1969) conducted a survey to determine the extent to which business and industry are using programs to meet the training needs of employees and first-line supervisory management. The survey did not include programs related to job performance and management development. Data were obtained from 286 executives. The findings were as follows:

Three-fourths of the companies conducted both formal and informal training programs for rank-and file employees. Approximately one-fifth of the programs are completely informal, the remainder are completely formal.

Seven out of ten executives reported that training is given on company time only. When it is not, nearly two-tenths of the companies pay employees for after-hours training.

Over one-third of the firms conduct formal apprenticeship programs. Approximately one-fifth of the companies operate training programs the JOBS program of the National Alliance of Businessmen. Over one-tenth of the companies operate training programs under the MDTA.

Retraining programs for employees displaced are conducted by 15 per cent of the companies. Approximately 30 per cent have systematic upgrading programs to prepare first-line supervisors and rank-and-file employees for job advancement.

The cost of training and development in business is extremely difficult to determine because most companies carry training costs as sub-accounts of major accounts. Some consider training as an expense; whereas others absorb it in the cost of the product. Many companies do not identify training costs at all. Machlup (1962) estimated the training costs for the newly hired employee as \$3,054 billion for 1958. Decarlo and Robinson (1966) referred to a report by the Chase Manhattan Bank in 1962 in which the costs of training in business and industry were estimated at \$17 billion per year.

It was reported in the Manpower Report to President (1972) that the total training cost per employee in large firms, including direct costs and lost productivity, was \$700 per year (\$200 in direct costs of training and \$500 in indirect costs). The annual average number of employees of private, nonagricultural, nongovernment establishment was 57,836,000 in 1971 (Litterer, 1973). Assuming that two out of three of those employees received some training and assuming that the cost of the training averaged \$700, an estimate of the total expenditure for training and development in business and industry would be in the

area of 27 billion dollars.

Training has evolved from simple person-to-person apprenticeship during the Middle Ages to a multi-billion dollar expenditure involving not only skills training but personal development of the individual worker and management.

The rapid social change in every area--the impact of minority groups, the role of women, the meaning of work, changing values, attitudes and motivation, and technological change--forces training organizations to adopt new structures and systems and to find better means of utilizing human resources. A prime responsibility of the training function is to communicate to all levels of employees the sweeping changes that are taking place in values, attitudes, behavior, culture, and technology.

These changes create demands for effective sources of training. The government sees training as a means of solving critical social and economic problems. Management sees training as a drain on enterprise resources with few returns on investment; women and the disadvantaged see training as a too-often denied right and the means of improving their status. Employees sees it as a means of advancing their careers.

Training personnel are responsible for planning and conducting programs to meet the changing requirements and needs of individuals, organizations, and society at large. Training programs should effectively produce the needed results in a way that is thorough and satisfying to employee and management. And training programs should be efficient in that they increase benefits (Drucker, 1974).

The next section of this chapter will review what the literature has to say about the conceptual base and its value in relation to the study.

The Conceptual Base

The Instructional Process (FM 21-6)

The instructional process (Figure 1) is the basic procedure for teaching a single lesson objective or an entire phase of a subject. It is a three-stage process of presentation by the instructor, application by the student, and evaluation by the instructor. Within this framework the instructor applies specific instructional methods and techniques for achieving the most effective teaching-learning situation.

1. Presentation. The student gains the concept of the subject by completing a study assignment, by listening to an explanation, by participating in a conference, or by watching a demonstration. For most military subjects, effective presentation will consist of a combination of these activities: study by the student, and telling and showing by the instructor.

2. Application. The student is given an opportunity to apply the new concepts gained in the presentation stage. The application stage is the most important. All learning requires conscious and successful response by the student. In planning and conducting instruction, the instructor should remember that it is not so much what the instructor does or says that teaches, but rather what he causes his student to do.

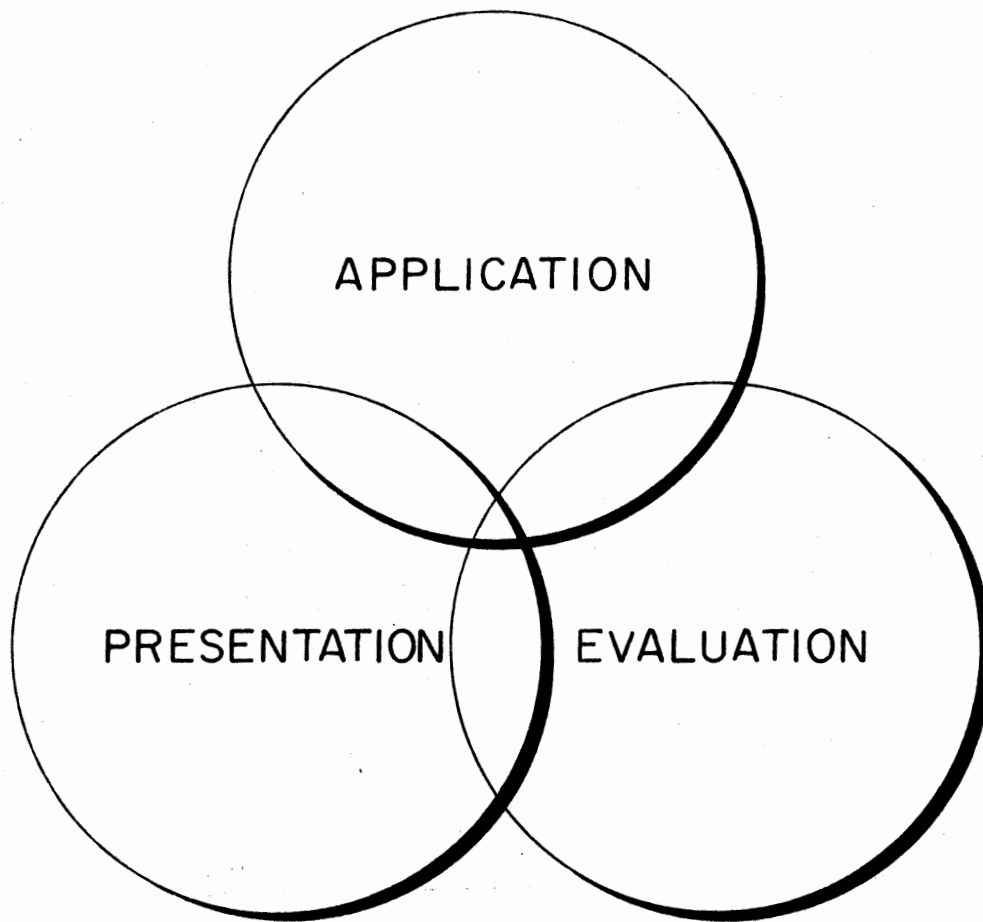


Figure 1. The Instructional Process

3. Evaluation. The instructor checks student responses to keep them informed of their progress and to prevent them from practicing incorrect responses. Evaluation includes formal testing at the end of a period or phase of instruction; however, the most important type of evaluation is informal and is concurrent with the presentation and application stages of the instructional process. Such evaluation is accomplished by oral questions to the class following the explanation or demonstration of a teaching point, by close observation of students during practical work to detect errors and make on-the-spot corrections, and by checking student understanding of previous related instruction.

Principles of Instruction (FM 21-6)

The principles of instruction describe conditions and requirements for effective teaching and, thus, effective learning (Figure 2). They should guide the instructor in using the instructional process and in selecting and using specific methods and techniques of instruction. These principles are:

1. Motivation. The student must want to learn before he can be taught. To develop in the student the desire to learn and to sustain this desire so that he will pay attention to the presentation and try to follow directions in the practical work is a major requirement for effective instruction. The following are some of the techniques that instructors can use to motivate students:

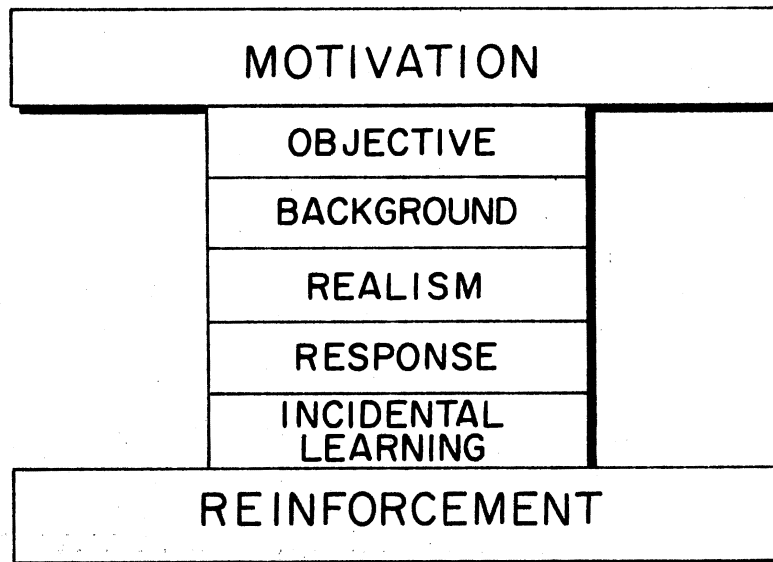


Figure 2. The Principles of Instructions

- a. Show a need.
- b. Develop an intent to learn.
- c. Maintain interest.
- d. Encourage early success.
- e. Give recognition and credit.
- f. Stimulate and emotional responses.
- g. Use competition.
- h. Use rewards and punishment.

2. Objective. Learning is more efficient when the student knows exactly what he is to learn and what is expected of him. At the beginning of each period of instruction, instructors should set forth the goals that the student is to achieve--exactly what the student should be able to do as a result of the instruction. Further, the student should be told how each lesson fits into the overall program of instruction and how the course of instruction prepares him for his job.

3. Response. A student learns only what he does or responds to. This may take many forms--listening, observing, reading, recalling, taking notes, reciting, writing, practicing, or solving problems. The instructional process of presentation-application-evaluation centers on the instructor's applying this principle of instruction. Every period of instruction should be planned to require the student to respond frequently in a form that can be observed and evaluated by the instructor. "Practice makes perfect" only when the student practices correctly.

4. Reinforcement. Efficient learning requires that the student know whether his responses are right or wrong.
5. Realism. The instructor should insure that learning activities in training relate closely to the situation in actual practice.
6. Background. Learning is based on experience; new experiences are interpreted on the basis of past experiences.
7. Incidental Learning. Learning is complete only when the student has acquired the attitudes, values, appreciations, interests, ideals, and habits of conduct that will enable him to apply correctly the things learned. This statement is of such importance in military training that it should be considered a fundamental principle for the guidance of instructors. The military instructor must not only concern himself with the teaching of skills and information that contribute directly to his lesson objectives; he must also be alert to the development of correct appreciations and attitudes, which determine how effectively the soldier will apply the knowledge and abilities he has acquired in the training program. This principle emphasizes the fact that the instructor's real, ultimate task is to train men--not merely to teach subject matter.

Instructional Design (Designers of Instructional Systems)

AFP 50-58 defines an instructional design as a deliberate and orderly process for planning and developing instructional programs which insure that personnel are given the knowledges, skills, and attitudes essential for successful job performance. Success depends on a description and an analysis of the tasks necessary for performing the job, criterion objectives and tests clearly stated before

instruction begins, evaluation procedures to determine whether or not objectives have been reached, and methods for revising the process on empirical data.

The Instructional System Development

(ISI) Process

Instructional System Development is defined in Instructional System Development, Air Force Manual 50-2 as "a deliberate and orderly process for planning and developing instructional programs which insure that personnel are taught the knowledges, skills, and attitudes essential for successful job performance." Here are the major ISI activities, with definitions:

1. Determine Job Performance Requirements (JPRS). The process of determining the tasks required of the human component, and the standard of performance. This process applies to all types of "jobs." It results in a statement of all human activities (skills, knowledges, and attitudes) required for successful performance.

2. Determine Training Requirements (TRS). The process of determining the changes needed in skills, knowledges, and attitudes of personnel, so they can perform a job. These changes, when added to the entering repertoire of abilities, must meet the JPRS.

3. Determine Criterion Objectives. The process of specifying the objectives which the student must meet to satisfy the TRS. Criterion objectives specify precisely what behavior is to be exhibited, the conditions under which behavior will be accomplished, and the minimum standard of acceptable performance.

4. Develop Criterion--Referenced Tests. The process of developing and administering tests which directly measure the criterion objectives. The survey test is administered to samples of prospective students. The purpose is to verify which skills and knowledges to include in the course of instruction. Criterion-referenced tests (course criterion tests and diagnostic tests) are also developed to determine if the behaviors in the criterion objectives have been acquired.

5. Select Media/Methods. The process of selecting appropriate media and methods for each block of instructional objectives. Selection is based on:

- a. Practical constraints (such as financial considerations).
- b. Instructional nature of the objectives (certain behaviors may be important in training, but not on the job).
- c. Presentation mode implied by the objectives (visual, auditory, etc.).
- d. Type of learning involved (for example, simple visual discrimination; chain of skilled performances).
- e. Best instructional sequence for the objectives.

6. Develop Instructional Materials. The process of developing and integrating the actual materials which make up the instructional regimen.

7. Validate and Revise Instructional Materials. The process by which each unit of instruction is tested (validated) as it is developed. This process insures that criterion objectives are satisfied. First, materials are tested on several individuals and revised as necessary. Then, they are tried out on small groups of students, carefully sampled from the potential student population. Final revisions are made.

8. Conduct Instructional Program. The process of implementing and administering the instructional program. This includes training of instructors and scheduling as well as the actual conduct of the program.

9. Evaluate Instructional Program. The process of determining the extent to which graduates of the instructional program satisfy the performance requirements in the job environment. Detailed records of graduate performance are kept, and changes to the instructional program are recommended as necessary.

Figure 3 shows the AFM 50-2 ISD Model. A brief description of the fine-phases of the Instructional Systems Development Model as presented in TRADOC Pamphlet 350-30, is shown in Appendix A.

The next section of this chapter will review what the literature has to say about assessment techniques and its values in relation to the study.

Assessment Techniques

The self-perception theory of Daryl Bem (1970) appears to have a relationship to this study. His theory predicts that attitudes follow behavior. Bem states that Leon Festinger's discussion of cognitive dissonance is also important to the hypothesis that behavior causes attitudes because it is the only consistency theory which deals explicitly with the consistencies and inconsistencies between an individual's behavior and his beliefs or attitudes. Most of the recent experimental evidence which supports this hypothesis has come from the testing of Festinger's theory.

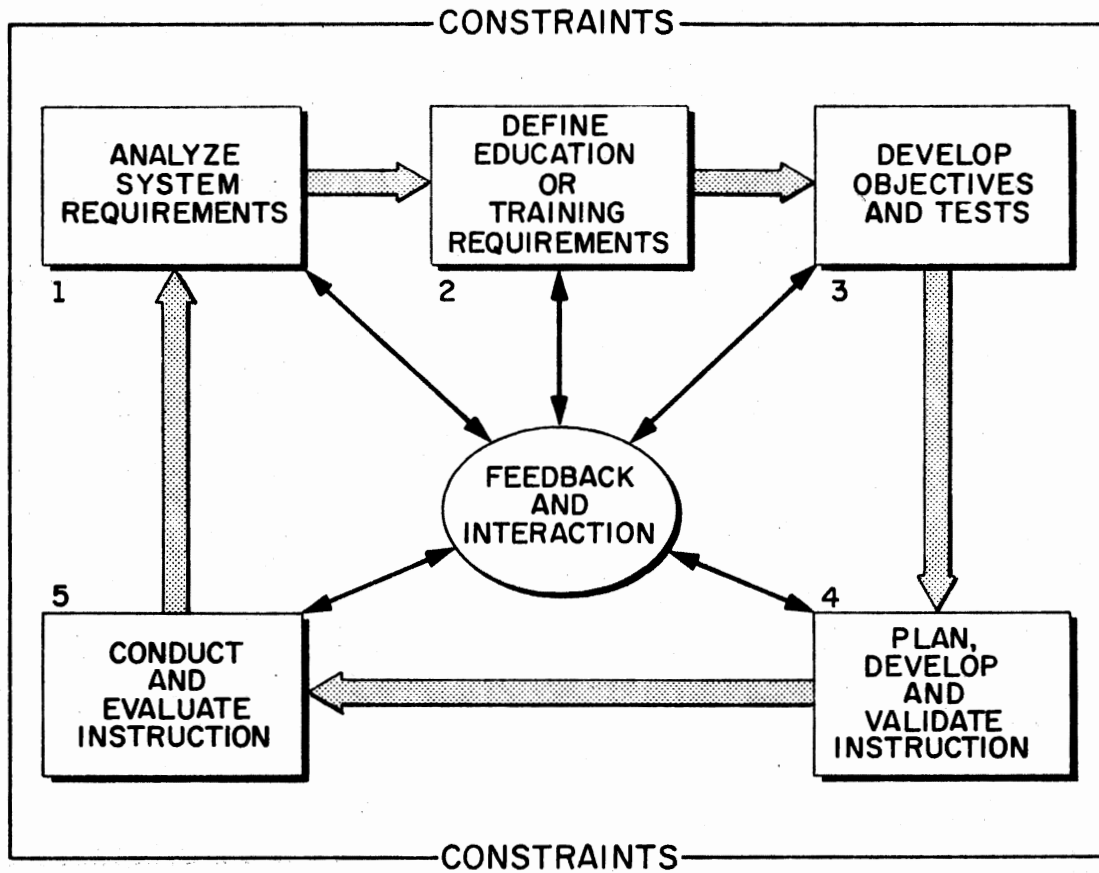


Figure 3. Instructional System Development

Lieberman (1956) conducted one of the first studies which confirmed the cause-and-effect sequence of attitudinal change resulting from role change. His study involved the comparison of attitude changes that occurred among labor union workers who were promoted to foremen and union stewards before and after the promotion. The longitudinal study also included changes in attitude consistent with those of labor union workers when the foremen were demoted back to the rank-and-file labor position.

Another study which confirmed the cause-and-effect relationship of behavior and attitude was Peggigrew (1969).

∫ A study by Raymond Johnson (1969) attempted to identify an evaluation system which would be effective in evaluating teacher training programs at a minimal cost. The research design involved a pre-test, mid-test, and post-test. The subjects in the study were randomly assigned to the control group and the experimental group. No significant differences were found between the pre-test and post-test.

Other studies reviewed that attempted to assess changes in verbal behavior as a result of an in-service treatment included Adenika (1970), Baty (1970), Skrocki (1970), and McFarland (1970). Each of these studies found no statistically significant differences between the experimental group and the control group.

A study by Adams (1970) attempted to assess changes in classroom teacher behavior and involved the Flanders Interaction Analysis procedure which includes ratings on the classroom behavior of teachers such as: (1) accepts feeling; (2) praises or encourages; (3) accepts or uses ideas of students; (4) asks questions; (5) lecturing; (6) giving

directions; (7) criticizing or justifying authority; (8) student-talk response; (9) student-talk initiation, and (10) silence or confusion. A study by Davis (1975) attempted to assess the staff development preferences of school principals. A questionnaire was developed based on the belief that the design of an instructional system is primarily a decision-making process whereby choices are made among various alternatives to reach a desired and pre-selected objective. Although Campbell and Barnes (1969) have stated that there may be at least 100,000 micro-elements in the instructional act; according to Hilgard and Bower (1966) stated the obvious instruction is the attempt to facilitate learning. According to a generic definition appearing in

Theories of Learning by Hilgard and Bower:

Learning is the process by which an activity originates or is changed through reacting to an activity; originates or is changed through reacting to an encountered situation, provided that the characteristic of the change in activity cannot be explained on the basis of native response tendencies, maturation, or temporary states of the organism (e.g., fatigue, drugs, etc.).

