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A study was conducted to investigate the application of the PLATO IV system to training interpersonal skills. Suitable content areas were chosen, and a mechanism to integrate various skill areas was designed. Training materials for this integration of skills were developed and coded into the PLATO IV system. A sample of experimental and control company commanders was tested and trained. Data about their on-the-job performance in the skill areas, as well as their companies' performance were collected and analyzed. It appears that the training had an effect on skill performance of company commanders, and indirectly on the attitudes and beliefs of their recruits. Less effect on company performance was observed, but there is evidence that the skill areas trained are related to success criteria used. The report includes 2 illustrations and 11 tables. Appendixes contain instructional material, questionnaires, and surveys. (Author/NR)

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APPLICATION OF COMPUTER-ASSISTED INSTRUCTION TO INTERPERSONAL SKILL TRAINING

University of Michigan
Institute for Social Research
Ann Arbor, Michigan 48104

January 1976

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A study was conducted to investigate the application of the PLATO IV system to training interpersonal skills. Suitable content areas were chosen and a mechanism to integrate various skill areas was designed. Training materials for this integration of skills were developed and coded into the PLATO IV system. A sample of experimental and control company commanders was tested and trained. Data about their on-the-job performance in the skill areas, as well as their companies' performance were collected and analyzed. It appears that the training had an effect on skill performance of company commanders, and

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indirectly on the attitudes and beliefs of their recruits. Less effect on company performance was observed, but there is evidence that the skill areas trained are related to success criteria used.

Further, time limitations precluded the development of as many sophistocated uses of the PLATO system in the training materials as had been planned. Several games were used, as well as rather complicated and individualized branching techniques, but other applications, such as some utilizing video tape, were not possible to develop in time. These additional applications had been planned to help overcome a continuing weakness of the PLATO system, namely, its simulational capabilities. The inability to process open-ended answers remains a serious drawback in the application of PLATO to interpersonal skill training. Also, the continued unreliability of the audio unit and poor quality of the microfiche make adequate simulation problematic. The touch panel capability was used extensively in these materials and seemed to enhance ease of responding.

Thus, the results of this project indicate that further research and development are worthwhile and needed. It is worthwhile in that some positive relationships have been found. These findings and promises of other benefits to the Navy and to the training technology area contained in this effort should be investigated further. Better simulation of interpersonal tasks should be attempted (which appears to require largely adequate time for preparation). Further validation of the integration of skill areas should be undertaken using data collected for this study as well as additional data. Better indices of recruit and company commander performance at RTC, that are predictive of their later success in the fleet, should be determined.

The training materials can be used, practically as is, to train personnel who interact with recruits in any of the military services. The techniques and many of the materials employed in this project can be used, with some modifications, to train and to develop training programs for anyone in a leadership role. With somewhat more changes, the materials can provide structure to design training for social behaviors required for any job.

The employment of training programs such as the present ones should allow financial savings to be made in the ways of shorter training for recruits, higher personnel retention rates, greater productivity in the fleet, and fewer violations of Navy codes and standards of conduct. These goals appear to be achievable to some extent with the current programs. Tests for the validity of this proposition and further developments to make it more likely are the proposed subjects for further efforts in this area.

SUMMARY

This project represents an effort to develop training materials on interpersonal skills and to evaluate their application, via the PLATO IV system, to a leadership job. Company commanders at the Recruit Training Command in Orlando, Florida, were trained on an integrated set of interpersonal skills. Many measures of their characteristics and those of their recruits were taken to ascertain the effects and usefulness of the training.

The training programs are considered successful in that they were instrumental in increasing the performance of a large number of apparently critical behaviors, not only in the training situation, but also on the job. Evidence that the trained behaviors not only appear to be critical but actually are important to Navy goals is derived from the facts that: (a) the attitudes and beliefs of recruits were also improved, which is considered a direct consequence of the new behaviors performed by company commanders; (b) recruits who performed well on traditional RTC measures were found to have company commanders who were more likely to perform the behaviors taught in the training programs; and (c) highly motivated company commanders were more likely to perform the behaviors being taught than company commanders who did not like their job. The company commanders' positive attitudes toward learning the training materials provide further evidence for the success of the programs. If the training materials are not perceived as useful and interesting by the students, their learning will suffer, which can only diminish the success of the training.

These effects are even more impressive when considered together with the forces that oppose their manifestation. Among the negative influences are: (a) the very brief interval of training provided, especially in comparison with a lifetime of practice which may have been given to developing competing responses; (b) the hallowed military traditions supporting behaviors antagonistic to those taught by the programs; (c) alternate avenues open to company commanders (e.g., organizational politics) which might be more expedient to their perceptions of success than the skills provided in training; (d) the relatively small investment made in developing and improving the training materials, considering the difficult nature of the subject matter area. That effects such as those obtained here can be produced under rather untoward conditions surrounding this research provides encouragement to the notion that important strides toward Navy goals can be made with continued efforts in this area.

Interpretation of much of the results relating to the effects of training on recruit performance was hampered by three confounding variables - company commander shadow time, company size, and recruit education level. A more satisfactory assignment of students to experimental conditions was prevented by the time limitations of the study. More time than anticipated was spent on developing an integrating device for the skill areas covered and little time remained for developing workable training materials and for implementing the most desirable experimental design.

PREFACE

This project was performed in conjunction with the Navy Personnel Research and Development Center as part of a larger effort (TDP 43-03, P03A) to experimentally evaluate PLATO IV technology. The training of interpersonal skills in company commanders was chosen as a vehicle for this evaluation.