Hence, instruction can also be viewed as the mindful structuring of a situation to be encountered. As such, the major elements of the instructional system must be the customary situational variables: Who, What, When, Where. The fine major areas of decision cited in the text corresponds to these situational variables

According to Hilgard and Bower, the major decisions which must be made in the design of an instructional system can be categorized into five broad areas:

1. Learner(s)
2. Teacher(s) or trainer(s)
3. Time structure
4. Physical environment
5. Instructional strategies and materials.

According to Davis (1975), these areas are seen to be highly interdependent in the sense that the choice of a particular option in one area strongly affects the decisions which must then be made in all other areas. He said, each of the areas is taken to be multifaceted--that is, comprised of a number of significant dimensions. For clarification, he identified each area of a few representative dimensions.

Davis said the Learner area contains all those characteristics of the learner, or group of learners, which have relevance to the instructional process. Included in these concerns would be the number of learners comprising the instructional group, their state of instructional readiness, their experimental background, and their preferred style of learning. The Teacher/Trainer area is similarly composed, except that the focus is placed upon the characteristics of the teacher and his/her preferred teaching style, strengths and weaknesses. All variables dealing with time are subscribed under Time Structure. Representative concerns include the time of day, week, and month at which instruction takes place as well as how long each session lasts, how frequently each session meets, and the duration of each separate instructional activity taking place within a particular session. A host of physical characteristics comprises the Physical Environment area. In addition to the selection of the place at which it is to be offered, such concerns as the distance of the site from the learners, the physical dimensions of the meeting place, the seating arrangement, temperature, and humidity are relevant to this area. Finally, the Instructional Strategies and Materials area pertains to the mode by which instruction is to be offered and the availability of supporting materials and equipment. Among the more common modes of instruction are lecture, discussion, recitation,

simulation, role-playing, case study, and supervised reading. A mode such as computer-assisted instruction highlights the extreme dependence which the choice of an instructional mode has on the availability of instructional materials and equipment and, therefore, the inclusion of such supporting devices in this area.

To complete this overview of the design of an instructional system and to clarify the rationale upon which the Staff and Faculty Attitudes Toward In-service Training Questionnaire was based, the factors which constrain or direct the decision-making within the above defined areas should be considered. According to Davis (1975), these five factors are seen as particularly crucial. In brief, these are:

1. The Topic(s) and Objective(s) of Instruction. Undoubtedly, the single most important factors affecting the design of an instructional system, in-service or otherwise, are the topic to be addressed and the learning outcomes to be attained.

2. The Motivation of Intended Participants. Attention must be given to constructing the instructional system so that it (a) attracts intended participants and (b) motivates participants to learn.

3. The Availability of Resources. Obviously, the range of feasible options is constrained by the material, financial, and human resources which can be devoted to the instructional system.

4. Instructional Requisites. Guided by the principles of educational psychology, research, craft wisdom, or intuition the instructional designer perceived certain combinations of the instructional components as more tenable than others. For example, most would agree--although it has not been "proven" in a strict sense--

that it is not optimal to instruct many learners gathered in one place through the open discussion mode.

5. Evaluation. In this age of accountability and measurement, it is considered "poor form" to design a program which cannot be evaluated in terms of its effectiveness. It is probable that certain aspects of an instructional system will be selected on the basis of the evaluation methodology to be used.

In summary, Davis Model in Figure 4, presented the instructional process in the above paragraphs.

Based upon this rationale, the Staff and Faculty Attitudes Toward In-service Training questionnaire was designed to ascertain the preferences held by prospective program participants regarding the several areas seen to be crucial to the design of an in-service program. Special emphasis was placed upon gathering information relevant to those aspects of an in-service program which are under the control of the program designer.

From another perspective, however, the questionnaire can be seen as gathering information relevant to only one of the five crucial decision-making areas recorded above the Learner area. Accordingly, the respondents used the Staff and Faculty Attitudes Toward In-service Training instrument to reveal their preferred style of learning. Although, as mentioned earlier, there are several factors which affect the decision-making of the program designer, surely the preferences of the learners should not be ignored.

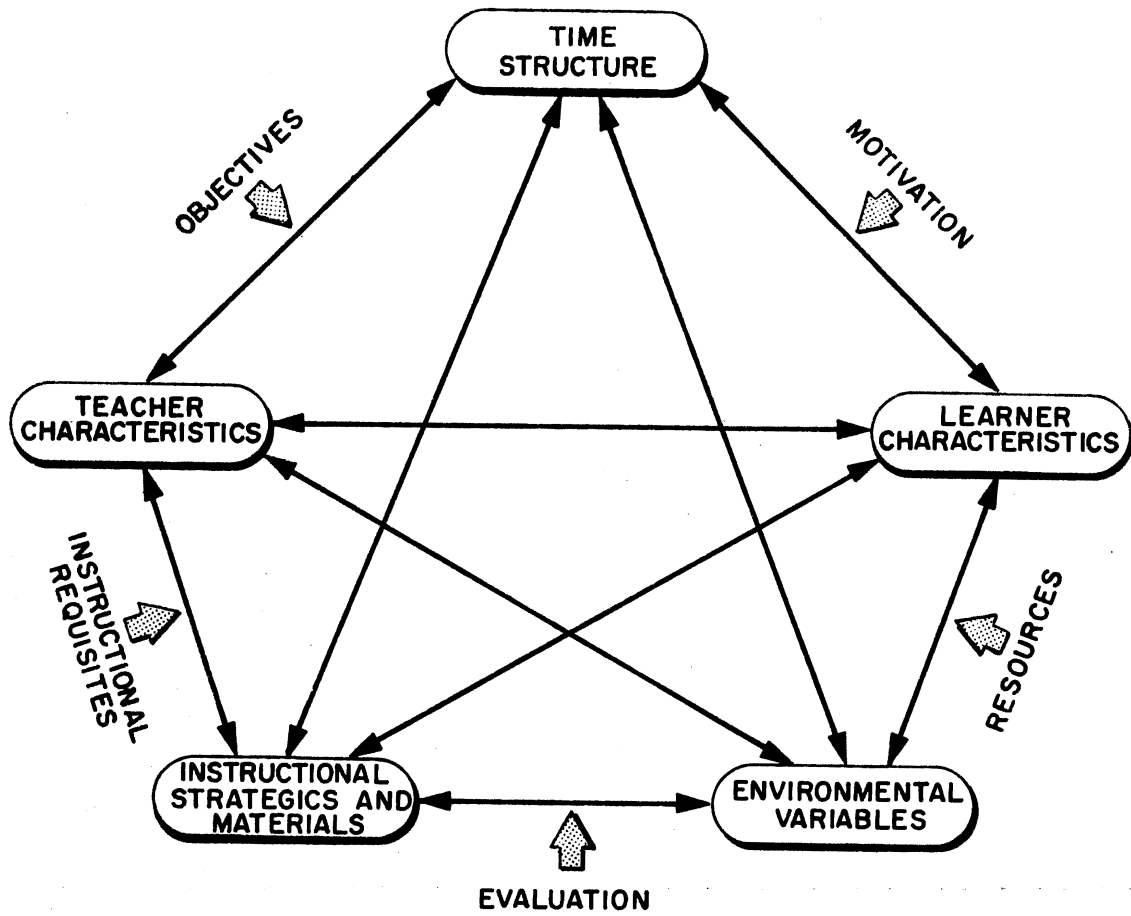


Figure 4. A Model of Instructional System Design

The Staff and Faculty Attitudes Toward In-service Training questionnaire appears as Appendix B; apart from items used to solicit demographic information, the instrument is composed of 139 items. These items are either multiple-choice or Likert-type in nature. Of course, this means that the preferences displayed by the respondents are entirely dependent upon the options presented, a fact which should be kept well in mind when the results of the survey are reviewed.

Summary

An attempt was made in this chapter to indicate the relationship of completed studies to this investigation through the rationale, theoretical framework from which the assessment techniques were developed, and other studies which utilized at least one aspect of teacher behavior.

From a review of several studies, it appeared that in-service training programs have typically been evaluated on the basis of a single aspect of teacher behavior. No study was reviewed that investigated both verbal and overt behavior that could be related to the effectiveness of an in-service program.

CHAPTER III

METHODOLOGY

The major purpose of this study was to assess the staff and faculty attitudes toward an in-service training program at the United States Army Missile and Munitions Center and School (USAMMCS).

This chapter will be devoted to reporting the methodology used in attempting to accomplish the purpose of this study and will be divided into the following sections: (1) Sample, (2) Instrumentation, (3) Data Collection, and (4) Statistical Treatment.

The school specialists engaged in the staff and faculty development program were interviewed by the investigator to determine areas considered appropriate for inclusion in a survey to determine the staff and faculty attitudes, background, interests and experience in the development of in-service programs. Information gathered from specialists was used to draft a needs assessment survey. The survey developed by Davis (1975) was resubmitted to the specialists and Commandant for comment on format, content, and readability. A review of the comments and revision of the draft survey resulted in the final document (Appendix B).

Sample

The subjects employed in this study were selected from the MMCS Table of Distribution and Allowances (TDA). A review of a computer printout of data relative to personnel assigned to duty positions in the school (MMCS) revealed that there were 670 persons involved in the instructional process who could in some measure have an influence on staff and faculty training programs. The population of the survey consisted of 551 instructors, 72 supervisors, and 47 staff specialists in other words, all of the education and training personnel associated with the instruction function.

The investigator met with each first line supervisor and furnished one survey questionnaire for each individual assigned to the supervisor's organization. The supervisor was asked to distribute personally one questionnaire to each individual on duty under his supervision and to request that it be completed and returned personally to him.

The subjects in this study were also selected using the following criteria:

1. They must be employed as staff or faculty members at the school (USAMMCS).
2. They must be employed to provide resident and non-resident education and training for selected military and civilian students, and provide services as outlined in the U. S. Army Training and Doctrine Command (TRADOC) Regulation 10-41.

3. The staff and faculty also provides reimbursable training for selected civilian law enforcement personnel in the area of Explosive Ordnance Disposal (EOD) for the Department of Justice, Law Enforcement Assistance Administration.

A needs-assessment survey was conducted with managers, supervisors, curriculum specialists, education specialists, training specialists, instructor team chiefs and instructors, as appropriate to the situation, concurrently with the collection and review of the literature.

A total of one hundred seventy-five (175) were chosen for random sample, but only one hundred thirty-seven (137) responded to the needs-assessment survey, which gave a 78 per cent response. The sample was consisted of 89.3 per cent males and 10.7 per cent females. It also consisted of 76.5 per cent Caucasian, 9.8 per cent Black, 8 per cent Native American (Indian), 8 per cent Spanish surnamed and 12 per cent other (specify).

Instrumentation

The survey was used to gather data regarding eight areas of concern: (1) to determine the attitudes of the staff and faculty toward in-service training programs; (2) to determine their attitudes toward the environment for in-service programs; (3) to determine their attitudes towards factors that have hindered participation in in-service programs; (4) to determine their attitudes toward methods for scheduling in-service programs; (5) to determine their attitudes toward location for in-service programs; (6) to determine their attitudes toward topics

of interest for the programs; (7) to determine their attitudes toward activities for the programs; and (8) to determine their attitudes toward reward and motivation for in-service training programs.

The press at the command level, the decrease in staff and faculty mobility, the complexity of training issues, and the rapid expansion of the knowledge base highlight the need for in-service training programs at military service schools. In spite of the diversity, in-service training programs fall outside the boundary of traditional military training.

The research found today offers very little information concerning the attitudes of staff and faculty at military service schools toward different instructional procedures or a strategy for matching an individual's preferred style of learning to a particular instructional procedure. Within the various institutions of learning, the increasingly prevalent response to this problem has been the provision of numerous instructional options from which the learner was permitted to select according to his/her preference, a response which, awaiting the production of a more definite knowledge base, seems quite appropriate. Unfortunately, these attitudes are infrequently collected; and this failure has been promoted by the adoption of a rather narrow conception of the purpose of needs assessment typically the first step in the design of an in-service program.

A Needs-Assessment Survey

The first step in this investigation was to identify an instrument that would accurately determine the staff and faculty attitudes toward in-service training programs. A review of the literature revealed that an appropriate standardized instrument was not available. Discussions with William Davis and Kenneth St. Clair resulted in the identification of the Needs Assessment Survey used by Davis (1975) for "In-service Staff Development Programs for School Principals." This instrument was adopted with only minor modification, to meet the needs at the United States Army Missile and Munitions Center and School. The instrument was used to check the staff and faculty attitudes toward in-service training programs.

Davis (1975) found that with relatively few exceptions, most needs-assessment surveys of questionnaires have dealt with (1) level of interest or (2) number of topics that generate the most enthusiasm for holding a program. Thus, most needs-assessments were topic-oriented; consequently, little beyond the topic of concern was ascertained. Decisions as to all other details of the program were made on the basis of distinctly limited knowledge as to what the prospective participants would find most attractive and/or educationally profitable. While a program's intended participants may have a greater desire to learn more concerning the chosen topics, they may have little desire to attend the type of program which has been structured and/or the program may not be totally effective in instructing its participants.

The needs-assessment survey used in this study attempted to deliver information to the command level about the staff and faculty attitudes toward in-service training programs at the school (MMCS). The information found will be used to assist the decision makers at the Command level in the decision-making effort involved in designing an in-service training program. The survey gathered information related to the staff and faculty attitudes toward: (1) environment, (2) factors that have hindered participation, (3) scheduling, (4) location, (5) activities, (6) topics, and (7) reward and motivation. The survey instrument may be found in Appendix B.

Data Collection

A Needs-Assessment Survey was administered to one hundred seventy-five (175) staff and faculty members, both military and civilians. The survey was administered on December 28, 29, 30, and 31, 1976. The answer sheets were collected on January 4, 5, 6, and 7, 1977.

Due to the purpose of this study, the results of the study are not generalizable beyond the actual respondents sampled: one hundred thirty-seven (137) staff and faculty members at the U. S. Army Missile and Munitions Center and School, Redstone Arsenal, Alabama. The data of the survey are not presented so much to guide action as to portray the attitudes toward the nature, scope and usefulness of information which was made available to the designer of an in-service training program. Following the presentation of the results of this data, a model in-service training program will be designed in compliance to the preferences of the one hundred thirty-seven (137) or 78 per cent of the staff and faculty that responded to the survey.

Statistical Treatment

The instruments used in collecting data from the staff and faculty were identical. This provided the basis for identifying the staff and faculty attitudes toward in-service training programs. The data collected were compiled and simple descriptive statistics were used to interpret the data. The writer used simple descriptive statistics (frequencies and percentages) because the results of the study are not generalized beyond the actual respondents sampled: one hundred thirty (137) staff and faculty members at the U. S. Army Missile and Munitions Center and School, Redstone Arsenal, Alabama. The results of the survey were incorporated into tables in order to analyze the findings and determine the extent to which the objectives of the study have been achieved.

Reliability and Validity of the Questionnaire

The following steps were taken to insure an acceptable degree of validity:

1. Davis established the content validity of the instrument by allowing a panel of ten professors, principals and staff development specialists to review it to insure that the items were not ambiguous. Items were also checked for relevance and comprehensiveness.
2. Davis established the face validity of the instrument by presenting the instrument to ten professional educators in educational psychology, higher education and educational administration for critique to determine the degree to which the instrument measured the major dimensions of the model.

3. Davis also pilot-tested the instrument with 60 principles in Oklahoma and 24 principals in the Akron, Ohio, School District. The findings from the pilot studies were found to be in agreement with commonly published reports of general preferences of the group in regard to in-service programs (William J. Davis, personal correspondence, 1975).
4. The author of this study investigated the content and face validity of the instrument by use of the jury technique. A jury of experts in the field of military training which consisted of Colonel E. A. Rudd, Commandant, Colonel D. S. Hanline, Assistant Commandant, Colonel J. E. Land, Director of Training, Dr. William E. May, Chief of Staff and Faculty Development, Dr. William S. Jenkins, Director of Evaluation, Dr. John M. Gullick, Director of Training Development. All panelists are currently on duty at Redstone Arsenal. The panel of judges recommended that forty four topics be added to Section C of the questionnaire related to the needs of the military. The panel also recommended that Section E (personal data) be eliminated from the questionnaire because requesting the information potentially violated the Privacy Act. The needs-assessment survey was adopted after the recommended changes.

The reliability of the instrument was not assessed in this study because the following assumptions were made:

1. The participants responded to the questionnaire in honesty.
2. The needs-assessment survey was an appropriate way of describing the staff and faculty attitudes toward inservice training

programs.

3. The returned questionnaire was suitable for data interpretation.
4. The results of the study are not generalized beyond the actual respondents sampled. One hundred thirty-seven staff and faculty members at the U. S. Army Missile and Munitions Center and School, Redstone Arsenal, Alabama.

Chapter IV presents the findings from the Needs-Assessment Survey administered to the staff and faculty at the U. S. Army Missile and Munitions Center and School, Redstone Arsenal, Alabama.

CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

The purpose of this chapter is to analyze and present data relative to the research question stated in Chapter I. The data for this study were obtained through a needs-assessment survey. The survey consisted of (1) attitudes toward the climate of receptivity; (2) attitudes toward factors which have hindered participation; (3) attitudes toward scheduling; (4) attitudes toward site location; (5) attitudes toward learning activities; (6) attitudes toward topics, and (7) attitudes toward reward and motivation of in-service training programs. While the number of participants that were willing to cooperate in the study exceeded the number to be used, the final number of participants was one hundred thirty seven (137).

Attitudes Toward the Climate of Receptivity

Before an in-service training program is designed and offered, the interest level of prospective participants should be determined. If they are not interested, then efforts may be better expended on learning why this condition exists and altering the climate of receptivity. Although one could hope that through offering an excellent in-service training program this climate may change, it must be remembered that for this to occur the attitudes toward the program must be excellent in the eyes of the participants; too, they may enter the

program with negative attitudes.

Attitudes Toward MMCS In-Service
Training Programs

With regard to the survey, 65 per cent of the staff and faculty declared that the school (MMCS) provided training and development programs for all personnel on a fairly regular basis. Approximately 77 per cent declared that the school maintained a staff that is responsible for providing in-service training programs. The results of the survey are shown in Table I.

TABLE I
ATTITUDES TOWARD IN-SERVICE TRAINING

Questions ^a	Response ^b	
	Yes	No
A1	87 (64.925)	47 (35.00)
A3	103 (77.444)	30 (22.556)

^a Questions appear in Appendix B.

^b Numbers in parentheses reflect percentages.

Interest in In-Service Training Programs

With regard to the survey, 56 per cent of the participants declared that they had high interest in attending in-service training programs, while 28 per cent stated they had medium interest. Only 11 per cent declared low interest and five per cent were not interested at all. This level of interest was somewhat substantiated by the fact that only 32 per cent of the participants had attended at least one in-service training program during the last year and that 41 per cent had attended none during the same period. Thus, approximately, 98 per cent of the participants declared other (specify) as the reason for not attending any in-service training programs. The actual pool of possible participants for a particular in-service program, of course, depends upon the topic and design of the particular program.

Along the same lines, 71 per cent of the respondents said they were willing to devote more than ten (10) days each fiscal year to in-service training programs, 19 per cent were willing to devote six to ten days, however, 37 per cent of the respondents spent no time at all last year. Thirty-one per cent spent more than 10 days last year. Moreover, 64 per cent of the respondents indicated that within the last two years there was a particular in-service training program which they would have liked to attend but could not or did not attend. Revealed in Table II are the results of this portion of the survey.

Given the relatively high level of interest in attending in-service training programs, it is pertinent to investigate what factors precluded more widespread participation.