The assistance of the Recruit Training Command at Orlando throughout all phases of this research is gratefully acknowledged. In particular, the cooperation and support provided by Lieutenant Commander J. G. Strohaker and Lieutenant J. Holzworth, Commander and Assistant Commander of Regiment I, respectively, is especially appreciated.

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SECTION I

INTRODUCTION

For the past few years, the Navy has experienced a tremendous growth of interest in the general area of human resources. This interest includes programs which are called Leadership and Management Training. These programs take many forms at various commands, but they all recognize the Navy's responsibility to provide training in the area of leadership.

Leadership training can be undertaken from any of several theoretical and pedagogical bases. In both the civilian and military worlds, there has been a long tradition of providing basically informational inputs as the form of leadership instruction, that is, a presentation of fairly theoretical concepts about human organization, motivation, control, etc. Now, however, in both worlds, there is a growing recognition of the need for skill training. That is, it is becoming clear that mere possession of information, or facts, or limited experimential exposure to a particular concept may not be sufficient to provide acquisition of a skill. Here, skill is conceived of as the integrated ability to behave correctly at situationally appropriate times in order to bring about desired outcomes. When conceptualized in this way, skill can best be acquired through the application of knowledge and experience in settings where reinforced practice can occur. Given these requirements, traditional classroom techniques and even many of the solely experiential methods which are currently in vogue in the area of leadership training fall short.

One of the basic ingredients of leadership is interpersonal skill at the man-to-man interface. Skills which enable an individual to relate productively to other persons and groups are as necessary for effective leadership as the ability to plan, direct, and delegate. Fundamental to each of these broader areas is an ability to operate at the interpersonal level.

Given the criticality of these interpersonal skills as well as a need to develop new forms of learning opportunities for these skills, there has been a recent interest in the potential of computer-assisted instruction (CAI) in this area. A pilot study[1] of such an application of CAI indicated that a further, broader investigation was both feasible and warranted.

1. Spencer, G. J. and Hausser, D.L.; Blaiwes, A.S. and Weller, D. R. Use of Computer-Assisted Instruction for Interpersonal Skill Training - A Pilot Study. 1975. Technical Report: NAVTRAEQUIPCEN 73-C-0133-1

SECTION II

STATEMENT OF THE PROBLEM

One of the many possible training approaches for interpersonal skill acquisition is computer-assisted instruction. Computer-assisted instruction is developing rapidly, following advances in computer programming languages, information storage and retrieval, time-sharing and process-control capabilities, and audio/visual interaction modes. The Computer-based Education Research Laboratory at the University of Illinois has developed a CAI system called PLATO, now in its fourth generation version, and an instructional programming language called TUTOR. Implementation studies are made possible by the leasing or purchase of user terminals connected to the Illinois system and are presently occurring in many areas. For example, the PLATO system has been used for performance training at the Navy Personnel Research and Development Center, helping trainees to learn serial tasks such as operating and troubleshooting electronic equipment. The computer's ability to simulate technical environments, such as a radar screen, as well as control the learning sequence adds a new dimension to the training process.

These developments in the state-of-the-art make the application of computer-assisted instruction and simulation to interpersonal skill training not only potentially feasible but also desirable. It is feasible based upon present research efforts occurring around the country, using PLATO and other systems in relationship to a variety of content and skill areas[2]. It is desirable from the standpoint of the immense needs of the Navy, as well as most civilian organizations, for an interpersonally skilled membership. These needs are not being satisfied with present training techniques. In addition, providing the training through interaction with a computer terminal removes the need for an instructor and allows the student to practice his new skills in a non-threatening situation.

A pilot study to evaluate the feasibility of using the PLATO system for training interpersonal skills was conducted[1]. The results of that study indicated that the approach deserved further application and testing. The study being reported here has undertaken that next step.

Basically, this study was designed as an expansion of the earlier one in two major areas. First, it was intended that the capabilities of the PLATO system be utilized and challenged to the greatest extent possible. This objective was developed for two reasons. First, an overall goal of this and related research was to evaluate PLATO as a CAI system. Such judgments can often best be made by trying to stretch a system to its limits. Second, the pilot study indicated that high-level simulation of social situations, a prime requirement for providing effective skill training in the area of interpersonal skills, might prove problematic with the PLATO system. Therefore, a goal of this study was to try to raise the level of such simulation by taxing more of PLATO's features.

1. See footnote on page 8.
2. Farr, M.J. Computer-Assisted Instruction. Naval Research Reviews, Vol. XXV, 9, 1972.

The second major area in which this study expanded upon the first revolves around the content areas to be trained. The pilot study confined itself to a single interpersonal skill, giving effective feedback. An expansion from that one skill required investigating what additional interpersonal skills would be relevant to the subject population (company commanders). Because of this expansion of the skill areas to be trained, one major concern of the study became how best to integrate the various skills to facilitate learning, retention, and application.

A series of natural research questions arose from this expansion, such as if PLATO could prove effective at training a range of skills, if the skills were learned and applied differentially, and if various skills relate differentially to other measures, such as recruit performance and absenteeism, which might be of interest.

SECTION III

METHOD

There were two main objectives of this study, a further evaluation of the PLATO system and an expansion of content area to be trained. Meeting these objectives required basically a two-fold effort. The first phase of the effort involved the development of a set of integrated training materials. The second phase involved an experimental evaluation of those materials and the PLATO system.