TABLE II
INTEREST IN IN-SERVICE TRAINING PROGRAMS

Questions ^a	Response ^b					
	High	Medium	Low	Not Interested		
B1	76 (55.882)	38 (27.941)	15 (11.029)	7 (5.147)		
	2 Days	3 to 5 Days	6 to 10 Days	More than 10 Days	No Days	
B2	2 (1.471)	7 (5.147)	26 (19.118)	96 (70.588)	5 (3.676)	
B3	2 (1.471)	10 (7.353)	33 (24.265)	79 (58.088)	12 (8.824)	
B7	10 (7.463)	21 (15.328)	12 (8.955)	41 (30.597)	50 (37.313)	
	None	One	Two	Three	Four	More than Four
B9	55(41.045)	43(32.090)	25(18.657)	7(5.224)	1(0.746)	3(3.23)
		Yes		No		
B10		43(31.852)		92(68.148)		
B12		85(64.394)		47(35.606)		

^a Questions appear in Appendix B.

^b Number in parentheses reflect percentages.

Attitudes Toward Factors Which Have Hindered Participation

The survey showed that of the 68 per cent of the participants who stated that they did not attend as many in-service programs as they would have liked to have attended last year, 98 per cent attributed this occurrence to other (specify) reasons). One per cent felt that their job responsibilities would not permit any additional absences, while less than one per cent could not locate a program of interest.

These findings were substantiated by the responses of 137 participants, 64 per cent who failed to attend a particular in-service program of interest. Thus, according to the participants, attitudes toward the in-service training programs have been a major obstacle to their widespread participation. Naturally, this was mediated by the fact that the programs themselves must be of interest.

✓ Attitudes Toward Scheduling of In-Service Programs

The survey showed that 95 per cent of the respondents preferred that in-service programs be scheduled at other times (specify), 4.4 per cent preferred during the fiscal year, and only 0.7 per cent preferred that programs be held during summer vacation. January, February, April, and May were identified as the best, or most convenient, months for the staff and faculty to attend. June, July, and December were cited as the least convenient times. Moreover, 88 per cent of the respondents preferred that the programs be held during the work day, whereas 10 per cent preferred after working hours.

If these preferences were to be accommodated, the availability of released time becomes a crucial concern. In this regard, 45 per cent of the respondents estimated that they could obtain at least three to five days, 30 per cent estimated that they could obtain two days, and 14 per cent estimated that they could obtain only one day of released time per year which could be devoted to their in-service training. These figures were in line with the gross amount of time they are willing to devote to in-service training programs. It may well be possible that if the staff and faculty perceived that additional released time was available they might be willing to devote more time to their career development.

In addition to gathering attitudes toward when a program was scheduled it was relevant to ascertain the preferred duration of the program. In general, an in-service training program can take one of two forms: (1) it may be intensive, involving only one gathering of the participants and lasting for one or more days, or (2) it may be continuing, consisting of a series of gatherings meeting on a somewhat regularly scheduled basis. Fifty per cent of the participants preferred intensive programs. Furthermore, 38 per cent of the respondents indicated an intensive program should last no longer than three to five days, 25 per cent, six to ten days, and 22 per cent felt it should last more than 10 days. On the other hand, if a program was offered on a continuing basis, 46 per cent preferred the program be held on consecutive days or nights, 40 per cent preferred weekly, and 10 per cent preferred bi-weekly. Revealed in Table III are the results of this portion of the survey.

TABLE III
ATTITUDES TOWARD SCHEDULING OF IN-SERVICE PROGRAMS

Questions ²	Response ^b					
	On Weekends		Working Day		After Working Hours	
D2	2(1.460)		121(88.321)		14(10.219)	
	Consecutive Days or Nights		Weekly	Bi-Weekly	Monthly	
D5	63(46.324)		55(40.441)	14(10.294)	4(2.941)	
	5 Miles	10 Miles	20 Miles	50 Miles	100 Miles	200 Miles
D6	19(13.869)	41(29.927)	61(44.526)	10(7.299)	2(1.460)	4(2.920)
	1 Day	2 Days	3 to 5 Days	6 to 10 Days	10 Days+	None
D7	5(3.676)	13(9.559)	53(38.971)	34(25.000)	30(22.059)	1(0.735)

^aQuestions appear in Appendix B

^bNumbers in parentheses reflect percentages.

Attitudes Toward Location of the Programs' Site

The survey revealed that closely connected to the scheduling and duration of an in-service program was the selection of a site for holding the program. Since time was a valuable commodity to the staff and faculty, travel time should be cut to a minimum, unless an additional traveling distance brought extra benefit to the program.

In this regard the survey showed that 83 per cent of the respondents preferred that an in-service program of three days duration be held within easy commuting distance, and 44 per cent considered a one-way distance of 20 miles to be within easy commuting distance, and 30 per cent considered a one-way distance of 10 miles to be within easy commuting distance. However, 17 per cent of the staff and faculty preferred that such a program be held in a distant city known for its tourist facilities.

Whether the program site was located near or far the respondents felt that an attractive location was more than an inconsequential feature of an in-service program. The most frequently preferred site for housing a program was school within easy commuting distance (42 per cent). This choice was followed by a nearby university (33 per cent), a nearby convention facility (8 per cent), and an attractive city at some distance from home (9 per cent).

Thus, it appears that the wide majority of the staff and faculty surveyed prefer that in-service programs be held locally; however, a small but substantial number prefer that some travel be incorporated in the design of in-service training programs.

Attitudes Toward Learning Activities

Although it was important to offer a program at a time and place which would permit and attract the attendance of intended participants, an in-service program cannot be considered effective unless it maximizes learning. Therefore, the choice of instructional activities and the conditions which surround them was crucial. The learner preferences on these issues can assist in making these decisions.

Most Preferred Modes of Instruction

The survey showed that 50 per cent of the participants selected the discussion group technique as their most preferred mode of instruction. It also showed that 23 per cent strongly preferred lectures, 59 per cent strongly preferred discussion groups, 16 per cent strongly preferred simulation, 11 per cent strongly preferred gaming, 14 per cent strongly preferred computer-assisted instruction, 9 per cent strongly preferred programmed learning, 12 per cent strongly preferred independent study, 11 per cent strongly preferred tele-lecture, 16 per cent strongly preferred films, 20 per cent strongly preferred case study, 42 per cent strongly preferred site visit, 13 per cent strongly preferred role playing, 8 per cent strongly preferred O. D. (Organizational Development) process techniques, 8 per cent strongly preferred supervised readings and 30 per cent strongly preferred internship experience. The results of this part of the survey (Table III), are found in Table IV.

TABLE IV
ATTITUDES TOWARD MODES OF INSTRUCTION

Modes ^a	Responses ^b			
	Strongly	Mildly	Indifferent	Dislike
Lectures	31(22.794)	56(41.176)	25(18.382)	24(17.647)
Discussion Groups	79(58.955)	37(27.612)	15(11.194)	3(2.239)
Simulation	21(15.672)	52(38.806)	52(38.806)	9(6.716)
Gaming	15(11.111)	41(30.370)	52(38.519)	27(20.000)
Computer-Assisted Instruction (CAI)	19(14.286)	43(32.331)	49(36.842)	22(16.541)
Programmed Learning	12(8.889)	41(30.370)	40(29.630)	42(31.111)
Independent Study	16(11.940)	56(41.791)	42(31.343)	20(14.925)
Tele-Lecture	15(11.194)	37(27.612)	51(38.060)	31(23.134)
Films	21(15.672)	63(47.015)	35(26.119)	15(11.194)
Case Study	27(20.149)	56(41.791)	34(25.373)	17(12.687)
Site Visit	56(41.791)	54(40.299)	15(11.194)	9(6.716)
Role Playing	18(13.433)	28(20.896)	55(41.045)	33(24.627)
Organizational Development (O.D.)	10(8.065)	24(19.355)	69(55.645)	21(16.935)
Supervised Reading	11(8.333)	21(15.909)	44(33.333)	56(42.424)
Internship Experience	39(29.545)	49(37.121)	34(25.758)	10(7.576)

^aModes appear in Appendix B.

^bNumbers in parentheses reflect percentages.

Least Preferred Modes of Instruction

Supervised reading, as a mode of instruction, was most frequently cited as being the least preferred (42 per cent), followed by programmed learning (31 per cent), role playing (25 per cent), tele-lecture (23 per cent), gaming (20 per cent), and computer-assisted instruction (17 per cent). It was also interesting to note that 18 per cent of the participants expressed dislike for the lecture method. The evidence of the survey points to the discussion groups method as being the most preferred mode of instruction. An examination of the above cited preference patterns suggests that the one hundred thirty-seven participants wish to take an active rather than a passive role in their own learning. With some degree of uncertainty, one could interpret the findings as indicating that although the staff and faculty were willing to listen to lectures, they would prefer that the lecture serve as a supplement and/or stimulant to participant discussion which was seen as more productive.

The survey showed that 44 per cent of the participants preferred that a lecture last no longer than one hour. Only 20 per cent felt that a lecture should last no longer than two hours. Similarly, 39 per cent of the participants felt that the maximum duration of a discussion session should be one hour. However, another 29 per cent preferred that discussion last two hours, only 15 per cent preferred that discussion should last longer than two hours. The results of this part of the survey are found in Table V.

TABLE V

ATTITUDES TOWARD MAXIMUM DURATION FOR LECTURE AND DISCUSSION

Items	Responses					
	15 Minutes	30 Minutes	One Hour	1.5 Hours	2 Hours	More than 2 Hours
Lecture	8(5.882)	18(13.235)	60(44.118)	15(11.029)	27(19.853)	8(5.882)
Discussion	4(2.941)	9(6.618)	53(38.971)	10(7.353)	30(29.412)	20(14.706)

Most Preferred Size for Discussion Groups

The survey revealed that a group of six to ten people was the most preferred size for discussion groups (50 per cent), although strong support was also given to groups of 11 to 15 people (26 per cent), and only 11 per cent preferred five or fewer people. This preference for relatively small grouping was also exhibited in regard to the preferred number of program participants. Fifty-four per cent of the participants stated that they would feel more comfortable and learn more effectively in an in-service program composed of between 10 and 25 participants. While 42 per cent desired a program involving fewer than 10 participants, less than three per cent preferred a group of more than 25 participants.

Finally, the survey revealed that 80 per cent of the participants felt that the above mentioned instructional activities should be led by other than (1) MMCS supervisors, (2) university professors, or "in house" directors of staff development. An additional 11 per cent preferred university professors, while only nine per cent preferred "in-house" directors of staff development should serve as the program's staff and faculty trainer while only 0.7 per cent felt that this responsibility should be given to MMCS supervisors.

✓ Attitudes Toward Topics for In-service Programs

All of the above concerns and participant preferences deal with structure, schedule and format for an in-service program. A skillful technique for determining the prospective participants level of interest in various topics was devised by Frank Vicino and Carolyn Raymond of the Mesa School district in Arizona. This technique was

incorporated as a section of the needs-assessment questionnaire (see Appendix C under the title "Experience-Interest Inventory"). The inventory ascertains not only the participants' interest level in each topic, but also their degree of experience with each topic. The collection of this information enabled the writer to determine the difference between a participant's experience and interest which was interpreted as a measure to determine the participant's need for additional training in that area. In addition, the inventory asked each participant to select the two topics which he had the most interest in studying via an in-service program. A useful by-product of the inventory was the identification of a human resource pool composed of prospective participants who claim expertise in certain topics and can later serve as facilitators at in-service programs dealing with their areas of competence.

The ninety-four (94) topics selected for investigation in the survey were analyzed on two different bases: (1) experience, and (2) interest-need. In the experience realm, four levels were analyzed: (1) expertise, (2) some experience, (3) some knowledge, and (4) no knowledge. Also four levels were analyzed in the interest inventory: (1) very strong, (2) strong, (3) moderate, and (4) none. The results of the experience - interest inventory are shown in Appendix C.

The final selection of a topic, therefore, depends upon the scope of the entire in-service package offered by the United States Army Missile and Munitions Center and School, the objectives and priorities of the school, and the resources available for the program.

In brief, the most general interest was displayed by the staff and faculty toward "Career Development Training." The participants

had the most experience in dealing with "Military Methods of Instruction," and least experience in (1) Techniques of ETV Instruction, (2) Conflict Management, (3) AFGE Role at the School (MMCS), (4) Due Process, (5) Special Problems in Education, and (6) School Law. The topics most frequently cited by the participants as being of the most interest were: (1) Psychology, (2) Management, (3) Human Resources, and (4) Reading Improvement.

Attitudes Toward Reward and Motivation

In an attempt to reward participants and motivate their attendance, certain features may be incorporated into the in-service program. Rather than guessing as to what features prospective participants may value, the issue should be addressed by a needs-assessment survey.

The needs-assessment survey showed, when asked respondents to select the most attractive often frequently employed features. Positive responses included: (1) promotion to higher pay grade (59 per cent), (2) university credits (25 per cent), and (3) presentation by recognized scholar in the field (7 per cent). The least valued features were: (1) obtaining released time, and (2) receiving certificate of achievement. Perhaps surprisingly, programs held in attractive locations with opportunity to travel and temporary duty with per diem received less than one per cent support, according to the survey.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to provide knowledge at the command level in respect to staff and faculty attitudes toward in-service training programs. The problem for investigation in this study was to determine the attitudes of the staff and faculty toward in-service training at the U. S. Army Missile and Munitions Center and School.

The research method for the study was a survey of the staff and faculty attitudes toward in-service training programs. The study was to present facts concerning the attitudes of the staff and faculty toward in-service training. Most of the data were taken from the needs-assessment survey.

The types of literature that were reviewed included: (1) USAMMCS Historial Reports, (2) Regulations, (3) Pamphlets, (4) Army Correspondence, (5) Training Research Reports, Courses for staff and faculty in-service training, and (6) Professional publications in The Educational Administration.

The purpose of the review of literature was twofold: (1) to establish the historical background of the organization and administration, and (2) to obtain criteria for evaluating the manner in which the organization with the primary responsibility for staff and faculty in-service training (DOTD) was structured.

A needs-assessment survey of the staff and faculty attitudes was utilized where documentary data was not available to obtain personal professional opinions about the staff and faculty in-service training at the school (MMCS). The survey was conducted with one hundred thirty-seven (137) military and civilian managers, supervisors, curriculum specialists, education specialists, training specialists, instructor team chiefs and instructors.

With regard to the climate of receptivity for in-service training, the survey revealed that 65 per cent of the 137 participants declared that MMCS provided training and development program for all staff and faculty personnel on a fairly regular basis. Approximately 77 per cent declared that the school (MMCS) does maintain a staff that is responsible for providing staff and faculty training for all of its personnel.

With regard to the survey, 56 per cent of the personnel declared that they had high interest in attending an in-service training program. This level of interest was somewhat substantiated by the fact that only 32 per cent of the personnel had attended at least one in-service training program during the last year. Along the same lines, 71 per cent of the respondents said they were willing to devote more than 10 days each fiscal year to in-service training programs.

With regard to the factors which hindered participating, the survey revealed that of the 68 per cent of the staff and faculty that stated they did not attend as many in-service programs, as they would have liked to have attended last year, 98 per cent blamed this occurrence because of other (specified) reasons.

Ninety-five per cent of the respondents preferred that in-service programs be scheduled in January, February, April and May. While June, July, and December were cited as the least convenient times. Also 88 per cent of the respondents preferred that the programs be held during the work day.

Regarding the site for the program, 83 per cent of the respondents preferred that an in-service program of three-day duration be held within easy commuting distance. The most frequently preferred site for housing a program was a school within easy commuting distance. This choice was followed by a nearby university. It appears that the wide majority of the MMCS staff and faculty surveyed preferred that in-service programs be held locally; however, a small but substantial number preferred that some travel be incorporated in the design of in-service training programs.

Of the staff and faculty surveyed, 50 per cent selected the discussion group technique as their most preferred mode of instruction. Supervised reading was most frequently cited as being least preferred followed by programmed learning.

In terms of promoting their own learning, 44 per cent of the staff and faculty preferred that a lecture last no longer than one hour. Similarly, 39 per cent of the participants felt that the maximum duration of a discussion session should be one hour. A group of six to ten people was the most preferred size for a discussion group, although strong support was given to groups of 11 to 15 people.

Ninety-four possible study topics were selected for this study and analyzed on two different bases: (1) experience, and (2) interest-need. In the experience four levels were analyzed: (1) expertise,

(2) some experience, (3) some knowledge, and (4) no knowledge. Also four levels were analyzed in the interest-need inventory: (1) very strong, (2) strong, (3) moderate, and (4) none. The results of the experience - interest analyses can be found in Appendix B. The final selection of a topic, therefore depends upon the scope of the entire in-service package offered by the United States Army Missile and Munitions Center and School, the objectives and priorities of the school, and the resources available to the program.

Conclusions

The findings reported in Chapter IV warrant the following conclusions:

1. The needs-assessment survey of the staff and faculty attitudes revealed that their attitudes were negative toward the present in-service training program at the United States Army Missile and Munitions Center and School.
2. With regard to the factors which hindered participation, the survey revealed that of 68 per cent of the staff and faculty that did not attend as many in-service programs as they would have liked to have attended last year, 98 per cent blamed this occurrence because of other (specify) reasons.
3. That as a result of this study, that the staff and faculty training program at MMCS should involve participants in the planning for group and individual differences, establishing objectives, and assuring adequate evaluation.

4. The participants must be involved in the total program if they are to gain the most from it. It is important that conclusions reached and plans established in an in-service program emerge from within the staff and faculty. This insures the programs to be staff and faculty programs and the staff and faculty share in the responsibility of success or failure in the decision. By establishing a program that insures maximum participation of the staff and faculty that will be involved, greater chances of success are assured.
5. The preceding conclusions seem consistent with several national trends in in-service training: (a) staff and faculty or their representatives are usually involved in planning the in-service programs, administrators, supervisors, and instructors work as a team; (b) greater use should be made of the professional staff within the school; (c) MMCS should provide a wider variety of opportunities and activities for professional growth in in-service training programs; (d) compensation should be given for time contributed to in-service training by the staff and faculty outside the regular working hours; (e) MMCS should provide more released time during the regular working hours for in-service activities; (f) promotion practices should recognize experience and preparation; and (g) MMCS in-service training programs should have subjective evaluation and systematic statistical evaluation.

Recommendations

The recommendations which follow were based on an analysis of data gathered in the previous phases of the study. They offer alternatives for decision-making which could improve the in-service training at the United States Army Missile and Munitions Center and School. The primary objective was to provide knowledge at the command level with respect to staff and faculty attitudes toward in-service training programs. The problems for investigation in this study was to determine the attitude of the staff and faculty toward in-service training at MMCS.

1. Consideration should be given to revising the in-service programs at USAMMCS to better meet the needs of the staff and faculty.
2. Consideration should be given to the development of in-service programs to assure that all staff and faculty members associated with the school possess an adequate background relating to learning theories and the instructional methods and educational media available for use at USAMMCS. The programs should provide for
 - (a) the establishment of staff and faculty qualifications, goals and objectives,
 - (b) a needs survey to determine the status of staff and faculty qualifications and gaps which require training,
 - (c) training requirements to improve staff and faculty on an individual basis,
 - (d) a detailed analysis of total training requirements,
 - (e) funding requirements to implement identified training needs,
 - (f) a determination of where and by whom training would be conducted,
 - (g) a procedure for including new staff and faculty

personnel on the training programs, (h) a management information system to automate program activities, (i) a quality control and quality assurance procedure to effect program changes through review and analysis, (j) a method for recognizing successful accomplishments by individual members of the staff and faculty, and (k) instructions for implementation of the in-service training programs.