MATERIALS

TRAINING MATERIALS. The bulk of the entire effort centered around developing training materials which would provide critical skills in a meaningful and useful way. The nature of the subject population required careful consideration of these issues. Company commanders are leaders of groups with relatively short life spans. The long-term harmful effects of inadequate interpersonal skills are not readily apparent to these individuals nor are they particularly meaningful to them. Indeed, it appears that there is a commonly held perception that the system rewards behavior which is incompatible with the kinds of behaviors interpersonal skills require. With this realization, a continuing effort was made to choose skills and develop materials which would have face validity and not promote a sense of conflict in the student's mind.

Skill Areas. As a first step in expanding and developing materials, a list of areas which are traditionally considered relevant to the domain of interpersonal skills was generated. This list was then examined in light of the skill areas which would be relevant for the subject population. These judgments were based on observations of company commanders with their recruits, on interviews with experienced company commanders, and on a survey of recruits' perceptions of the skill areas where company commanders could use training. The resulting list of skill areas included:

a. Feedback
b. Communication
c. Goal setting
d. Problem solving
e. Decision making
f. Reinforcement
g. Power and authority.

Individuals and teams from among staff of the Institute for Social Research (ISR) and the Naval Training Equipment Center (NAVTRAEQUIPCEN) were assigned areas from this list. Materials were developed independently and then reviewed and revised by various staff member..

It became apparent very early in this development phase that some integrating device would be needed to make the training materials more cohesive. This would facilitate retention and application of the skills learned. A slow evolutionary process took place during which the materials were placed in many different configurations. With the realization that no one configu-

ration would work perfectly, an integrating scheme was finally arrived at that integrated the bulk of materials while leaving two rather independent skill areas more separate.

Integration of Training Materials. In the final integration of the main portion of the materials which were developed to provide what came to be called Effective Leadership Skills, a content/process split can be seen. The basic integration of materials is depicted in figure 1. The content of effective leadership behavior, that is, what a good leader does, can be classified into three basic areas: setting goals, giving instructions, and providing feedback. These three content areas were referred to as the Three Keys to Performance.

The process of effective leadership, that is, how a good leader behaves, can be classified into two basic areas: being Clear and being Motivating. Being Clear involves behaviors which build and maintain reponse capabilities in subordinates, or which are designed to overcome deficiencies in knowledge. Being Clear can be further broken down into the component subskills of being Concrete, Timely, and Clarifying. Each of these subskills, in turn, can be defined in even more specific terms, as indicated in figure 1.

Being Motivating involves behaviors which promote self-actuation in subordinates and which are designed to help overcome deficiencies in execution. Being Motivating can be further broken down into the component subskills of being Reasonable, Relevant, Considerate and Human. As before, even more specific terms can be found in figure 1. The seven subskills involved in being Clear and Motivating were referred to as the Seven Characteristics of an Effective Company Commander.

Materials were developed around the Three Keys, the Seven Characteristics, and each characteristic as it applied to each of the keys. A complete set of training materials, as they appeared to the student, is available from NAVTRAEQUIPCEN, a sample of which is presented in Appendix A.

Along with the basic training materials, review tests were developed to be inserted at two points in the training sequence. The first review was designed to come after the materials on Clarifying, and the second after the materials on Relevant. PLATO was programmed to make remediation decisions based on performance at these reviews. Remediation consisted of short reviews of necessary areas, or re-exposure to particular subsets of materials already gone through. For example, if a student failed to meet a certain criterion level (usually two-thirds correct) for a particular characteristic on the review test, he would be shown some of the materials for that characteristic again. On the other hand, if he missed one of the keys, he would be shown a short remedial lesson consisting of new material on that key. There was no review or remediation for the materials on the characteristics Considerate and Human.

A short matching exercise was developed to test recall of definitions of the characteristics. This was designed to be used as a quick refresher at the start of sessions subsequent to the first (which covered the characteristics).

EFFECTIVE LEADERSHIP

WHAT?

GOAL SETTING INSTRUCTION FEEDBACK

HOW?

- BE CLEAR
  - BE CONCRETE
    - Be specific
    - Be performance-oriented
  - BE TIMELY
    - Assure attention
    - Assure retention
    - Order priorities
  - BE CLARIFYING
    - Observe
    - Question
    - Probe
- BE MOTIVATING
  - BE REASONABLE
    - Consider time limits
    - Consider performance limits
  - BE RELEVANT
    - Relate long-term goals
    - Relate short-term goals
  - BE CONSIDERATE
    - Be aware of morale
    - Be concerned about the company
  - BE HUMAN
    - Be fallible
    - Be personable
    - Be involved

Figure 1. Integration of major skill areas

In addition to these materials developed for the main integration of skills, there were two additional sets of training materials. They were Rewards and Punishment and Decision Making. These skill areas were considered separate from those which had been integrated into the central scheme, so their independent presentation was not considered problematic.

Materials were also developed to introduce the student to the PLATO system and the training materials. Practice was provided on the use of the keyset and touch panel.

Uses of PLATO. Since one of the objectives of this entire effort was to evaluate the PLATO system, an attempt was made to maximize use of its capabilities. As in the earlier study made by Spencer and Hausser, and Blaiwes and Weller, a couple of games were incorporated into the training materials, Antisubmarine Warfare and Hangman. These games capitalize on the interactive capability of PLATO.

The touch panel was used extensively in all the materials. Basically, it was used as a means of recording answers. This capability allowed the student to maintain his concentration on the materials being presented on the screen, and eliminated the disruptive effect of having to go to the keyset to find a particular response code and enter it.

PLATO's data management capabilities were put to good use. Besides the previously noted remediation decisions which the system handled, all student responses were recorded and reported in summarized form. A portion of the training materials for one of the characteristics, Considerate, were tailored to each student, based on his answers to an earlier series of attitudinal questions. Perhaps, the maximum simultaneous use of PLATO's capabilities was designed into the Decision Making materials, where the touch panel, timing, record keeping, and "individualizing" potentials were all incorporated.

Certain of PLATO's capabilities were not used in these materials for basically two reasons. The foremost reason was the continued low reliability of certain features such as the random-access audio disc and microfiche. The other major reason was that the time and effort spent in arriving at a workable integration of the skill areas precluded the development of materials in media like slides, audio tape and video tape. Given the time and actual productive resources available, the work required to produce the training materials made expansion into other media infeasible.

DATA COLLECTION INSTRUMENTS. Several different instruments were developed for collecting performance and criterion data needed for the evaluation experiment. They were as follows:

Pretest/Posttest. Tests were constructed for all the training materials. There were fixed-choice items which were presented on PLATO and there were paper-and-pencil open-ended items. Samples of each can be found in appendix B. For the materials in the central integration of the seven skill areas, alternate forms (A and B) of both fixed-choice and open-ended items were developed.

Company Commander Background. Company commanders were asked several questions about their background and experience in the Navy. These items were asked on PLATO. They can be found in appendix C.

Company Commander Survey. A Company Commander Survey (CC Survey) designed to elicit self-report of company commanders' attitudes and behavior was developed. Actually, two forms were made. The first asked respondents to report how they thought they would behave at a later time. The second asked respondents to report how they did behave. Also, some questions about the usefulness of the training materials and the names of the skill areas were developed to be attached to the second form of the survey for experimental subjects. The first form of the CC Survey can be found in appendix D.

Recruit Questionnaire. A survey (Recruit Questionnaire) was designed for use with recruit companies and can be found in appendix E. The items asked for recruits' perceptions of their companies, their life in the Navy, their company commander, and their company commander's behavior as he interacted with his recruits. Each item which asked about the company commander's behavior consisted of a behavioral statement and a six-point response scale anchored by "always" and "never".

Battalion Staff Ranking of Company Commanders. A form (Battalion Staff Ranking) was developed which asked battalion commanders and adjutants to rank all the company commanders in their battalions using an alternate ranking method. This form can be found in appendix F.

PLATO Opinionnaire. A few questions were designed to be asked by PLATO at several points in the sequence of training materials (as shown in figure 2). The questions are about the training materials themselves and about being a company commander. The PLATO Opinionnaire can be found in appendix G.

SUBJECTS. Individuals from two sequential classes of the Company Commander School at Recruit Training Command, Orlando (RTC) were subjects in the experimental evaluation of the training materials. Thirteen company commanders from the first class were assigned to the control group and fourteen company commanders from the second class were assigned to the experimental group. This was done because all the training materials were not usable when the first group of subjects became available. As far as could be determined informally, individuals are not assigned to Company Commander School in any systematic fashion that might have affected the comparability of the experimental and control groups in this study. In addition, data were collected which allowed a post hoc comparison of the two groups.

One company commander acting as an experimental subject was relieved from duty with his company during the second week of recruit training. This left thirteen company commanders acting as experimental subjects for whom data records are essentially complete.

PROCEDURE. As described earlier, the bulk of this entire effort consisted of the development of the training materials. After some pretesting of the

materials on experienced company commanders, who checked them for overall accuracy regarding details of recruit training procedures and protocol, the experimental evaluation of the materials got underway.

TREATMENT. Both experimentals and controls were pretested and posttested. The controls were randomly assigned to one of two groups. The first group reported to the Human Factors Laboratory at NAVTRAEQUIPCEN on Thursday. Each subject was given an introduction to PLATO and asked to answer the Company Commander Background questions. Then, they were given form A of the Pretest/Posttest and asked to fill in the first form of the CC Survey. On the following Monday, this group returned and the subjects were given form B of the Pretest/Posttest. The second group of control subjects reported on Friday, the day after the first group, and received an introduction to PLATO, the background questions, form B of the Pretest/Posttest, and the first form of the CC Survey. On the following Tuesday, they received form A of the Pretest/Posttest. The activities on the first day took about an hour to complete; the Posttest took about forty-five minutes.

The experimental subjects were randomly assigned to three groups. Each group received the experimental treatment on succeeding weeks. This was done to optimize scheduling of subjects at PLATO terminals and to minimize the time between training and being assigned a recruit company.

The training which the experimental subjects received was broken into five sessions, one session per day, for five consecutive days. Each session lasted from one to two hours. The specific content of these sessions is depicted in figure 2. The first session was a duplicate of the first days' activities for control subjects. Half of the experimental subjects were given form A of the Pretest/Posttest and half were given form B.

The second session consisted of an introduction to the major skill areas to be trained, that is, the three keys and the seven characteristics. The third session consisted of the materials on the first five of the seven characteristics and two review and remediation sections. The fourth session consisted of the materials on the final two characteristics and that part of the appropriate form of the posttest which covered the materials taught thus far. The fifth and final session consisted of the materials on rewards and punishment and decision making, and their respective posttests.

The PLATO system kept track of all subjects' performance on materials which appeared on the terminal. The paper-and-pencil pretests and posttests were retained for all subjects and scored by hand at a later time. For the portion of the paper-and-pencil test dealing with the central integration of skill areas, each open-ended question had been prepared with a particular key in mind.