3. Consideration should be given to an in-depth study of the absence of interest in (a) simulation, (b) gaming, (c) computer-assisted instruction, (d) programmed learning, (e) independent study, (f) tele-lecture, (g) films, (h) case study, (i) role playing, (j) organizational development process techniques, and (k) supervised readings.
4. Consideration should be given to career professional growth and to the development of in-service training programs that are more responsive to individual needs and those of the organization. The recommendation is based on an assumption that the professional competence of the staff and faculty have a direct relationship to the quality of its products and that pertinent training would reduce adverse impacts created by the necessity to conduct extensive professional in-service training. Additionally, specialists at the school--both educational and subject matter--recognized the need to continue their professional growth throughout their careers. Although it is primarily an individual's responsibility to maintain his own effectiveness, he has the right to expect

substantial assistance from the organization.

5. Consideration should be given to the sources of information used for determining needs for in-service training programs. A sound approach to the identification of training needs recommends that:
 - (a) analysis of organization problems, conditions, missions, changes, reorganizations, staffing, production quality, production quantity, technical problems, administrative problems, and communications be accomplished. These needs may be discovered by asking top management, middle management, supervisors, staff offices or employees. They also may be discovered by observing employees, their work habits, work flow, relationships, actions and reactions.
 - (b) analysis of employees, skills improvement, knowledge, morale, realignment, potential for greater responsibility, and performance. As discovered by records, reports, observation, organization structure, program plans, organization policies and statistics, (c) it is recommended that study be made to determine:
 1. whether a problem or situation calls for action,
 2. what conditions exist in MMCS now,
 3. what causes this problem or situation,
 4. what condition does MMCS want to bring about,
 5. what is lacking (needs),
 6. which needs can be met by training,
 7. what kind of in-service training is needed,
 8. what of these needs have greatest priority,
 9. which can MMCS do about them and
 10. how MMCS shall proceed.

6. A study should be made concerning the advisability and appropriateness of the arbitrary standards for staff and faculty in-service training programs established by TRADOC 350-30 (1975).
7. Considerations should be given to the sample model of an in-service program. The program should be developed in accordance with the results of the staff and faculty attitudes indicated by the study. Where possible, participants must be involved in planning for future programs. The suggested type of program should be put into effect over a three-year period; the program should be evaluated annually, and modified in the light of the findings. Special attention should be given to participants' attitudes toward the programs. The programs should be designed to give the staff and faculty an opportunity to increase their knowledge in the areas of interest and provide some type of reward for attending. The suggested sample model that follows was developed from the results of the study. It will show the (a) educative agencies, (b) topics, (c) modes of instruction, (d) length of course, (e) time (f) size of group, and (g) location of course.

SAMPLE MODEL OF STAFF AND FACULTY IN-SERVICE PROGRAM

Educative Agencies	Topics	Length	Time	Size of Group	Modes of Instruction	Location
Staff and Faculty Development	Career Development Training	2 wks	0730-1130	1-10	Discussion Groups	USAMMCS, RSA, AL
	Staff & Faculty Involvement in Decision-Making	1 wk	1130-1530	11-15	Lecture-Discussion Groups	USAMMCS, RSA, AL
	Military Methods of Instruction	2 wks	0730-1530	6-10	Lectures/Discussion Groups/Site Visit/Role Playing/Films	USAMMCS, RSA, AL
	Training Supervisors Course	1 wk	1130-1530	11-15	Discussion Groups/Role Playing	USAMMCS, RSA, AL
	Report Writing	1 wk	0730-1130	6-10	Programmed Learning	USAMMCS, RSA, AL
Communication Skills Company	Reading Improvement	1 wk	0730-1130	11-15	Supervise Reading	Redstone Arsenal
	Clear Writing	2 wks	1130-1530	6-10	Programmed Learning	Redstone Arsenal
	Building Word Power	2 wks	0730-1130	6-10	Discussion Groups/Programmed Learning	Redstone Arsenal
	Developing Reading and Comprehension Skills	1 wk	0930-1130	11-15	Supervised Reading/Discussion Groups	Redstone Arsenal

SAMPLE MODEL (Continued)

Educative Agencies	Topics	Length	Time	Size of Group	Modes of Instruction	Location
U. S. Civil Service Commission	Affective Training	1 wk	0830-1030	11-15	Lectures/Dicussion Groups	Redstone Arsenal, Al
	Basic Management Functions	1 wk	0830-1430	11-15	Discussion Groups	Huntsville, AL
	Basic Management Methods & Skills	1 wk	0800-1200	11-15	Lectures/Discussion Groups	Huntsville, AL
	Psychology & Management of Human Resources	2 wks	0800-1200	11-15	Discussion Groups/Lectures/Films	Huntsville, Al
	Human Relations at Work	1 wk	0800-1200	11-15	Role Playing/Discussion Groups	Huntsville, AL
	Creative Problem Solving	1 wk	0800-1600	6-10	Lectures/Role Playing	Huntsville, AL
	Advanced Creative Problem Solving	1 wk	0800-1200	11-15	Discussion Groups/Role Playing	Huntsville, Al
Colleges and Universities	Educational Psychology	1 sem.	TBA	15-20	Lectures/Discussion Groups	Huntsville, Al
	Introduction to Supervision and Management	1 sem.	TBA	15-20	Discussion Groups/Lectures/Role Playing	Huntsville, AL
	Human Relations In Administration	1 sem.	TBA	15-20	Lectures/Discussion Groups/Role Playing	Huntsville, Al

SAMPLE MODEL (Continued)

Educative Agencies	Topics	Length	Time	Size of Group	Modes of Instruction	Location
	Criterion Referenced Testing and Student Assessments	1 sem.	TBA	15-20	Lectures/Discussion Groups/Rile Playing	Huntsville, AL
	Supervision and Group Performance	1 sem.	TBA	15-20	Lextures/Role Playing Discussion Groups	Huntsville, AL

Other Recommendations

The researcher further recommends that:

1. Effective guidelines be developed at the Department of the Army level to insure increased participation of service schools staff and faculty involved in the development of in-service training programs.
2. These guidelines be disseminated to all U. S. Army Service Schools.
3. Additional in-service workshops be conducted to sensitize vocational and technical training.

It is recommended that additional research be done on an Army-wide level to determine the specific areas in which more immediate action can be taken to encourage the involvement of service schools staff and faculty and when and where they are needed to insure a better in-service training program.



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APPENDIX A

HISTORICAL BACKGROUND OF THE UNITED STATES

ARMY MISSILE AND MUNITIONS

CENTER AND SCHOOL

This Appendix contains a summary of the literature concerning the history, organization and administration of the in-service staff and faculty training and development program at the United States Army Missile and Munitions Center and School.

The Expanding Scope of the USAMMCS

In June, 1951, the Guided Missile Division of the Training Command, located at Aberdeen Proving Ground, Maryland, was created and charged with the task of initiating maintenance training on the then comparatively new field of guided missile technology. Beginning in March, 1952, after approximately nine months of planning, an initial cadre of people from the division transferred to Redstone Arsenal, Alabama, to establish the provisional Redstone Ordnance School. The school's initial curriculum for guided missile training consisted of the following courses:

1. Ordnance Guided Missile Officer (MOS 4819)
2. Guided Missile Repairman (MOS 3361)
3. Guided Components Repairman (MOS 3362)
4. Internal Guidance Systems Repairman (MOS 1362)
5. External Guidance Systems Repairman (MOS 1363)¹

The initial courses conducted by the school were highly theoretical and cognitive in subject matter content and, for the most part, limited to resident instruction on the Nike Ajax and Corporal missile systems. Much of the instruction used substitute equipment, pictures, models,

¹Charles Wayne Jackson, "Analysis of the Administration of Resident Individual Training at the U. S. Army Missile and Munitions Center and School" (Ph.D. dissertation, University of Alabama, 1972.)

mock-ups, or other devices in lieu of actual hardware. Common Basic Electronics Training (COBET), a prerequisite for attending courses offered at the school, was conducted at the Signal School, Fort Monmouth, New Jersey.²

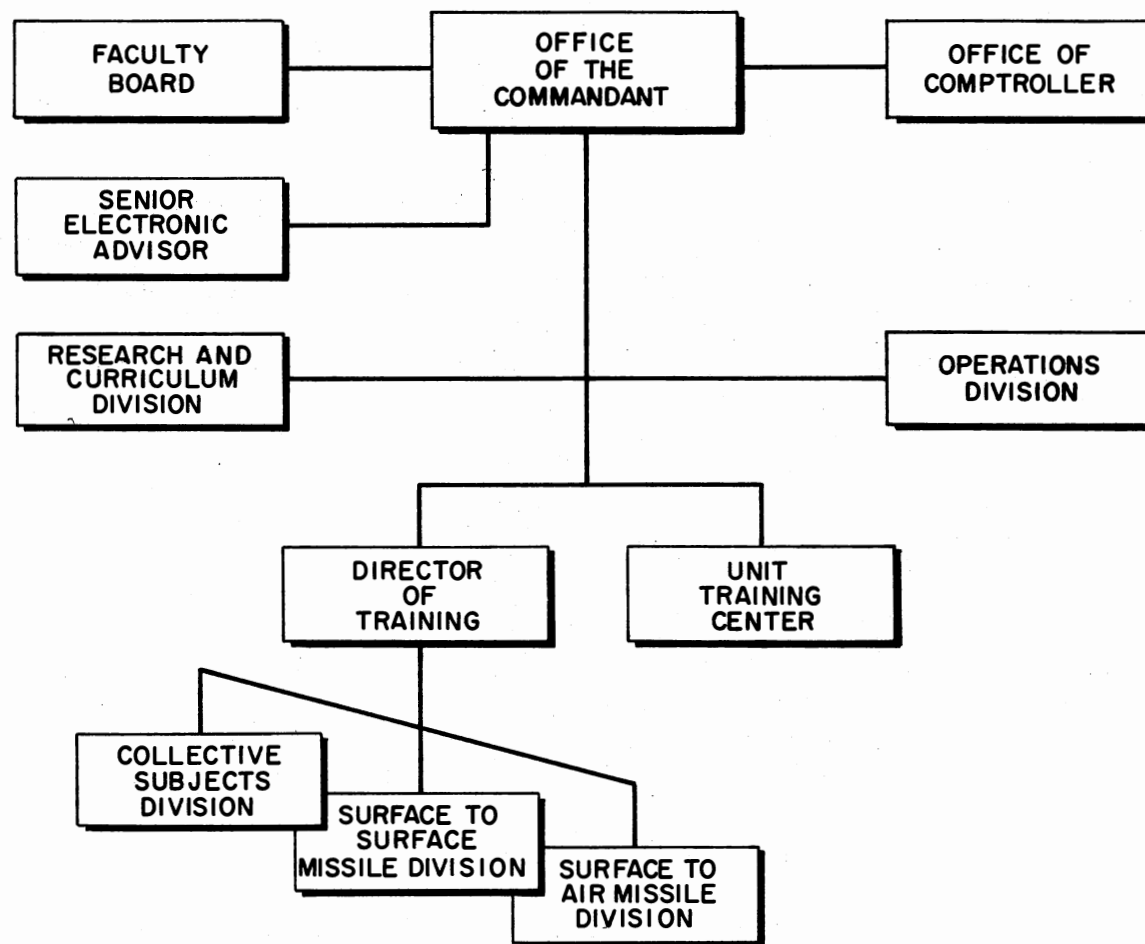
The organizational structure for the school (circa, 1942) is illustrated in Figure 1. Doctrine and Standards Branch provided guiding standards concerning pedagogical matters and conducted in-service staff and faculty training courses. Standards were published in institutional literature and training activities were evaluated on-site. In-service training for staff and faculty was limited to a two-week method of instruction course and a brief workshop on conference leadership.³

A major revision in the organization necessitated by the assignment of additional missions, was made during 1955. By the end of the year, the school was engaged in conducting a total of fourteen (14) resident courses, training Ordnance Guided Missile units, preparing correspondence course materials, and developing Army-wide training literature in the subject matter areas of guided missiles (doctrinal literature in guided missile technology for use throughout the Army).⁴ The Organizational structure for the school (circa 1956) is illustrated in Figure 2.

²Ibid.

³U. S. Department of the Army, Organizational Staff Manual (Redstone Arsenal, Alabama: U. S. Army Provisional Redstone Ordnance School, October, 1952), p. 8.

⁴Jackson, "Analysis of Administration of Resident Individual Training," pp. 17-27.



SOURCE: U.S. DEPARTMENT OF THE ARMY SEMI-ANNUAL HISTORICAL REPORT, JULY-DECEMBER 1955 (REDSTONE ARSENAL, ALABAMA: ORDNANCE GUIDED MISSILE SCHOOL, FEBRUARY 1956), P. 6.

Figure 5. Organizational Chart, Provisional Redstone Ordnance School (Circa 1952)

Although responsibility for curriculum development remained with the faculty of the training elements, two significant features of the activity were centralized organizationally: (1) research on the effect that technological changes or the introduction of new or revised weapons systems had on training, and (2) coordination with external agencies.

Staff elements (shown above as the Director of Training and the Unit Training Center in Figure 2) assumed a more active role in the management of funds, facilities, and personnel and the following additions were made to the organization:

1. A Unit Training Center was added to accomplish the unit training mission.
2. The Research and Curriculum Division was added to keep pace with the expanding technology of guided missiles, Army doctrine, testing, in-service training, and the correspondence course curriculum.
3. The Operations Division was added to establish workload priorities for training activities and to coordinate training matters between the Research and Curriculum Division, the Director of Training, the Unit Training Center, and Outside agencies.
4. A position for the Senior Electronics Advisor (Signal Corps Liaison Officer) was added to advise the Commandant about common basic electronics training conducted at the Signal School and to conduct the necessary liaison between the two schools.
5. A Faculty Board with representation from each of the major organizational elements was established to advise the Commandant on matters such as failing students (attrition), effectiveness of training

(evaluation function), and future planning.⁵

Except for minor changes in the structure, name changes of elements, and minor clarification of missions, the organization remained relatively stable at the school until 1965. However, a number of events with impact on the curriculum did occur during the period which caused an impact on the staff and faculty training and development needs. A summary of these events are:

1. 1957: The responsibility for preparing military occupational specialty tests was added to the Research and Curriculum Division.⁶
A position of Education Advisor was added to the Commandant's Office, replacing the Faculty Board.⁷
2. 1959: Students from allied nations were admitted to resident training programs.⁸
3. 1962: The Combat Doctrine and Material Development Missions were transferred to the Combat Development Command.⁹

⁵U. S. Department of the Army, Semi-Annual Historical Report, July-December, 1955 (Redstone Arsenal, Alabama, Ordnance Guided Missile School, February, 1956), pp. 7-17.

⁶U. S. Department of the Army, Organization and Function Manual, Part I (Redstone Arsenal, Alabama, U. S. Army Ordnance Guided Missile School, December, 1957), p. 19a.

⁷Ibid., p. 2.

⁸U. S. Department of the Army, Organization and Function Manual, Part I (Redstone Arsenal, Alabama, U. S. Army Ordnance Guided Missile School, January, 1960), p. v.

⁹Ibid., p. iv and U. S. Department of the Army, Organization and Function Manual (Redstone Arsenal, Alabama, U. S. Army Ordnance Guided Missile School, February, 1962), p. iii.

4. 1963: Studies concerning the structure of military occupational specialties in the missile career field and training provided for those specialties resulted in the transfer of common basic electronics instruction from the U. S. Army Ordnance Center and School to Redstone Arsenal, Alabama. To provide the instruction, the Missile Components Division was added under the Director of Training.¹⁰

5. 1964 and 1965: The Munitions training mission (conventional, special, and nuclear) was studied, transfer plans were completed, and Phase I of the Plan (Conventional Ammunition Training) was effected by movement of the conventional ammunition training from the Ordnance School to Redstone Arsenal, Alabama. The Ammunition Department was added under the Director of Training to conduct this training.¹¹

6. 1966: A staff element for curriculum and testing was added to the Director of Training. The element was staffed with all civilian education specialists who maintained functional supervision in the development of curricula materials. Although most of the civilians who were assigned to the element worked with either curriculum or testing materials, most were qualified also in a subject matter area.¹²

¹⁰U. S. Department of the Army, Organization and Function Manual, Part I (Redstone Arsenal, Alabama, U. S. Army Ordnance Guided Missile School, May, 1963), p. iv.

¹¹U. S. Department of the Army, Organization and Function Manual (Redstone Arsenal, Alabama, U. S. Army Ordnance Guided Missile School, September, 1965), p. ix.

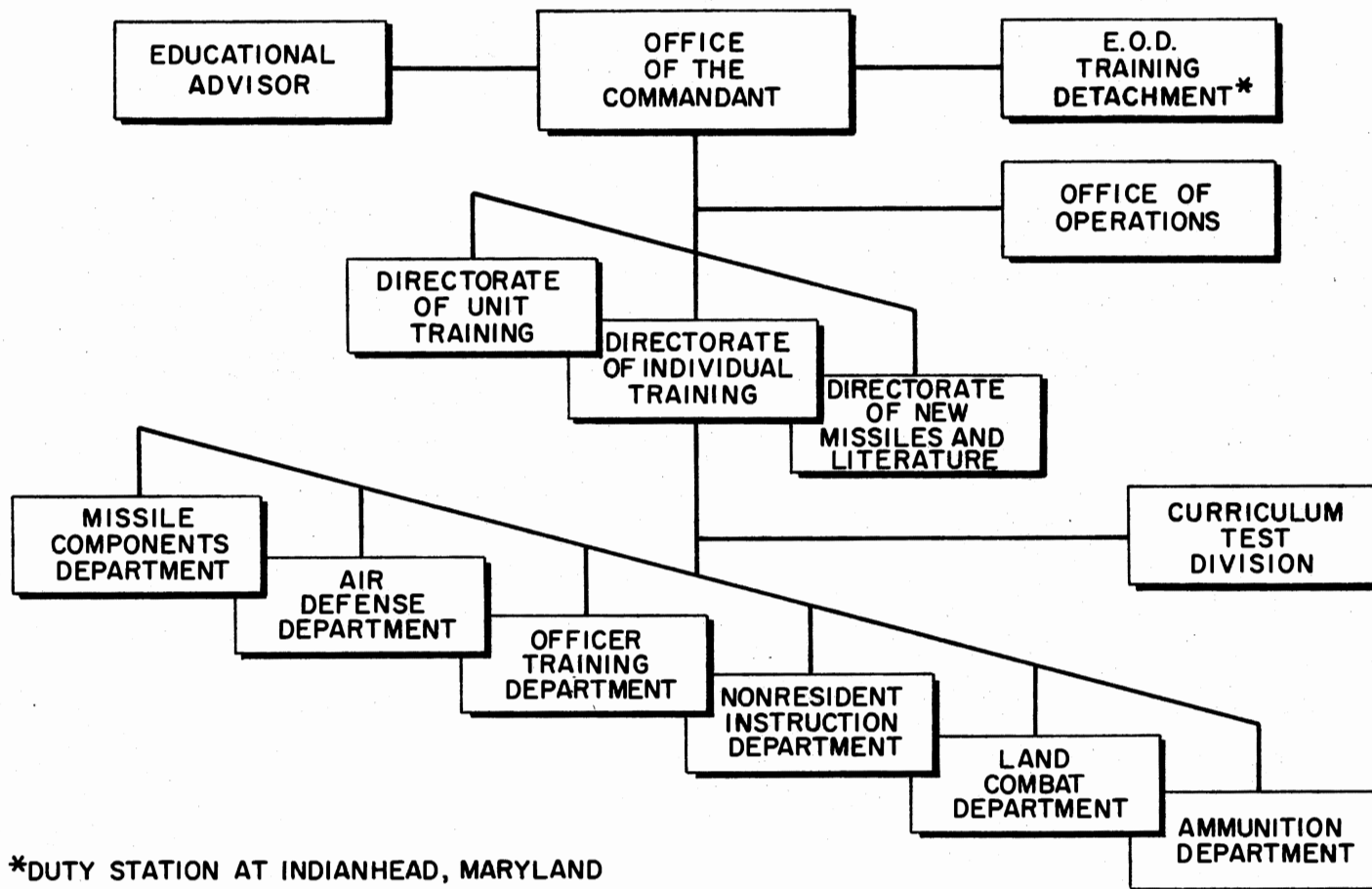
¹²U. S. Department of the Army, Organization and Function Manual (Redstone Arsenal, Alabama, U. S. Army Missile and Munitions Center and School, July, 1966), p. 97.