Each subject's answer was judged on how it demonstrated the use of the appropriate key, regardless of the quality of the seven characteristics for the response. This latter aspect was scored by evaluating each answer for each of the seven characteristics. If something in the response was an example of a characteristic, a "behavior score" was entered for the item on

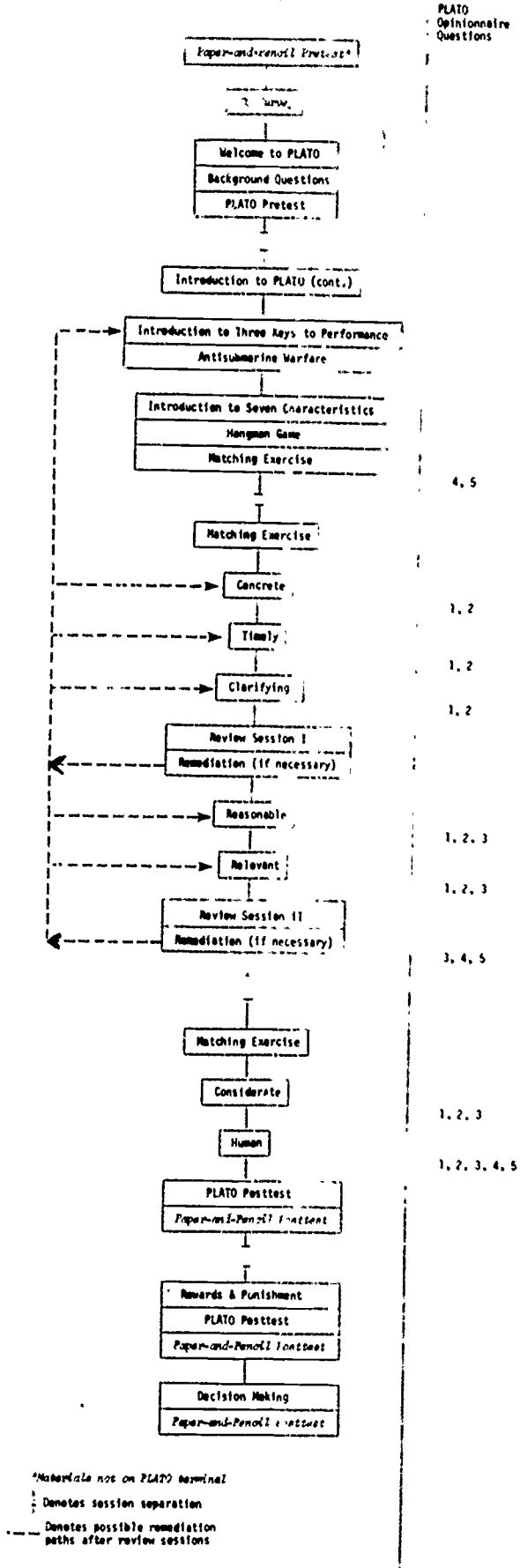

Figure 2. Training Sequence

that characteristic. That behavior score could be positive or negative depending on the quality of the response. If a response did not appear to illustrate a certain characteristic, no score was recorded for the item on that characteristic.

For those questions dealing with rewards and punishment, each response was judged for the appropriate use of reinforcers.

In scoring the Decision Making portion of the paper-and-pencil test, first a count was made of all the items that the student listed as things he would consider in making a decision. Then, a count was taken of those items which a student indicated he would consider if time were short.

DATA COLLECTION. At some time between one day and eight weeks after the final posttest, each subject was assigned to lead a recruit company through its nine-week training period. This triggered the collection of various kinds of data. Several measures were immediately available from RTC, including:

a. Each subject's rank;

b. General Classification Test (GCT) scores for each subject;

c. Each subject's relative standing in his Company Commander School class;

d. Each subject's final score from Company Commander School.

During the third and sixth weeks of recruit training, the Recruit Questionnaire was administered by RTC staff to all recruit companies during a regularly scheduled class session. Periodically, all surveys were returned to NAVTRAEQUIPCEN. From there, they were sent to ISR where answers were keypunched and entered into a data file.

During the sixth or seventh week of recruit training, each subject was given the second form of the CC Survey and asked to return it to NAVTRAEQUIP CEN. Only three subjects, being used as two controls and one experimental, failed to return the survey.

Between the fifth and seventh weeks of training, each subject's battalion commander and battalion adjutant were asked to complete the Battalion Staff Ranking form and return it to NAVTRAEQUIPCEN. In many cases, a single battalion contained more than one study subject. So long as all subjects were fairly close together in the training schedule (no gap greater than three weeks), the battalion staff was asked to complete only one form.

At the end of training, the following company records and performance scores were obtained from RTC for each company whose company commander was a study subject:

a. Company GCT

b. Number of dropouts (recruits leaving the company permanently)

c. Total street marks

d. Military Evaluation Department (MED) scores for each of four weeks as follows:

(1) Barracks

(2) Locker

(3) Personnel

(4) Infantry

(5) Academic.

e. Sick calls (total number of recruit visits to dispensary).

Finally, a copy of the Feeder Evaluation Report which is made out by RTC staff for each company commander was obtained for each study subject.

MEASURES. The measures which were derived from these data fall into five basic classes as follows.

Company Commander Background. Most of these measures come from the background questions, while some come from RTC records. Company Commander School standing is expressed as the ratio of class standing to total number in class. Two indices of measures were obtained from the first form of the CC Survey. The first index was labelled "Values" (i.e., Company Commander's attitudes toward recruit training); the items in this index are indicated in appendix D. The second index was labelled "Behavior" (i.e., Company Commander's intentions to perform certain behaviors); the items in this index are also indicated in appendix D. These index scores are the sum of the component item scores. These indices from the first CC Survey are used as a pretreatment indication of values and intended behavior. In the list of company commander background measures that follows, the source of the data is noted. These measures were obtained for each subject:

a. Rank (RTC)

b. Age (Background Question 2)

c. Education (Background Question 3)

d. GCT (RTC)

e. Years in Navy (Background Question 1)

f. Number of persons supervised (Background Question 4)

g. Years experience as a supervisor (Background Question 5)

h. Time spent shadowing other company commanders (Background Question 6)

i. CC School Standing (RTC)

j. CC School Performance Score (RTC)

K. Values (CC Survey)

l. Behavior (CC Survey).

Company Demographics. The following measures were collected about each company whose company commander was a study subject. Sources of the data are noted.

a. Size (Recruit Questionnaire -- number filling in survey)

b. Average GCT (RTC)

c. Average age (Recruit Questionnaire)

d. Average education (Recruit Questionnaire).

Company Commander Skill Performance. Measures of performance in the various skill areas were derived for each subject from the pretest, training, and posttest data. In the following list of measures, a definition of the measure is included.

a. Pretest Measures

(1) Pretest Total -- percent correct on all items with definite correct answers

(2) Pretest Keys -- percent correct on items testing three keys

(3) Pretest GS -- percent correct on Goal Setting items

(4) Pretest I -- percent correct on Instruction items

(5) Pretest FB -- percent correct on Feedback items

(6) Pretest Open-Ended Total Behavior -- number of "behavior scores" for entire pretest

(7) Pretest Positive -- proportion of total "behavior scores" which were scored positive

(8) Pretest Clear -- number of positive Concrete, Timely, and Clarifying behaviors.

(9) Pretest Motivating -- number of positive Reasonable, Relevant, Considerate, and Human behaviors

(10) Pretest Concrete -- number of positive Concrete behaviors

(11) Pretest Timely -- number of positive Timely behaviors

(12) Pretest Clarifying -- number of positive Clarifying behaviors

(13) Pretest Reasonable -- number of positive Reasonable behaviors

(14) Pretest Relevant -- number of positive Relevant behaviors

(15) Pretest Considerate -- number of positive Considerate behaviors

(16) Pretest Human -- number of positive Human behaviors

(17) Pretest R&P -- percent correct on Rewards and Punishment items

(18) Pretest D/M-(total) -- number of items listed for consideration in the Decision Making exercise

(19) Pretest D/M (ratio) -- ratio of items circled to items listed in Decision Making exercise.

b. Training Measures (Experimental subjects only)

(1) Training Total -- percentage of correct first responses to all response requests in training materials for which there were definite right answers

(2) Training Keys -- percent correct on all items dealing with three keys

(3) Training GS -- percent correct on Goal Setting items

(4) Training I -- percent correct on Instruction items

(5) Training FB -- percent correct on Feedback items

(6) Training Characteristics -- percent correct on all items dealing with seven characteristics

(7) Training Clear -- percent correct on items dealing with Concrete, Timely, or Clarifying

(8) Training Motivating -- percent correct on items dealing with Reasonable, Relevant, Considerate, or Human

(9) Training Concrete -- percent correct on Concrete items

(10) Training Timely -- percent correct on Timely items

(11) Training Clarifying -- percent correct on Clarifying items

(12) Training Reasonable -- percent correct on Reasonable items

(13) Training Relevant -- percent correct on Relevant items

(14) Training Considerate -- percent correct on Considerate items

(15) Training Human -- percent correct on Human items

(16) Training R&P -- percent correct on Rewards and Punishment items

c. Posttest Measures

(1) Posttest Total -- percent correct on all items with definite correct answers

(2) Posttest Keys -- percent correct on items testing three keys

(3) Posttest GS -- percent correct on Goal Setting items

(4) Posttest I -- percent correct on Instruction items

(5) Posttest FB -- percent correct on Feedback items

(6) Posttest Open-Ended Total Behavior -- number of "behavior scores" for entire posttest

(7) Posttest Positive -- proportion of total "behavior scores" which were scored positive

(8) Posttest Clear -- number of positive Concrete, Timely, and Clarifying behaviors

(9) Posttest Motivating -- number of positive Reasonable, Relevant Considerate, and Human behaviors

(10) Posttest Concrete -- number of positive Concrete behaviors

(11) Posttest Timely -- number of positive Timely behaviors

(12) Posttest Clarifying -- number of positive Clarifying behaviors

(13) Posttest Reasonable -- number of positive Reasonable behaviors

(14) Posttest Relevant -- number of positive Relevant behaviors

(15) Posttest Considerate -- number of positive Considerate behaviors

(16) Posttest Human -- number of positive Human behaviors

(17) Posttest R&P -- percent correct on Rewards and Punishment items

(18) Posttest D/M (total) -- number of items listed for consideration in the Decision Making exercise

(19) Posttest D/M (ratio) -- ratio of items circled to items listed in Decision Making exercise.