The accumulative changes due to new mission assignments in 1965 and 1966, name changes, and minor realignment of missions that occurred during the earlier years are reflected in Figure 3. The expanded scope of the staff and faculty training and development needs can be noted by contrasting Figures 2 and 3. By late 1967, the scope of the in-service staff and faculty training became relative stabilized and the in-service staff and faculty curriculum development, still highly decentralized began to cope with a rapidly changing technology and problems arising from an extending arena for staff and faculty activity.

The Extending Arena of Staff and Faculty Activity

In the brief history of job analysis practices at the U. S. Army Missile and Munitions Center and School, the enlisted MOS studies stand out as a signal event to herald the forthcoming expanding arena of staff and faculty activity. The movement began at the school during the late 1950's when the need for training personnel to parallel the development of new weapons systems technology was recognized. One objective of the enlisted MOS studies was to reduce the delay between the availability of weapons systems equipment and trained personnel to perform the maintenance mission. Since prevailing operating procedures were inadequate, more sophisticated procedures for in-service staff and faculty training and development were developed and employed.¹³

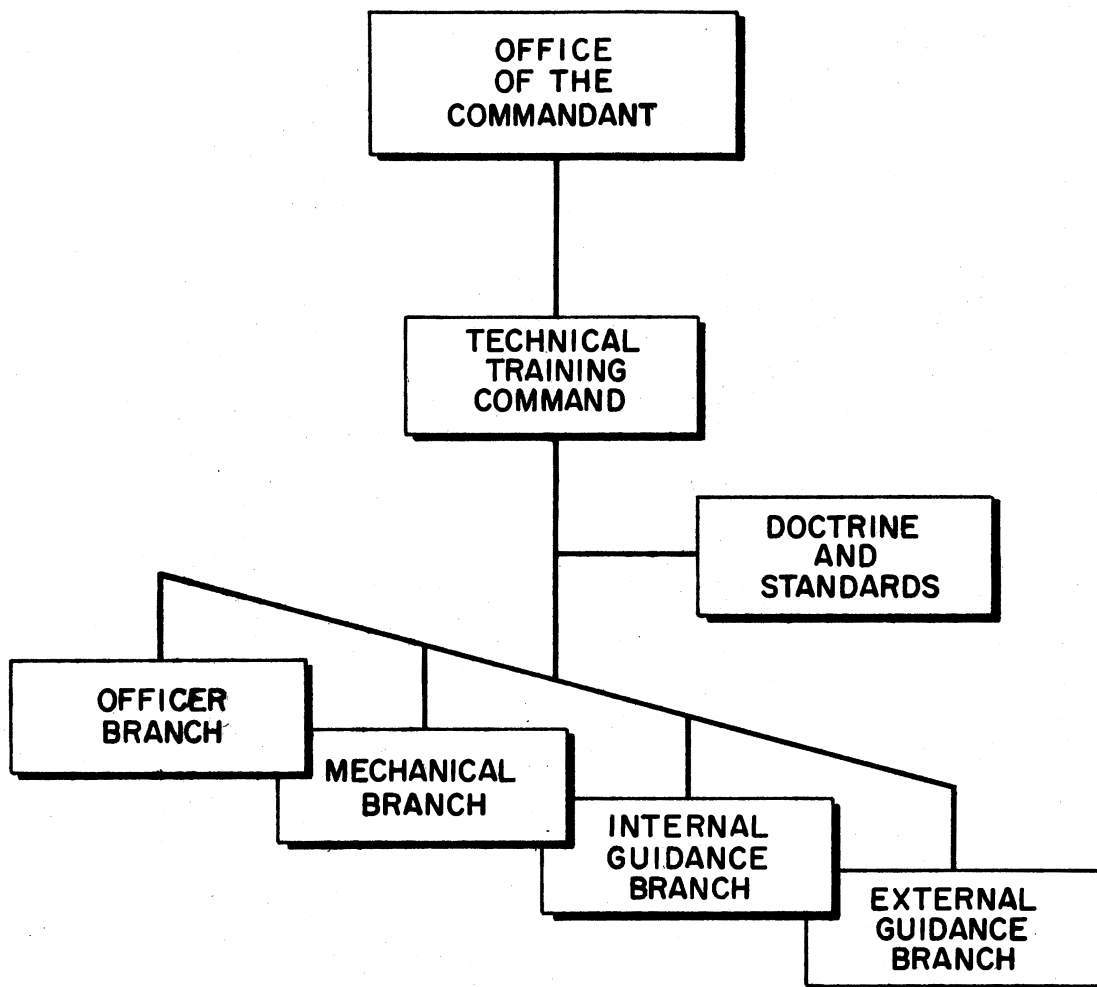
¹³Dr. John M. Gullick, Jr., Supervisory Education Specialist, Directorate of Training Developments, USAMMCS. Personal Interview. (Redstone Arsenal, Alabama, January, 1977). Dr. William J. Jenkins, Supervisory Education Specialist, Directorate of Evaluation, USAMMCS. Personal Interview. (Redstone Arsenal, Alabama, January 1977).



*DUTY STATION AT INDIANHEAD, MARYLAND

SOURCE: U.S. DEPARTMENT OF THE ARMY AMIAD HISTORICAL SUMMARY, JANUARY 1 - DECEMBER 31, 1967 (REDSTONE ARSENAL, ALABAMA: U.S. ARMY MISSILE AND MUNITIONS CENTER AND SCHOOL, FEBRUARY 1968) P. 1.

Figure 6. Organizational Chart, Ordnance Guided Missile School (Circa 1956)



SOURCE: U. S. DEPARTMENT OF THE ARMY ORGANIZATIONAL STAFF MANUAL (REDSTONE ARSENAL, ALABAMA: U. S. ARMY PROVISIONAL REDSTONE ORDNANCE SCHOOL, OCTOBER 1952) P. 2.

Figure 7. Organization Chart, U. S. Army Missile and Munitions Center and School (Circa 1967)

Department of Defense and Department of the Army concern during the late 1950's and early 1960's for the increasing costs of missile and electronic training stimulated a search for more efficient training practices. As a result, the U. S. Army Missile and Munitions Center and School began experimenting with programmed instruction, television, and other media in 1958. Persons with longevity in staff and faculty development at the school generally agreed that programmed instruction gave impetus to the search for more efficient training methods.¹⁴

One outgrowth of the search at the U. S. Army Missile and Munitions Center and School was incorporated in the studies of enlisted military occupational specialties for which the school was responsible. One objective was to identify elements in the training for a family of vocational specialties which could be included in a common block of training. Common instruction then could be followed by training to develop skill in a single occupational specialty. The studies were significant for three reasons:

1. They comprised an organized and comprehensive effort to analyze a family of occupational specialties rather than a single specialty.

2. The greatest degree of commonality was found in basic electronic training. The study was extended later to include career fields, other than missiles and, eventually, an army-wide Common Basic Electronic Training program (COBET) was implemented to eliminate intraservice duplication of this instruction.

¹⁴Ibid.

3. Many of the practices and procedures developed for and employed during the study became the cornerstone for an army-wide systems approach to course design.¹⁵

Systems engineering (the Army's term for its new systems approach to course design), although not as successful as its authors had hoped it would be, was an important milestone in the history of staff and faculty development at Army schools. Prior to the army-wide systems approach, various schools and training centers employed different methods and procedures for staff and faculty development. The standardized seven-phase approach to course design was based on evidence that tasks to be performed by a vocational specialty could be precisely defined and measured. Phases of the process were accomplished in the following sequence:

1. Job Analysis--Job performance requirements were identified by an analysis of duty positions, work environment, and equipment requirements. The analysis yielded a list of tasks, skills, and knowledges.¹⁶

2. Select Tasks for Training--The selection was based on specified criteria and decisions were posted on the task, skill, and knowledge lists.¹⁷

¹⁵U. S. Department of the Army, Education and Training: Systems Engineering of Training, Course Design, 1st ed. (Fort Monroe, Va., U. S. Continental Army Command, February, 1968).

¹⁶Ibid., pp. 7-14.

¹⁷Ibid., pp. 15-17.

3. Training Analysis--The analysis was made to bridge the gap between job requirements and the classroom. The analysis required a division of tasks to define manageable instructional units and to express instructional objectives in three parts: i.e., an action, a condition, and a standard.¹⁸

4. Develop Training Materials--The preparation of testing materials was accomplished by instructors.¹⁹

5. Develop Testing Materials--The preparation of testing materials was accomplished by instructors.²⁰

6. Conduct Training--Conducting meant delivering instruction to classes. Although this step was not a part of the developmental process, feedback was obtained to determine requirements for revising courses.

7. Quality Control--Quality control included the evaluation of training through internal (school) and external (other) sources. Feedback obtained was used to develop alternative recommendations to correct deficiencies discovered.²¹

For approximately seven years, the systems engineering concept was the Army's model for curriculum development. Although the advocates for status quo and the advocates for change were quick to find weaknesses in the model, the extension of staff and faculty activity into the

¹⁸Ibid., pp. 18-35.

¹⁹Ibid., pp. 36-38.

²⁰Ibid., pp. 39-43.

²¹Ibid., pp. 44-49.

interservice arena appeared to be the single most important event that led to the demise of the model. An Army school reorganization which began in 1972 was a second factor and one that had significant impact on the organization and administration of in-service staff and faculty training and development.

The organizational structure established to operate under systems engineering concepts in the latter part of 1973 is depicted in Figure 4. Major changes to the organization, as compared to Figure 3 are:

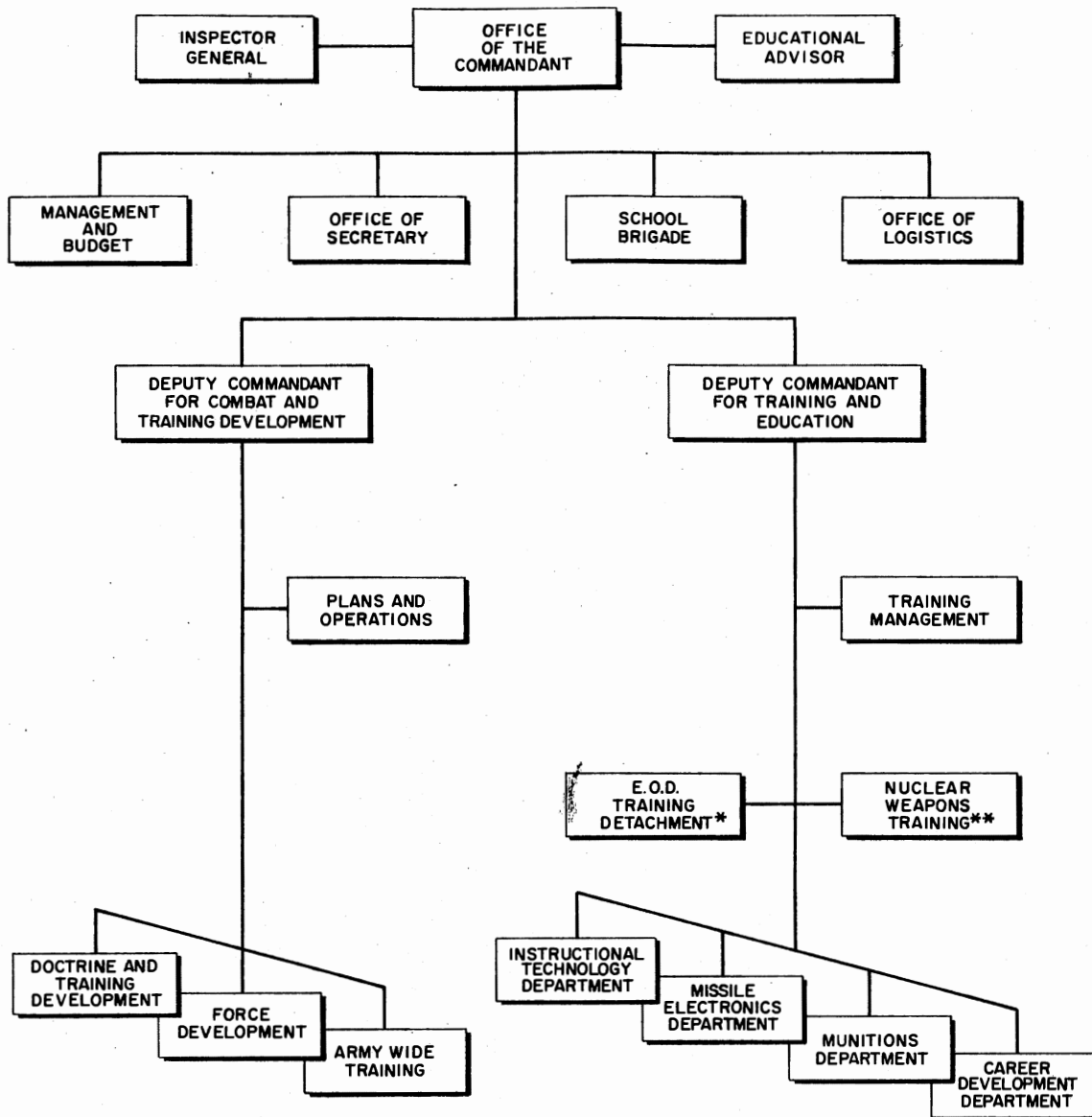
1. The directorate of Unit Training was abolished. The remaining training missions concerning unit training were transferred to other training elements and to the School Troop Command, which was renamed the School Brigade.²²

2. The Deputy Commandant for Combat and Training Development replaced the Directorate of New Missiles and Literature. Missions assigned to the subordinate elements under this Deputy Commandant were as follows:

- a. The Force Development Division was assigned the mission of maintaining training doctrine for materiel (missile and munitions weapons system) developments, defining organizational structures for missile and munitions units, determining personnel requirements for these units, conducting conceptual and derivative force development studies, and developing combat service support doctrine for missiles and munitions.²³

²²U. S. Department of the Army, Organization and Function Manual (Redstone Arsenal, Alabama, U. S. Army Missile and Munitions Center and School, July, 1973), Appendix G, pp. 1-12.

²³Ibid., Appendix H, pp. 3-8.



*DUTY STATION AT INDIANHEAD, MARYLAND
 **DUTY STATION AT KIRKLAND AIR FORCE BASE, NEW MEXICO

SOURCE: U.S. DEPARTMENT OF THE ARMY, ORGANIZATION AND FUNCTIONS MANUAL (REDSTONE ARSENAL, ALABAMA: U.S. ARMY MISSILE AND MUNITIONS CENTER AND SCHOOL, JULY 1973), P. 7.

Figure 8. Organizational Chart, U. S. Army Missile and Munitions Center and School (Circa 1973)

b. The Army-Wide Training Support Division served as project manager for the continuing education programs of the school (extension and correspondence courses).²⁴

c. The Doctrine and Training Development Division accomplished the initial and final phases of curriculum development under the systems engineering process; specifically, all of Phase I (job mission analysis), all of Phase II (selection of tasks for training), Steps 1 and 2 of Phase III (job task data cards and training analysis information sheets), and all of Phase VII (quality control). The division also was responsible for the preparation of military occupational specialty proficiency tests and for coordinating the development and publication of missile and munitions doctrinal literature for Army-wide use.²⁵

3. The Deputy Commandant for Training and Education completed the systems engineering of the curriculum. He was responsible for managing resident instruction, which included the development of training materials used in the classroom: such as lesson plans; training aids; films; and television tapes. He also directed the activities of the Explosive Ordnance Disposal and Nuclear Weapons Training Detachments.²⁶

Analysis of the systems engineering concepts and the organizations responsible for training and curriculum development revealed that the

²⁴Ibid., Appendix H, pp. 12-15.

²⁵Ibid., Appendix H, pp. 9-11.

²⁶Ibid., Appendix I, pp. 1-27.

Planning and decision-making functions had become more centralized. Separate organizations (Army-Wide, Brigade, and the Deputy Commandant for Training and Education) that were previously responsible for the total curriculum development mission were developing instructional materials to comply with specifications provided by the Deputy Commandant for Combat and Training Development. At the end of 1973, the staff and faculty at the school were looking forward to accomplishing objectives which would:

1. Improve the quality of instruction in all areas;
2. Increase the amount of practical "hand'on" training;
3. Expand the non-resident continuing education program;
4. Improve communications between USAMMCS and other schools, particularly the combat arms schools;
5. Expand contacts with field support units;
6. Reduce the average cost for training students;
7. Improve the overall formal education grade level completed by the staff and faculty;
8. Improve the academic overhead;
9. Improve space and environmental conditions wherever possible.²⁷

The Army Wide reorganization which began in 1972 also established the Army's participation in the interservice training review program (initially known as the joint service curriculum review.) The objective was to improve cost effectiveness of training through cooperative efforts

²⁷U. S. Department of the Army, Annual Historical Summary, January 1-December 31, 1973 (Redstone Arsenal, Alabama, U. S. Army Missile and Munitions Center and School, February, 1974), p. 2.