Company Commander On-The-Job Performance. There were several measures of both skill performance on-the-job and overall performance which were obtained for each subject. The measures derived from the Recruit Questionnaire are indices made up by taking the mean of scores on 1 to 28 items. These indices and their component items are listed in table 1. For those measures from the Recruit Questionnaire, two sets of data are available from the two survey administrations. Ranking measures from the Battalion Staff Ranking form are the ratio of rank held to number of persons ranked. Once again, sources of the data are noted in the list of on-the-job performance measures below:

a. Goal Setting (Recruit Questionnaire)

b. Instruction (Recruit Questionnaire)

c. Feedback (Recruit Questionnaire)

d. Clear (Recruit Questionnaire)

e. Motivating (Recruit Questionnaire)

f. Concrete (Recruit Questionnaire)

g. Timely (Recruit Questionnaire)

h. Clarifying (Recruit Questionnaire)

i. Reasonable (Recruit Questionnaire)

j. Relevant (Recruit Questionnaire)

k. Considerate (Recruit Questionnaire)

l. Human (Recruit Questionnaire)

m. Rewards and Punishment (Recruit Questionnaire)

n. Values (CC Survey -- second form)

o. Behavior (CC survey -- second form)

p. Commander's Ranking (Battalion Staff Ranking)

TABLE 1. RECRUIT QUESTIONNAIRE INDICES: THEIR COMPONENT ITEMS

Index	Items
Goal Setting	62
Instruction	63
Feedback	64, 66
Clear	12 through 30
Motivating	31 through 58, 65
Concrete	14, 16, 17, 23
Timely	18, 19, 20, 24, 25, 26, 27, 28
Clarifying	15, 21, 22, 29, 30
Reasonable	31, 32, 33, 34
Relevant	36, 39, 40
Considerate	37, 41, 42, 47, 48, 49, 50, 51, 52
Human	38, 43, 44, 45, 46, 53, 54, 55, 56, 57, 58
Rewards & Punishment	59, 60, 61
Company Morale	4, 10
Company Expectations	5, 6, 7

q. Adjutant's Ranking (Battalion Staff Ranking)

r. Battalion Staff Ranking (average of p and q above)

s. Feeder Evaluation (overall score from Feeder Report).

Company Performance. The measures used to describe recruit company performance were basically those generated and used by RTC. The MED scores are averages of scores for four weeks. The MED Military Score is an average of the MED Barracks, Locker, Personnel, and Infantry scores. The MED Brigade is the overall mean. The following measures were obtained for each subject.

a. MED Barracks (RTC)

b. MED Locker (RTC)

c. MED Personnel (RTC)

d. MED Infantry (RTC)

e. MED Academic (RTC)

f. MED Military (RTC)

g. MED Brigade (RTC)

h. Dropouts (RTC)

i. Sick Calls (Dispensary)

j. Street Marks (RTC)

k. Company Morale (Recruit Questionnaire)

l. Company Expectations (Recruit Questionnaire)

PLATO Opinionnaire. One final set of measures were derived from the PLATO Opinionnaire, which tapped experimental subjects' attitudes toward the training program and their roles as company commanders.

Two of the questions related to specific lesson material and were asked after each lesson on the seven characteristics. Each experimental subject's responses to these questions were recorded. The other three questions in the PLATO Opinionnaire related to the training program in general and attitudes about being a company commander. Each subject's final responses to these questions were recorded.

ANALYSIS. The design of this study allows a fairly straightforward analysis of results. Means on all measures for experimental versus control subjects were examined for any significant differences. For those measures where no difference was expected, a two-tailed t-test was used to determine significance. For those measures where a direction of difference was expected, a one-tailed t-test was used. Correlations between many measures were obtained to look for any relationships between treatment and criterion measures. A few potential relationships were not examined because they were not considered relevant to the questions at issue in this study (e.g., Company Commander Background versus Company Demographics).

SECTION IV

RESULTS

In analyzing the results of this type study, two general kinds of questions must be raised. The first questions are concerned with similarities or differences between the experimental and control subjects. The second questions regard the relationships among the various measures obtained and evidence for the effects of training from these relationships. These questions will be approached in that order.

EXPERIMENTAL VERSUS CONTROL DIFFERENCES

COMPARABILITY OF SUBJECTS. One of the primary questions which must be asked before any examination of training effects is undertaken, concerns any systematic similarities or differences between the experimental and control subjects on parameters where ideally they should be similar. Three kinds of evidence can be used to make this determination: Company Commander Background measures, Company Demographics, and Pretest scores from the skill performance measures.

Company Commander Background. The means for the experimental group and control group, and the t statistics for differences between those means, are presented for each Company Commander Background measure in table 2. On eleven of these twelve measures, there was no significant difference between experimental and control subjects. However, on the measure of the amount of time subjects had spent shadowing other company commanders before receiving treatment, control subjects had shadowed significantly longer than experimental subjects.

Company Demographics. A related question concerns the similarity of experimental versus control companies. Table 3 contains the means for the experimental group and control group, and the t statistics for differences between those means for each Company Demographic measure. On the measures of company size, average GCT and average age, there were no significant differences between experimental and control companies. On the measure of average education, however, control companies had significantly higher scores than experimental companies.