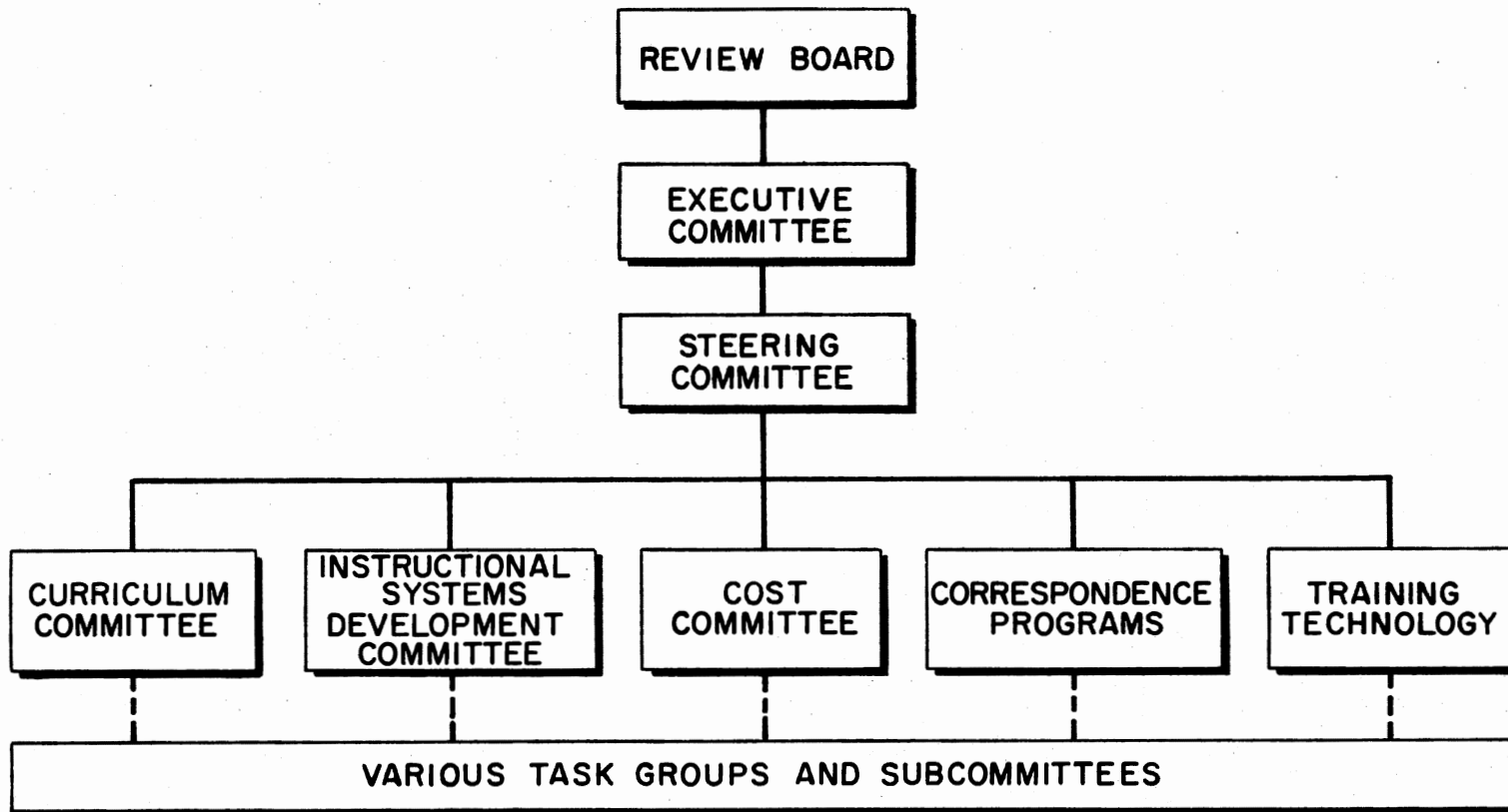
among the various services. Membership in the organization for Inter-service Training Reviews were undertaken by representatives from the four training commands of the armed services. The Organization Plan is shown in Figure 5. The Review Board, the Executive Committee, and the Steering Committee acted as the directing authority for establishing and managing the activities of a number of committees that investigated interservice training matters. Committee composition and representation were determined by discipline or subject matter area of responsibility. Usually, any interest or responsibility for conducting training in a specified career field resulted in membership on a committee or sub-committee. Course review committees in the missile and munitions career fields, for example, had representatives from the Army, the Navy, the Air Force, and the Marine Corps schools that had responsibility for training in those career fields.

The U. S. Army Missile and Munitions Center and School was first involved in the interservice training review activities by the Review Board action which directed the consolidation of common basic electronic training (COBET) among the services during the fiscal year 1975.²⁸

Course curriculum reviews for determining specific interservice commonality of training were structured around Department of Defense occupational conversion tables.²⁹ Specified criteria for determining

²⁸Letter, "Interservice Training Review (File ATTSIN." (Fort Monroe, Va.: U. S. Army Training and Doctrine Command, November, 1973), p. 1.

²⁹U. S. Department of Defense, Occupational Conversion Tables, DOD Pamphlet No. 1312.1-3 (Washington, D.C.: Office of Assistant Secretary of Defense, Manpower and Research Affairs, March, 1974); U. S. Department of Defense, Occupational Conversion Tables, DOD Pamphlet No. 1312.1-0 (Washington, D.C.: Office of Assistant Secretary of Defense, Manpower and Research Affairs, March, 1974).



SOURCE: U.S. DEPARTMENT OF THE ARMY, U.S. ARMY TRAINING AND DOCTRINE COMMAND, FORT MONROE, VIRGINIA, LETTER, "INTERSERVICE TRAINING REVIEW (FILE ATTSIN)", NOVEMBER 1973, P. II

Figure 9. Organizational, Interservice Training Reviews

the feasibility of common training stated that interservice courses:

1. Should not require a major capital investment in either facilities or equipment.

2. Should be approximately 75 per cent common in training tasks.³⁰

In January, 1975, a Curriculum Committee review of the data from the 1973-1974 interservice training all course review revealed that "the documentation on hand is not sufficiently detailed" to support the explanations of why consolidations were judged infeasible."³¹ A working definition for a major capital investment and a training task thus became a matter of concern in arriving at decisions about whether or not interservice consolidations of training would be attempted. Although job analysis could precisely identify jobs, different service schools expressed and documented job analyses and training tasks differently. More detailed analyses of the curriculum therefore were required to determine courses commalities. To avoid duplication of effort, procedures for accomplishing the work of curriculum development required standardization.³²

As evidenced by the existence of an nstructional Systems Development (ISD) Committee (see Figure 5), the potential problems had been recognized by the organization for Interservice Training Reviews

³⁰Letter, "Interservice Training Review (File ATTSIN)." (Washington, D.C.: Department of the Army), p. 3.

³¹Letter, "Interservice Training Review (ITR) 1975-1978 cycle (File ATTING-IN." (Fort Monroe, Virginia: U. S. Army Training and Doctrine Command, 5 February 1975), p. 1.

³²Ibid.

as early as 1972. Concern about the quality of curriculum reviews gave impetus to the generation of an instructional systems development model for the Army under contract between the Center of Educational Technology at Florida State University and the U. S. Army Combat Arms Training Board at Fort Benning, Georgia. As a result, the implication of an operational interservice procedure for instructional systems development suitable for all services became a top priority task for the Instructional Systems Development (ISD) Committee.³³

The development of a set of descriptive techniques and procedures for instructional systems development to fill a void in the Army's systems engineering procedures began in July, 1973, under contract between the Combat Arms Training Board and the Center for Educational Technology at Florida State University. When members of the Interservice Instructional Systems Development Committee recognized the opportunity to standardize the techniques and procedures of staff and faculty training and development in their services to the mutual benefit of all concerned, the scope of the contract was broadened to include the Air Force, the Navy, and the Marine Corps. Contributions of time and expertise from all four services, led by the organization for Interservice Training Reviews, resulted in the development and field training of the interservice procedures for instructional systems development during 1974 and 1975. When revisions were completed following the field evaluation, workshops were held for key staff and faculty managers in

³³Letter, "Interservice Training Review (RCS ATT-OT-19)." Fort Monroe, Virginia: U. S. Army Training and Doctrine Command, April 1974), p. 2.

the four services. The first jointly sponsored graduate level program in educational technology, specializing in the interservice procedures for instructional systems development, was conducted at Florida State University for the Army and Navy personnel during October and November, 1975.³⁴

The U. S. Army Missile and Munitions Center and School participated in the field testing of the IPISD model. For reasons outlined below, the model was adopted for ongoing curriculum development activities at the school in August, 1975.

1. The model's procedures for job-task analyses were required in the development of materials for the enlisted personnel management system.

2. Techniques for Developing Army Training and Evaluation programs and training extension course literature, which required collective job-task analyses of proposed specialties in missile and munitions units, were derived from the model.

3. The model provided standardized instructions for a more comprehensive analysis of the curriculum for use during future interservice training reviews.

The curriculum development activity for both training exported to the field and training in the traditional school environment was intensified by procedures specified in the IPISD model. The model also emphasized the use of modern instructional technology and the validation of materials by formative evaluation techniques.

³⁴Letter, "Allocation of Training Quotas to U. S. Army Missile and Munitions Center and School (File ATTING-TMZ)." (Fort Monroe, Virginia: U. S. Army Training and Doctrine Command, October, 1975).

The Instructional Systems Development Model

A brief description of the five-phase model follows.

Phase I, Analyze

Procedures were specified for defining jobs, for stating tasks required on each job, and for using numerical techniques to determine the best judgment of experienced professionals in selecting tasks for training. Phase I also included suggestions for constructing job performance measures and sharing occupational and training information within and among the services. A rationale for deciding whether training for tasks should be conducted in schools, on the job, or elsewhere was provided and the interaction between training and career progression was considered.³⁵

Phase II, Design

Techniques for dealing with various aspects of the training program within selected settings were specified in this phase of the model. Design was defined as the mode and structure in which tasks selected for training are classified and described. Phase II activities considered two separate kinds of entry behavior: general ability, and prior experience.³⁶

³⁵U. S. Army, Interservice Procedures for Instructional Systems Development, 5 vols. (Fort Benning, Georgia: U. S. Army Combat Arms Training Board, August 1975), I: 15-44.

³⁶Ibid., pp. 45-64.

Phase III, Development

Development was described as the actual preparation of instruction materials. In Phase III, decisions were made concerning the management of students, the planning of learning experiences and activities in which students were to be engaged, and the development of the form and content of the instructional delivery system. Techniques for reviewing existing materials and for designing instruction that could be delivered by a variety of media were outlined. Phase III ended when planned procedures were completed for testing and evaluating instruction to insure that job performance met expectations.³⁷

Phase IV, Implementation

Steps required to implement instruction according to the plan developed in Phase III were included. Two important steps were the training of the faculty in procedures and problems unique to the specific instruction and the teaching of the course. Phase IV effort continued as long as there was a need for instruction.³⁸

Phase V, Control

Procedures and techniques for maintaining instructional quality control standards and for providing feedback data from internal and external sources were contained in this phase of the model. Data collection, data evaluation, and decision-making about data implications were three principal functions described. Emphasis was placed

³⁷Ibid., pp. 65-92.

³⁸Ibid., pp. 93-102.

on determining if trainees were learning what was intended and if their learning was of the expected benefit. A negative response suggested that revisions be made in course content or instructional procedures to make the instruction meet the need for which it was intended.³⁹

To provide more effective management of curriculum development and thus the total training mission, a new organizational structure was required. Under IPISD, the total training system was perceived as being three separate but interrelated subsystems: (1) combat development; (2) training development; and (3) delivering instruction.

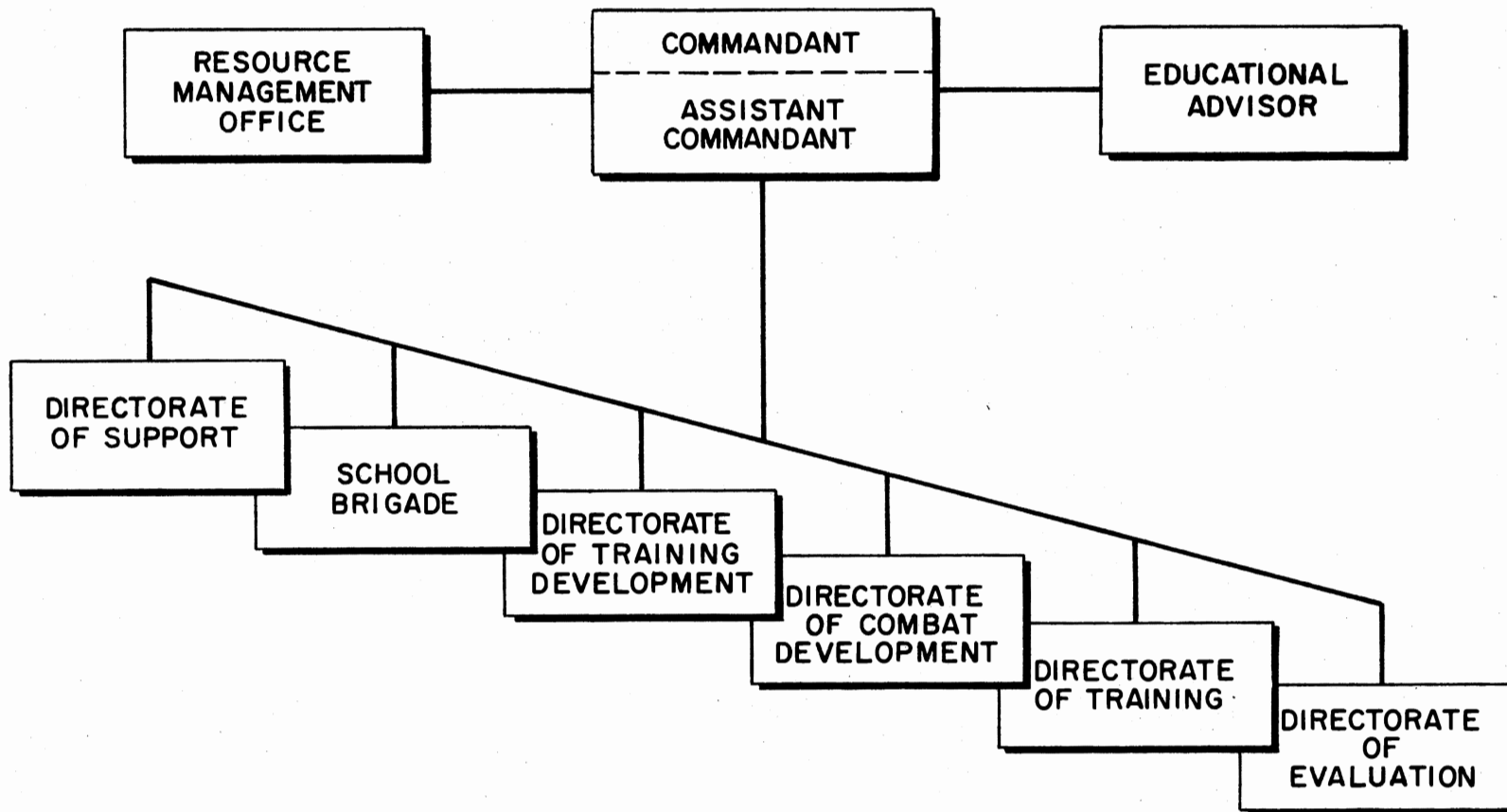
The organizational structure (School Model 76) prescribed for Army Schools that operated under IPISD concepts is shown in Figure 6. Missions assigned to the organizational elements, as stated in the literature, are as follows:

1. Office of the Commandant: "Exercises command and general supervision over all elements assigned or attached to the school."⁴⁰
2. Educational Advisor: "Advises the Commandant on all aspects of training, training developments, evaluation, staff and faculty training and development, and educational matters."⁴¹
3. Resource Management Office: "Exercises responsibility for financial management, manpower management, school organization, and approved management programs in coordination with the supporting

³⁹Ibid., pp. 103-120.

⁴⁰U. S. Army, Staffing Guide for U. S. Army Service Schools, 2nd ed., Pamphlet No. 570-558. (Washington, D.C.: U. S. Army, April, 1976), Chapt. II, p. 1.

⁴¹Ibid., p. 4.



SOURCE: U.S. DEPARTMENT OF THE ARMY, STAFFING GUIDE FOR U. S. ARMY SERVICE SCHOOL, 2nd REV., PAMPHLET No. 570-558 (WASHINGTON, D.C.: HEADQUARTERS, DEPARTMENT OF THE ARMY, APRIL 1976), CHAP. I, P. 16.

Figure 10. School Model 76, Organization Under IPISD Concepts

installation counterpart."⁴²

4. Directorate of Support: "Established administrative policies of the school. Advises school activities on administrative and logistics matters. Directs maintenance of all academic records."⁴³

5. School Brigade: "Commands, controls, and coordinated administrative and logistical support to all military personnel assigned or attached to the brigade."⁴⁴

6. Directorate of Combat Development: "Supervises and Administratively supports subordinate elements engaged in performance of assigned functions related to combat development."⁴⁵

7. Directorate of Training Development: "Supervises and administratively supports subordinate elements engaged in performance of assigned functions related to training developments."⁴⁶

8. Directorate of Evaluation: "Supervises and administratively supports subordinate elements engaged in performance of assigned functions related to quality control testing and evaluation of individual and collective proficiency."⁴⁷

9. Directorate of Training: "Supervises and administratively supports subordinate elements engaged in performance of assigned functions related to training and education."⁴⁸

⁴²Ibid., p. 5.

⁴³Ibid., p. 10.

⁴⁴Ibid., p. 43.

⁴⁵Ibid., p. 65.

⁴⁶Ibid., p. 83.

⁴⁷Ibid., p. 123.

⁴⁸Ibid., p. 132.

The Directorate of Evaluation was primarily concerned with an objective evaluation of functions performed by the Directorate of Combat Development, the Directorate of Training to identify problems that impaired the effectiveness of training. A further concern was in pinpointing responsibilities to develop alternate solutions for resolving those problems.⁴⁹

The Development of Criteria upon which the chief executive officer (Commandant) could judge the degree of synergy attained by the three major subsystems was an inherent part of the mission assigned to the Directorate of Evaluation.

Staff and Faculty Career Developments

General Information

The basic policies for career management of military personnel assigned to the school were contained in regulatory publications referred to as the (1) Officer Personnel Management System (OPMS), (2) Warrant Officer Personnel Management System (WOPMS), and (3) the Enlisted Personnel Management System (EPMS).⁵⁰ Career management policies for most of the civilians who work at the school were

⁴⁹ Ibid., p. 123.

⁵⁰ See Army publications in the 600 Series (Personnel), such as U. S. Department of the Army, Officer Personnel Management System, Regulation No. 600-101. (Washington, D.C.: Headquarters, U. S. Army, April, 1975; and U. S. Department of the Army, Enlisted Personnel Management Systems, Regulation No. 600-200. (Washington, D.C.: U. S. Army, March, 1975).

contained in Civilian Personnel Regulations (CPR's).⁵¹

The military and civilian team structure was necessary because each of the two personnel categories made distinctly different contributions to the training mission. The team structure stemmed from the fact that the school employed its military alumni, who had gained field experience, as subject matter specialists to develop the curriculum and to provide in-service training for others in the same career fields while its civilian employees provided the pedagogical skills. Thus, a military-civilian team was the basic unit for the training developments, the military providing the expertise in the job specialty and the civilian providing the expertise in the pedagogical matters.

Upon initial assignment to the school, both military and civilian members of the staff and faculty were usually well qualified in their particular areas of expertise. Responsibility for maintaining professional skills was therefore a matter of concern for both the individual and the establishment. The organization responsible for staff and faculty training at the school was the Staff and Faculty Development Office.⁵²

The military-civilian team structure and the need for staff and faculty members to keep abreast of current technology--either subject matter or pedagogical--were clearly strong candidates for creating

⁵¹U. S. Department of the Army, Career Management Basic Policies and Requirements, Regulation 950-1. (Washington, D.C.: Headquarters, Department of the Army, March, 1971).

⁵²U. S. Department of the Army, Staffing Guide, Chap. II, p. 140.

impediments to synergy. Since instruction on current missile and munitions technology--by the most effective and efficient means available--was the heart of the school's training mission, in-service training designed to counteract adverse impacts on the military-civilian team structure and those of obsolete technology were the primary objectives of in-service staff and faculty training and development programs. Four types of in-service training programs were required, as follows:

1. Subject matter training for education specialists.
2. Pedagogical instruction for subject matter specialists.
3. Innovations and advance instructional technology for all assigned personnel.
4. Technological advances in subject matter areas for all assigned personnel.

Subject Matter Training for Education Specialists

Although subject matter training suitable for the objective existed in abundance at the school, the degree to which an individual was successful in obtaining the required training seemed to hinge more on duty position assignment than other factors. Exposure to subject matter training could come in a variety of ways, institutional or extension. However, specialists who worked in the delivery subsystem enjoyed a distinct advantage over others. The basic problem appeared to stem from a lack of a standardized, formal planning procedure rather than a deficiency in the quantity of quality of training available.

Innovations and Advanced Instructional
Technology for all Assigned Personnel

The latest instructional innovations mentioned during in-service training offered at the school were programmed instruction and television. Since expertise existed at the school in such areas as self-paced instruction, computer assisted instruction, simulations, and various multimedia devices, the problem seemed to stem from a lack of planning to accomplish the objective. Gullick's study of the problem concluded that:

Personnel designated to make media decisions were not educated, trained, or experienced in many of the tasks they were to perform.

Instructor personnel conducted learning exercises using methods or media with which they had little or no experience, training, or formal education.

There was no firm training plan to upgrade the expertise of each staff and faculty member relating to methods and media.⁵⁴

Technological Advances in Subject Matter
Areas for All Assigned Personnel

Few schools, if any, in the Army's system were effected more by technological changes than the U. S. Army Missile and Munitions Center and School. The magnitude of the communication problem in distributing information concerning technological changes worldwide staggers the

⁵⁴John M. Gullick, Jr., "Strategy for More Effective Selection and Use of Methods and Media in the U. S. Army Missile and Munitions Center and School" (Ed.D. dissertation, University of Alabama, 1974.)

Pedagogical Instruction for Subject
Matter Specialists

The Staff and Faculty Developments Office offered a number of courses designed to accomplish the objective. Excerpts of course descriptions offered at the school at the time of this study appear in Appendix A.

The Basic Methods of Instruction course, the Counseling and Guidance course, and the Instructional Systems Development Workshop represented the bulk of instruction on pedagogical disciplines and doctrines. Most of the instruction presented during the courses named above concerned the mechanics of teaching, the techniques of counseling, and the writing of curriculum materials. As a result, little time was left to deal with the concepts and principles of psychology, sociology, curriculum development, and instructional technology. It also was noted that less than 15 per cent of the faculty had received formal training on the school's adopted IPISD model.⁵³ Since all of those trained had not been assigned to the Directorate of Training Development, the principle user of the model, less than 25 per cent of its staff were formally trained in the prescribed IPISD procedures for accomplishing the work of curriculum development.

⁵³U. S. Department of the Army, Operating Files. (Redstone Arsenal, Alabama: U. S. Army Missile and Munitions Center and School, Staff and Faculty Training Division).

imagination. The primary responsibility for distributing such data was a mission assigned to the Directorate of Combat Development. The Directorate employed a variety of techniques to accomplish the task.

Among the more successful procedures were:

1. Monthly summaries of activities dealing with combat developments that were distributed to key organizational elements.
2. Frequent personnel contacts were made between combat developers and representatives of organizations with a need to know.
3. Informal, small assemblies were held with key personnel of the organizations affected most by a specific change.
4. Infrequent, but large assemblies were conducted when the scope of the project indicated such a need.⁵⁵

This is where we are now in terms of development.

Summary

This Appendix has been devoted to an analysis of the historical data concerning matters that led to an expanded scope and extended arena of in-service staff and faculty training and development at the U. S. Army Missile and Munitions Center and School. The analysis reveals actions taken by the school to keep pace with:

⁵⁵U. S. Department of the Army, Operating Files. (Redstone Arsenal, Alabama: U. S. Army Missile and Munitions Center and School, Directorate of Evaluation).

1. The forces of an expanding and advancing technology that brought about the expanded scope of the in-service staff and faculty training and development.
2. The interservice and intraservice influences that brought about the extended arena of staff and faculty training and development activity.
3. The criteria for evaluating the manner in which the Directorate of Training Development was directed or guided in the processes, structured for the purposes, and provided the means to accomplish its mission of staff and faculty training and development.

The historical information summarized in the appendix was obtained from a review of available institutional literature and from structured interviews with appropriate personnel assigned to the school.

APPENDIX B

A NEEDS-ASSESEMNT SURVEY SPONSORED BY THE UNITED
STATES ARMY MISSILE AND MUNITIONS CENTER AND
SCHOOL, REDSTONE ARSENAL, ALABAMA

STAFF AND FACULTY DEVELOPMENT PREFERENCES OF
UNITED STATES ARMY MISSILE AND MUNITIONS
CENTER AND SCHOOL, REDSTONE ARSENAL,
ALABAMA, 35805

A Needs-Assessment Survey Sponsored by the United
States Army Missile and Munitions Center and
School

DIRECTIONS:

1. Please remove the Answer Sheet which is the last page of this booklet. Answer all questions on the answer sheet.
2. Please respond by circling numbers, checking columns, or writing answers, as each question indicates.
3. Please return the Answer Sheet to:

"THANK YOU VERY MUCH FOR YOUR HELP"

A. U. S. Army Missile and Munitions Center and School Staff and Faculty Training and Development Programs.

A1. Does MMCS provide staff and faculty training and development programs for all staff and faculty personnel on a fairly regular basis:
(Circle one number on the Answer Sheet.) 1) Yes 2) No

A2. If your answer to Question # 1 was yes," upon which of the following bases is participation in the majority of these programs determined?
(Circle one number on the Answer Sheet.)

- 1) Open to all interested personnel
- 2) Mandated for all personnel
- 3) Mandated for certain personnel
- 4) Open by invitation only
- 5) Other (specify)

A3. Does MMCS maintain a staff that is responsible for providing staff and faculty training and development for all personnel.
1) Yes 2) No

B. General Interest in In-Service Training Programs

B1. In general, which of the following represents your interest in attending in-service staff and faculty training and development programs:

- 1) High
- 2) Medium
- 3) Low
- 4) Not at all interested

B2. Assuming that programs concerning topics of your interest were available, approximately how much time would you be willing to spend attending in-service staff and faculty training and development programs during a fiscal year:

- 1) 1 day
- 2) 2 days
- 3) 3 to 5 days
- 4) 6 to 10 days
- 5) more than 10 days
- 6) no time at all

B3. How much release time could you realistically expect to obtain during a fiscal year that you would be willing to devote to your own in-service training?

- 1) 1 day
- 2) 2 days
- 3) 3 to 5 days
- 4) 6 to 10 days
- 5) more than 10 days
- 6) no time at all

B4. In general, which of the following agencies do you think should have primary responsibility for designing in-service staff and faculty training and development programs for personnel of MMCS.

- 1) U. S. Army Training and Doctrine Command
- 2) USAMMCS
- 3) Local consortia of supervisors
- 4) University-related agencies
- 5) Other Army Service Schools
- 6) Other (specify)

B5. Please indicate the extent to which the presence of each of the following features would affect your decision to attend an in-service program. (Check one column for each of the items listed below according to the following descriptors:)

Strongly Attractive - would positively affect my decision to attend.

Attractive - a 'nice' feature to have attached to a program, but would not affect my decision to attend.

Inconsequential - would have no effect upon my decision to attend and would not care if it were present or not.

Detractive - would have a negative effect upon my decision to attend.

- 1) Promotion to higher pay grade
- 2) Obtaining released time
- 3) University credit
- 4) Meet Army requirements
- 5) Certificate of achievement
- 6) Program held in "attractive" location
- 7) Widespread participation by peers
- 8) Presentation by recognized scholar in field
- 9) Opportunity to travel
- 10) TDY with per diem

B6. Of the list of features presented in Question B5 above, which feature is most attractive to you?

B7. Excluding regular coursework at a university approximately how many days did you devote to organized in-service staff and faculty training and development programs last year?

- | | | |
|-----------|-----------------|----------------------|
| 1) 1 day | 3) 3 to 5 days | 5) more than 10 days |
| 2) 2 days | 4) 6 to 10 days | 6) no time at all |

- B8. Did you take any classes at a university last year?
- 1) Yes, during the summer
 - 2) Yes, during the school year
 - 3) Yes, during both the school year and summer
 - 4) No
- B9. Excluding coursework at a university, how many different in-service programs did you attend last year?
- | | | |
|---------|----------|-------------------|
| 1) None | 3) Two | 5) Four |
| 2) One | 4) Three | 6) More than four |
- B10. Did you attend as many in-service programs last year as you would have liked to attend? 1) Yes 2) No
- B11. If your answer to question B10 above was "No" which of the following responses best describes your reason for not attending any (or any other) in-service programs?
- 1) I could not locate no (no other) programs which were of interest.
 - 2) I could locate no (or no other) programs which were scheduled at times I could attend.
 - 3) I generally find in-service programs to be a "waste of time."
 - 4) I could not obtain any (or any additional) released time.
 - 5) I could not obtain any (or any additional) support funds for travel and/or fees.
 - 6) My job responsibilities would not permit any (or any additional) absence.
 - 7) Other (specify)
- B12. Within the last two years, was there a particular in-service program which you would have liked to attend but could not or did not attend? 1) Yes 2) No
- B13. If your response to Question B12 above was "yes" which of the following categories best describes your reason for not attending the program?
- 1) I did not learn of the program until it was too late to make the necessary arrangements for attending.
 - 2) I could not obtain released time.
 - 3) The program occurred at a time when my job responsibilities required my continuous attention.
 - 4) I could not secure the necessary funds for travel/or fees.
 - 5) My superiors took a dim view of my participation.
 - 6) Other (specify)

C. Experience-Interest Inventory

- C1. For each topic listed on the facing page, top, please indicate your experience and interest in or need for in-service staff and faculty training and development programs. For each topic check one space in the Experience column and one space in the Interest-Need column according to the following definitions:

Experience Categories:

Expertise - practiced in area extensively and could serve as a consultant.

Some Experience - worked in area, but not expert.

Some Knowledge - familiarity with some concepts, but have not worked in this area.

No Knowledge - Very slight or no experience or knowledge in area.

Interest-need Categories:

Very strong - if at all possible would participate in an in-service program on this topic.

Strong - would probably enroll in an in-service program on this topic.

Moderate - would enroll in an in-service program on this topic only if it were "convenient."

None - would not attend in-service program on this topic.

- 1) Staff and Faculty involvement in decision-making
- 2) Affective training
- 3) Military methods of instruction
- 4) Alcohol and drug education
- 5) Appreciation of the systems approach to management
- 6) Career development training
- 7) Collective negotiation and grievance procedures
- 8) Techniques of ETV instruction
- 9) Conflict management
- 10) Audio-Visual equipment
- 11) Instructional methods
- 12) Programmed instruction
- 13) Computer assisted instruction (CAI)
- 14) Learning behavior
- 15) Media selection
- 16) Supervision of instruction
- 17) Projectionists course
- 18) Training supervisors course
- 19) Techniques of CAI
- 20) A lesson plan writing course
- 21) A linear and branching programmed instruction text writing course
- 22) Use of programmed instructor text in instruction
- 23) How to conduct a seminar
- 24) How to act in ETV production

- 25) How to write on ETV script
- ✓26) How to use a case study in instruction
- 27) How to use a film to support instruction
- ✓28) Instructional Systems Development (ISD)
- ✓29) Guidance and Counseling Course
- 30) Documentation Course
- 31) Organization development
- 32) Planning and development affirmative action programs
- 33) Human relation in administration
- 34) Program, Planning, Budgeting, Evaluation Systems (PPRS)
- 35) Role of DA and TRADOC in Training
- 36) MMCS - Community relations
- 37) Staff development
- 38) Staff and faculty selection and termination
- 39) AFGE Role at MMCS
- 40) Differentiated staffing
- ✓41) Developing effective communication patterns within MMCS
- 42) Due process and statutory rights in staff and student personnel administration
- 43) Evaluating administrators and supervisors
- 44) Evaluating the instructional staff and faculty
- 45) Developing training goals and objectives
- ✓46) Criterion referenced testing and student assessments
- ✓47) Time management (effective time utilization)
- ✓48) Psychology of Human Relations
- 49) Clear Writing
- 50) Reading Improvement
- 51) Building Word Power I
- 52) Building Word Power II
- 53) Developing Reading and Comprehensive Skills
- ✓54) Report Writing
- 55) Basic Management Functions
- 56) Basic Management Methods and Skills
- ✓57) Psychology and Management of Human Resources
- ✓58) Supervision and Group Performance
- ✓59) Human Relations at Work
- ✓60) Creative Problem Solving
- 61) Advanced Creative Problem Solving
- ✓62) Improving Communications with the Public
- ✓63) Organization Planning
- 64) Productivity Orientation Seminar
- ✓65) Human Behavior in Organization
- 66) Introduction to Supervision and Management
- ✓67) Educational Psychology
- ✓68) Audio Visual Instruction
- ✓69) Principles in Teaching
- 70) History and Philosophy of Education
- ✓71) Tests and Measurements
- ✓72) Human Growth and Development
- ✓73) Directed Teaching
- ✓74) General Psychology
- ✓75) Guidance for Teachers

- 76) Special Problems in Education, Group Processes 1, II, III
- ✓ 77) Diagnostic and Prescriptive Teaching
- 78) Statistics
- 79) English Composition
- 80) Speech Techniques
- 81) Illustration
- 82) Public Speaking
- 83) Voice and Diction
- 84) Fundamentals of Speech
- 85) Essentials of Management
- ✓ 86) Organizational Behavior
- ✓ 87) Foundations and Problems in Education
- ✓ 88) Techniques of Curriculum Development
- ✓ 89) Educational Research
- 90) Educational Statistics
- ✓ 91) Educational Organization, Administration and Supervision
- 92) School Finance and Business Administration
- 93) Organization, Supervision and Administration of Educational Media
- 94) School Law

C2. Of all the topics listed in Question C1 above, which two would be of greatest interest to you as basis for in-service programs? (In the space indicated on the Answer Sheet, write the numbers of the two topics.)

✓ D. Preferred Format for In-Service Programs

In answering the questions in this section, please assume that we are discussing the elements of an in-service program on a topic of strong interest to you. That is, assume that you are committed to participate in an in-service program and we are now trying to fit the format of that program to your preferences. Naturally, these preferences must be tempered by the realities of your job responsibilities. Please try to balance these factors in answering the questions.

D1. Given the dictates of reality, when should in-service training programs be held?

- 1) during the fiscal year
- 2) on holidays and vacations
- 3) during summer vacation
- 4) other (specify)

D2. If an in-service program were held during the fiscal year, when should it be scheduled?

- 1) on weekends
- 2) during the "working day"
- 3) after working hours

D3. If an in-service program were scheduled during the fiscal year, during which three months (not necessarily consecutive) would it be most convenient for you to attend? (Circle three numbers on the Answer Sheet.)

- | | | |
|--------------|-------------|----------|
| 1) September | 5) January | 8) April |
| 2) October | 6) February | 9) May |
| 3) November | 7) March | 10) June |
| 4) December | | |

D4. Generally speaking, which type of in-service programs do you prefer?

- 1) intensive (only one gathering of the participants which may last one or more days)
- 2) continuing (a series of gatherings on a weekly or monthly basis)

D5. If you were to participate in an in-service program to be held within easy commuting distance and requiring six meetings of the participants (i.e., continuing), according to which schedule would you prefer that the meetings be held?

- 1) on consecutive days or nights
- 2) weekly
- 3) bi-weekly
- 4) monthly

D6. What is the maximum one-way distance you would travel to attend an in-service program and still consider the location of the program to be within "easy commuting distance?"

- | | |
|-------------|------------------------|
| 1) 5 miles | 5) 100 miles |
| 2) 10 miles | 6) 200 miles |
| 3) 20 miles | 7) more than 200 miles |
| 4) 50 miles | |

D7. If you were to participate in an in-service program which had only one gathering of the participants (i.e., "intensive"), what is the maximum number of days which you feel you could/prefer to leave your job and attend the program?

- | | |
|----------------|----------------------------|
| 1) 1 day | 4) 6 to 10 days |
| 2) 2 days | 5) more than 10 days |
| 3) 3 to 5 days | 6) could not attend at all |

- D8. If you were to participate in an in-service program of three days duration, which location would you prefer?
- 1) within easy commuting distance
 - 2) in a distant city known for its tourist facilities
- D9. If you were to participate in an in-service program held in a city known for its tourist facilities, which particular city would you find most desirable?
- D10. Generally speaking and in terms of promoting your own learning, what is your preferred maximum duration for a lecture?
- 1) 15 minutes
 - 2) 30 minutes
 - 3) 1 hour
 - 4) 1½ hours
 - 5) 2 hours
 - 6) longer than 2 hours
- D11. Generally speaking and in terms of promoting your own learning, what is your preferred maximum duration for a discussion session?
- 1) 15 minutes
 - 2) 30 minutes
 - 3) 1 hour
 - 4) 1½ hours
 - 5) 2 hours
 - 6) longer than 2 hours
- D12. Generally speaking and in terms of promoting your own learning, what is your preferred maximum size of a discussion group?
- 1) 5 or fewer people
 - 2) 6 to 10 people
 - 3) 11 to 15 people
 - 4) 16 to 20 people
 - 5) 21 to 30 people
 - 6) more than 30 people
- D13. In general, in what size group do you feel most comfortable and most effective?
- 1) programs with fewer than 10 participants
 - 2) 10 to 25 participants
 - 3) 26 to 50 participants
 - 4) 50 to 100 participants
- D14. In general, which of the following groups is preferable in the role of staff and faculty trainer in an in-service program?
- 1) MMCS supervisors
 - 2) university professors
 - 3) "in-house" directors of staff development
 - 4) other (specify)

D15. Which of the following locations do you find most attractive for housing an in-service program?

- 1) school within easy commuting distance
- 2) nearby university
- 3) nearby convention facility
- 4) nearby retreat facility
- 5) non-local school
- 6) non-local university
- 7) attractive city at some distance from home

D16. Assuming that each of the following modes of instruction is presented expertly, please indicate your degree of preference for each: (Check one column for each item.)

- 1) lecture
- 2) discussion groups
- 3) simulation
- 4) gaming
- 5) computer-assisted instruction
- 6) programmed learning
- 7) independent study
- 8) tele-lecture
- 9) films
- 10) case study
- 11) site visit
- 12) role playing
- 13) O.D. (organizational developmental) process techniques
- 14) supervised readings
- 15) internship experience

D17. From the list of instructional modes in Question 16 above, which is your most preferred mode?

D18. From the list of instructional modes in Question 16 above, which is your least preferred mode?

APPENDIX C

THE RESULTS OF THE EXPERIENCE-INTEREST
INVENTORY

RESULTS OF THE EXPERIENCE-INTEREST INVENTORY

TOPICS	RESPONSES							
	EXPERIENCE				INTEREST-NEED			
	EXPERTISE	SOME EXPERIENCE	SOME KNOWLEDGE	NO KNOWLEDGE	VERY STRONG	STRONG	MÖDERATE	NONE
1) Staff and Faculty Involvement in Decision Making	13(9.9)	52(39.4)	45(34.1)	22(16.7)	37(28.5)	40(30.8)	42(32.3)	11(8.5)
2) Affective Training	21(15.7)	57(42.5)	34(25.4)	22(16.4)	35(26.9)	39(30.0)	42(32.3)	14(10.8)
3) Military Methods of Instruction	50(37.0)	59(43.7)	16(11.9)	10(7.4)	35(27.1)	41(31.8)	35(27.1)	18(14.0)
4) Alcohol and Drug Education	9(6.8)	44(33.1)	55(41.4)	25(18.8)	31(23.8)	25(19.2)	46(35.0)	25(21.6)
5) Appreciation of the System Approach to Management	8(6.0)	28(21.1)	62(46.6)	35(26.3)	33(25.8)	33(25.8)	46(35.9)	16(12.5)
6) Career Development Training	14(10.5)	51(38.3)	51(38.3)	17(12.8)	56(35.1)	43(32.8)	33(25.2)	9(6.9)
7) Collective Negotiations and Grievance Procedures	3(2.3)	19(14.3)	48(36.1)	63(47.4)	20(15.4)	29(22.3)	45(34.6)	36(27.7)
8) Techniques of ETV Instruction	2(1.5)	32(23.9)	51(38.1)	49(36.6)	20(15.4)	38(29.2)	49(37.7)	23(17.7)
9) Conflict Management	2(1.5)	22(16.5)	39(29.3)	70(52.6)	14(10.7)	32(24.4)	50(30.2)	35(26.1)
10) Audio-Visual Equipment	9(6.8)	46(34.6)	59(44.4)	19(14.3)	25(19.2)	41(31.5)	47(26.2)	17(13.0)
11) Instructional Methods	30(22.4)	56(41.8)	35(26.1)	13(9.7)	30(23.8)	42(33.3)	38(30.2)	16(12.7)
12) Programmed Instruction	14(10.4)	46(34.1)	52(38.5)	23(17.0)	23(17.8)	36(27.9)	48(37.2)	22(17.0)
13) Computer Assisted Instruction (CAI)	11(8.1)	20(14.8)	52(38.5)	52(38.5)	23(17.8)	43(33.3)	39(30.2)	24(18.6)
14) Learning Behavior	11(8.1)	36(26.7)	66(48.9)	22(16.3)	34(25.8)	40(30.3)	43(32.6)	15(11.4)
15) Media Selection	8(6.0)	37(27.6)	50(37.3)	39(29.1)	23(17.7)	46(35.4)	41(31.5)	20(15.4)
16) Suspension of Instruction	22(16.5)	52(39.1)	37(27.8)	22(16.5)	29(22.1)	50(38.2)	30(22.9)	22(16.8)
17) Projectionists Course	13(9.8)	39(29.3)	43(32.3)	38(28.6)	15(11.5)	25(19.2)	50(38.5)	40(30.8)
18) Training Supervisors Course	14(10.5)	47(35.3)	43(32.3)	29(21.8)	35(26.9)	36(27.7)	40(30.8)	19(14.6)
19) Techniques of CAI	8(6.1)	14(10.6)	51(38.6)	59(44.7)	24(18.3)	31(23.7)	47(35.9)	29(22.1)
20) A Lesson Plan Writing Course	33(24.6)	55(41.0)	29(21.6)	17(12.7)	26(20.0)	36(27.7)	40(30.8)	28(21.5)
21) A Linear and Branching Programmed Instruction Text Writing Course	9(6.8)	25(18.8)	40(30.0)	59(44.4)	21(16.2)	24(18.5)	51(39.2)	34(26.1)
22) Use of Programmed Instruction Text in Instruction	9(6.8)	30(22.7)	59(44.7)	34(25.8)	15(11.7)	34(26.6)	49(38.3)	30(23.4)
23) How to Conduct a Seminar	12(9.0)	33(24.8)	42(31.6)	46(34.6)	29(22.5)	35(27.1)	36(27.9)	29(22.1)
24) How to Act in ETV Production	7(5.3)	15(11.3)	35(26.3)	76(57.1)	20(15.4)	22(16.9)	44(33.8)	44(33.8)
25) How to Write ETV Scripts	6(4.5)	15(11.3)	37(27.8)	75(56.4)	23(17.8)	27(20.9)	40(31.0)	39(30.2)

RESULTS OF THE EXPERIENCE-INTEREST INVENTORY (Continued)

TOPICS	RESPONSES								
	EXPERIENCE				INTEREST-NEED				
	EXPERTISE	SOME EXPERIENCE	SOME KNOWLEDGE	NO KNOWLEDGE	VERY STRONG	STRONG	MODERATE	NONE	
26) How to Use Case Study in Instruction	12(9.1)	36(27.3)	45(34.1)	39(29.5)	24(18.6)	33(25.6)	45(34.9)	27(20.9)	
27) How to Use Films to Support Instruction	11(8.1)	69(51.9)	35(26.3)	18(13.5)	23(17.7)	41(31.5)	41(31.5)	25(19.2)	
28) Instructional Systems Development (ISD)	12(9.0)	28(21.1)	48(36.1)	45(33.8)	30(23.1)	32(24.6)	42(32.3)	26(20.0)	
29) Guidance and Counseling Course	16(12.3)	6 (48.4)	30(23.1)	21(16.2)	32(25.0)	36(28.1)	36(28.1)	24(18.8)	
30) Documentation Course	18(13.4)	40(29.9)	38(28.4)	38(28.4)	28(21.5)	36(27.7)	38(29.2)	28(21.5)	
31) Organization Development	14(10.5)	33(24.8)	51(38.3)	35(26.3)	26(20.1)	37(28.7)	40(31.0)	26(20.1)	
32) Planning and Development Affirmative Action Programs	6(4.5)	21(15.8)	43(32.3)	63(47.4)	21(16.3)	32(24.8)	42(32.6)	34(26.4)	
33) Human Relation In Administration	8(6.1)	43(32.6)	52(39.4)	29(22.0)	38(29.5)	32(24.8)	36(27.9)	23(17.8)	
34) Program, Planning, Budgeting, Evaluating Systems	6(4.5)	23(17.3)	44(33.1)	60(45.1)	22(17.1)	39(30.2)	33(25.6)	35(27.1)	
35) Role of DA and TRADOC In Training	7(5.3)	23(17.3)	63(47.4)	40(30.1)	24(18.3)	41(31.3)	37(28.2)	29(22.1)	
36) MMCS - Community Relations	3(2.3)	23(17.6)	53(40.5)	52(39.7)	18(14.0)	32(24.8)	44(34.1)	35(27.1)	
37) Staff Development	10(7.5)	28(21.0)	52(39.1)	43(32.3)	25(19.4)	39(30.2)	43(33.3)	22(16.9)	
38) Staff and Faculty Selection and Termination	8(6.0)	19(14.3)	52(39.1)	54(40.6)	26(20.0)	37(28.7)	39(30.2)	27(20.9)	
39) AFGE Role at MMCS	2(1.5)	11(8.3)	52(39.0)	68(51.1)	21(16.2)	24(18.5)	39(30.0)	46(35.4)	
40) Differentiated Staffing	3(1.5)	7(5.3)	32(24.2)	90(68.2)	15(11.5)	25(19.2)	46(35.4)	44(33.8)	
41) Developing Effective Communication Patterns Within MMCS	8(6.0)	24(18.0)	49(36.8)	52(39.1)	32(25.0)	38(29.7)	32(25.0)	26(20.3)	
42) Due Process and Statutory Rights and Student Personnel Administration	2(1.5)	30(22.6)	43(32.3)	58(43.6)	24(18.5)	43(33.1)	36(27.7)	27(20.8)	
43) Evaluating Administrators and Supervisors	8(6.0)	35(26.1)	45(33.6)	46(34.3)	34(26.4)	38(29.5)	33(25.6)	24(18.6)	
44) Evaluating the Instructional Staff and Faculty	12(8.9)	47(35.0)	40(29.9)	35(26.1)	33(25.6)	38(29.5)	31(24.0)	27(20.9)	
45) Developing Training Goals and Objectives	18(13.5)	54(40.6)	35(26.3)	26(19.5)	36(28.1)	45(35.1)	28(21.9)	19(14.8)	
46) Criterion Referenced Testing and Student Assessments	7(5.3)	47(35.6)	36(27.2)	42(31.8)	36(28.3)	33(26.0)	32(25.2)	26(20.4)	

RESULTS OF THE EXPERIENCE-INTEREST INVENTORY (Continued)

TOPICS	RESPONSES							
	EXPERIENCE				INTEREST-NEED			
	EXPERTISE	SOME EXPERIENCE	SOME KNOWLEDGE	NO KNOWLEDGE	VERY STRONG	STRONG	MODERATE	NONE
47) Time Management (effective time utilization)	10(7.6)	32(24.2)	58(43.9)	32(24.2)	31(23.8)	37(28.5)	36(27.7)	26(20.0)
48) Psychology of Human Relations	6(4.5)	46(34.3)	57(42.5)	25(18.7)	39(29.8)	44(33.6)	29(22.1)	19(14.5)
49) Clear Writing	12(8.8)	62(45.6)	47(34.6)	15(11.0)	42(31.8)	44(33.3)	32(24.2)	14(10.6)
50) Reading Improvement	8(5.9)	53(39.0)	55(40.4)	20(14.7)	47(35.6)	47(35.6)	25(18.9)	13(9.8)
51) Building Word Power I	5(3.7)	47(35.1)	53(39.6)	29(21.6)	40(30.0)	44(33.0)	31(23.3)	18(13.5)
52) Building Word Power II	4(3.0)	48(35.8)	52(38.8)	30(22.4)	34(25.8)	52(39.4)	29(22.0)	17(12.9)
53) Developing Reading and Comprehension Skills	5(3.7)	46(34.3)	55(41.0)	28(20.9)	37(28.0)	57(43.2)	25(18.9)	13(9.8)
54) Report Writing	12(9.0)	47(35.0)	54(40.3)	21(15.7)	46(34.8)	40(30.3)	32(24.2)	14(10.6)
55) Basic Management Functions	13(9.7)	59(44.0)	41(30.6)	21(15.7)	44(33.6)	46(35.1)	25(19.1)	16(12.2)
56) Basic Management Methods and Skills	12(9.0)	54(40.6)	45(33.8)	22(16.5)	46(34.8)	41(31.1)	30(22.7)	15(11.4)
57) Psychology and Management of Human Resources	11(8.3)	39(29.3)	51(38.3)	32(24.1)	51(38.9)	38(29.0)	27(20.6)	15(11.4)
58) Supervision and Group Performance	10(7.5)	45(33.8)	47(35.3)	31(23.3)	36(27.5)	42(32.0)	32(24.4)	21(16.0)
59) Human Relations at Work	10(7.5)	39(29.3)	59(44.3)	25(18.8)	33(25.0)	45(34.0)	33(25.0)	21(15.9)
60) Creative Problem Solving	6(4.5)	40(30.0)	54(40.6)	33(24.8)	38(28.8)	38(28.8)	39(29.5)	17(12.9)
61) Advanced Creative Problem Solving	5(3.8)	25(18.8)	55(41.3)	48(36.0)	38(28.8)	35(26.5)	40(30.3)	19(14.4)
62) Improving Communications with the Public	3(2.3)	35(26.3)	54(40.6)	41(30.8)	26(19.8)	48(36.6)	38(29.0)	19(14.5)
63) Organization Planning	5(3.8)	36(27.1)	53(39.9)	39(29.3)	27(20.6)	41(31.3)	43(32.8)	20(15.3)
64) Productivity Orientation Seminar	2(1.5)	23(17.6)	45(34.4)	61(46.6)	18(14.1)	37(28.9)	43(33.6)	30(23.4)
65) Human Behavior in Organization	4(3.0)	40(30.1)	55(41.4)	34(25.6)	31(23.7)	46(35.1)	34(26.0)	20(15.3)
66) Introduction to Supervision and Management	11(8.3)	46(34.6)	41(30.8)	35(26.3)	38(29.2)	46(35.4)	26(20.0)	20(15.4)
67) Educational Psychology	10(7.5)	37(27.8)	48(36.1)	38(28.6)	40(30.5)	43(32.8)	28(21.4)	20(15.4)
68) Audio Visual Instruction	6(4.5)	44(33.1)	49(36.8)	34(25.6)	26(19.8)	43(32.8)	34(26.0)	28(21.4)
69) Principles in Teaching	10(7.5)	53(43.6)	37(27.8)	28(21.1)	26(20.0)	48(36.9)	37(28.5)	19(14.6)
70) History and Philosophy of Education	9(6.7)	28(20.9)	54(40.3)	43(32.1)	29(22.3)	33(25.4)	36(27.7)	32(24.6)
71) Tests and Measurements	6(4.5)	55(41.0)	45(33.6)	28(20.9)	39(30.0)	43(33.1)	34(26.2)	14(10.8)
72) Human Growth and Development	3(2.2)	33(24.6)	54(40.3)	44(32.8)	27(20.8)	45(34.6)	31(23.8)	27(20.8)

RESULTS OF THE EXPERIENCE-INTEREST INVENTORY (Continued)

TOPICS	RESPONSES							
	EXPERIENCE				INTEREST-NEED			
	EXPERTISE	SOME EXPERIENCE	SOME KNOWLEDGE	NO KNOWLEDGE	VERY STRONG	STRONG	MODERATE	NONE
73) Directed Teaching	9(6.8)	29(21.8)	41(30.8)	54(40.6)	25(19.2)	34(26.2)	42(32.3)	29(22.3)
74) General Psychology	10(7.5)	41(30.6)	47(35.1)	36(26.9)	31(23.8)	44(33.8)	32(24.6)	23(17.7)
75) Guidance for Teachers	4(3.0)	31(23.3)	50(37.6)	48(36.1)	32(24.6)	35(26.9)	35(26.9)	28(21.5)
76) Special Problems in Education, Group Processes, I, II, III	2(1.5)	22(16.4)	42(31.3)	68(50.7)	28(21.5)	33(25.4)	36(27.7)	33(25.4)
77) Diagnostic and Prescriptive Teaching	5(3.7)	23(17.2)	38(28.4)	68(50.7)	25(19.2)	36(27.7)	36(27.7)	33(25.4)
78) Statistics	9(6.7)	34(25.4)	46(34.3)	45(33.6)	27(20.8)	36(27.7)	36(27.7)	31(23.8)
79) English Composition	13(9.8)	56(42.1)	49(36.8)	15(11.3)	30(23.1)	45(34.6)	34(26.1)	21(16.1)
80) Speech Techniques	13(9.8)	54(40.6)	46(34.6)	20(15.0)	35(26.7)	46(35.1)	34(26.0)	16(12.2)
81) Illustration	4(3.0)	25(18.8)	55(41.4)	49(36.8)	22(16.8)	36(27.5)	40(30.5)	33(25.2)
82) Public Speaking	12(9.0)	53(39.9)	43(32.3)	25(18.8)	35(26.9)	34(26.1)	41(31.5)	20(15.4)
83) Voice and Diction	9(6.8)	48(36.1)	47(35.3)	29(21.8)	28(21.3)	44(33.6)	35(26.7)	24(18.3)
84) Fundamentals of Speech	10(7.5)	44(33.1)	55(41.4)	24(18.0)	25(19.2)	46(35.4)	38(29.2)	21(16.2)
85) Essentials of Management	10(7.6)	47(35.9)	43(32.8)	31(23.7)	32(24.6)	44(33.8)	32(24.6)	22(16.9)
86) Organizational Behavior	5(3.8)	42(31.6)	46(34.6)	40(30.1)	32(24.4)	37(28.2)	42(32.1)	20(15.3)
87) Foundations and Problems in Education	8(6.0)	24(18.0)	49(36.8)	52(39.1)	27(20.6)	32(24.4)	37(28.2)	35(26.7)
88) Techniques of Curriculum Development	10(7.5)	31(23.3)	46(34.6)	46(34.6)	27(20.6)	34(25.9)	39(29.8)	31(23.7)
89) Educational Research	7(5.3)	19(14.3)	56(42.1)	51(38.3)	29(22.1)	22(16.8)	47(35.9)	33(25.2)
90) Educational Statistics	5(3.8)	21(15.8)	53(39.9)	54(40.6)	28(21.4)	30(22.9)	38(29.0)	35(26.7)
91) Educational Organization, Administra- tion and Supervision	9(6.8)	24(18.0)	46(34.6)	54(40.6)	26(19.8)	33(25.2)	39(29.8)	33(25.2)
92) School Finance and Business Administration	3(2.3)	21(15.8)	51(38.3)	58(43.6)	25(19.1)	32(24.4)	40(30.5)	34(25.9)
93) Organization, Supervision and Adminis- tration of Educational Media	4(3.0)	23(17.3)	42(31.6)	64(48.1)	26(19.8)	32(24.4)	42(32.1)	31(23.7)
94) School Law	2(1.5)	14(10.7)	44(33.6)	71(54.2)	26(20.0)	28(21.5)	39(30.0)	37(28.4)

APPENDIX D

STAFF AND FACULTY DEVELOPMENT

STAFF AND FACULTY DEVELOPMENT

Work Performed: Develops policies and procedures relating to the operation of the staff and faculty development program. Develops courses of instruction (COI), conducts, and administers staff and faculty development programs to include basic and advanced instructor training, training supervisor, programmed text writer, self-paced instruction, and instructional systems development, etc. Supervises the operation which involves the formal recognition of instructor performance. Provides instruction and guidance to newly assigned personnel (1) concerning the over-all school mission, organization, and coordination (interface) required by the various school elements; and (2) specifically, relevant to functional areas of assignment (i.e., DCD, DTD, and DOE). In conjunction with the educational advisor and school directorates, promulgates latest TRADOC guidance, doctrine, philosophy, and other techniques to be employed in training, development of training, and training support.

Yardstick	Instructional Hours			600	4,200	11,400	18,600		
	Manpower Requirement			3	10	24	38		
	Interval Rate			0.0019		0.0019	0.0019		
Military Positions				Position Delineation	No. of Positions				Civilian Job Code
Line	Duty Position Title	Specialty Code	Rank						
1	Chief, Staff and Faculty	28A	Maj.	C	1	1	1	1	GS-1710
2	Instructor	^a	Cpt./ Lt.	C	1	7	19	31	GS-1710
3	Senior Clerk Typist	71B20	SP5	C	--	--	--	1	GS-322
4	Clerk Typist	71B10	SP4	C	1	2	4	5	GS-322

^aSpecialty code should be appropriate technical MOS of the school.

SOURCE: U. S. Department of the Army, Staffing Guide for U. S. Army Service Schools, 2nd rev. Pamphlet No. 570-558 (Washington, D. C., April, 1976), Chapter II, pp. 140-142.

APPENDIX E

MANPOWER REQUIREMENTS, AUTHORIZATIONS FOR
STAFF AND FACULTY DEVELOPMENT

OFFICE

MANPOWER REQUIREMENTS, AUTHORIZATIONS FOR STAFF AND FACULTY
DEVELOPMENT OFFICE BY POSITION CLASSIFICATION,
CATEGORY, AND ORGANIZATIONAL ELEMENT

Position Classification	<u>Military</u>		<u>Civilian</u>		<u>Total</u>	
	Required	Authorized	Required	Authorized	Required	Authorized
Staff and Faculty						
Development Office						
Supervisory	--	--	1	1	1	1
Administrative	--	--	2	1	2	1
Instructor	--	--	14	12	14	12
Total	--	--	17	14	17	14

SOURCE: U. S. Department of the Army, Staff Guide for U. S. Army Service Schools, 2nd rev. Pamphlet No. 570-558 (Washington, D. C., April, 1976), Chapter II, pp. 140-142.

VITA

Harvey Lee Hamilton

Candidate for the Degree of

Doctor of Education

Thesis: A SURVEY OF STAFF AND FACULTY ATTITUDES TOWARD IN-SERVICE TRAINING AT THE UNITED STATES ARMY MISSILE AND MUNITIONS CENTER AND SCHOOL, REDSTONE ARSENAL, ALABAMA

Major Field: Educational Administration

Biographical:

Personal Data: Born in Bay Minette, Alabama, June 16, 1938, the son of Mr. Elbert Hamilton and Mrs. Lillian H. Wallace; wife, Sarah Davis Hamilton; children, Darryl, Denna and Harvey, Jr.

Education: Graduated from Douglasville High School, Bay Minette, Alabama, in May, 1959; received the Bachelor of Science degree from Alabama Agricultural and Mechanical College, Huntsville, Alabama, with a major in Secondary Education in 1962; received the Master of Science from AAMU, with a major in Secondary Education in August, 1966; received the Master of Education degree from AAMU, with a major in Educational Administration and Supervision in August, 1972; received the Master of Education from AAMU, with a major in Secondary School Supervision in May, 1974; completed requirements for the Doctor of Education degree at Oklahoma State University in July, 1977.

Organizations: Omega Psi Phi Fraternity, Inc.; William Hopper Council Elks Lodge, No. 977; NCOA; The United Brotherhood Foundation; and NCO Club.

Military Service: U. S. Army, 1955-1957 (Honorably discharged).

Professional Experience: Teacher in Baldwin County School System, Bay Minette, Alabama, 1962-1966; served as a Training Instructor at U. S. Army Missile and Munitions Center and School, Redstone Arsenal, Alabama, 1966-1971; served as a Training Specialist (Missiles) at USAMMCS 1971-present. Also served as part-time faculty member, Calhoun State Community College, Decatur, Alabama, 1975-1976.