TABLE 2. EXPERIMENTAL VERSUS CONTROL DIFFERENCES ON COMPANY COMMANDER BACKGROUND MEASURES

Measure [1]	Experimental Mean	Control Mean	t Statistic
Rank[2]	6.27	6.15	.433
Age[2]	1.62	1.69	- .279[3]
Education[2]	2.00	2.38	-1.595
GCT	55.15	58.92	- .578
Years in Navy[2]	2.08	1.62	1.131
Persons Supervised[2]	3.69	3.77	- .426
Supervisory Experience[2]	2.92	2.46	1.434
Shadowing Time[2]	3.08	3.92	-3.368**
CC School Standing	.58	.55	.261
CC School Performance	89.05	90.29	.843
Values[2]	29.08	31.08	-1.102
Behavior[2]	31.39	33.15	-1.467

**significant at .01 level (two-tailed test)

[1]Sources of this data can be found on pages 19 and 20.
[2]These measures refer to scale positions on questionnaire items.
[3]Negative values for t denote Control mean greater than Experimental mean.

TABLE 3. EXPERIMENTAL VERSUS CONTROL DIFFERENCES ON COMPANY DEMOGRAPHIC MEASURES

Measure [1]	Experimental Mean	Control Mean	t Statistic
Size	74.00	70.23	1.587
GCT	56.71	57.25	-1.518 [2]
Age	20.76	20.73	.038
Education [3]	3.08	3.15	-2.473*

*significant at .05 level (two-tailed test)

1. Sources of this data can be found on page 20.
2. Negative values for t denote Control mean greater than Experimental mean.
3. This measure refers to scale position on a questionnaire item.

Pretest Scores. A final method for determining similarity of experimental and control subjects involves comparing their performance on the pretest to the training materials. The means for the experimental group and control group, and the t statistics for differences between those means for each Pretest measure are presented in table 4. There were no significant differences between experimental and control subjects on any of the Pretest scores.

TREATMENT EFFECTS. Of course, there are areas where one would hope to find significant differences between experimental and control groups in order to provide evidence for the effects of the treatment being studied. Such areas for comparison would include skill performance, On-the-Job Performance, and Company Performance. In addition, effects of training can be ascertained by comparing experimental subjects' Pretest and Posttest scores.

Posttest Scores. Table 5 contains the means for the experimental group and the control group, and the t statistics for differences between those means for each Posttest score. On sixteen of the nineteen Posttest measures, experimental subjects scored significantly better than control subjects. Only on the Instruction and Relevant measures and the Decision Making Ratio were no significant differences found.

Pretest/Posttest Differences. Further evidence of the effect of exposure to the training materials can be found by comparing the Pretest and Posttest performance of experimental subjects and contrasting the results of that comparison to a similar one for control subjects. Table 6 contains the means for all Pretest and Posttest measures for the experimental subjects and the t statistics for differences between those means. Posttest scores were significantly better than Pretest scores for fourteen of the nineteen measures. Table 7 shows the Pretest and Posttest means and t statistics for the control subjects. Here, there were largely no differences between the means, but the controls did significantly worse on the Posttest in five areas: the number of Positive behaviors in the open-ended situations, Motivating behaviors in general, Concrete behavior, Human behavior, and number of items listed in the Decision Making exercise.

Table 6 also includes the mean scores in these same areas obtained by the experimental subjects during training.

TABLE 4. EXPERIMENTAL VERSUS CONTROL DIFFERENCES ON PRETEST MEASURES

Measure [1]	Experimental Mean	Control Mean	t Statistic
Total	60.39	59.39	.218
Keys	63.31	60.69	.339
Goal Setting	34.39	31.54	.312
Instruction	75.39	83.15	-1.203 [2]
Feedback	61.31	59.92	.498
Open-Ended Total	19.54	16.46	1.615
Open-Ended Positive	14.85	13.62	.688
Clear	12.54	11.46	.763
Motivating	2.46	2.23	.447
Concrete	3.85	4.23	- .724
Timely	7.15	6.46	.938
Clarifying	1.38	.77	1.072
Reasonable	.54	.31	.832
Relevant	.31	.38	- .279
Considerate	1.31	1.08	.592
Human	.31	.38	- .343
Rewards & Punishment	55.08	56.00	- .115
Decision Making Total	5.23	5.46	- .394
Decision Making Ratio	.54	.53	.114

[1] For an explanation of scoring procedure, see pages 21 and 22
[2] Negative values for t denote control mean greater than Experimental Mean.

TABLE 5. EXPERIMENTAL VERSUS CONTROL DIFFERENCES ON POSTTEST MEASURES

Measure [1]	Experimental Mean	Control Mean	t Statistic
Total	80.85	61.85	4.552**
Keys	81.39	63.08	4.032**
Goal Setting	58.85	30.77	3.374**
Instruction	84.54	84.54	0.
Feedback	85.62	58.77	4.792**
Open-Ended Total	27.54	14.85	5.824**
Open-Ended Positive	26.77	9.46	7.854**
Clear	19.31	8.62	6.533**
Motivating	7.46	.85	7.514**
Concrete	7.23	2.92	5.761**
Timely	10.00	5.46	5.375**
Clarifying	2.23	.23	5.253**
Reasonable	.85	.23	2.219**
Relevant	.69	.08	1.579
Considerate	4.85	.54	7.260**
Human	1.08	0.	3.198**
Rewards & Punishments	79.08	58.00	4.303**
Decision Making Total	6.25	4.08	3.713**
Decision Making Ratio	.52	.59	- .765 [2]

**significant at .01 level (one-tailed test)

[1]For explanation of scoring procedure, see pages 23 and 24.

[2]Negative values for t denote Control mean greater than Experimental mean.

TABLE 6. PRETEST/POSTTEST DIFFERENCES AND TRAINING MEASURE MEANS FOR EXPERIMENTAL SUBJECTS

Measure[1]	Pretest Mean	Posttest Mean	t Statistic	Training Mean
Total	50.39	80.85	4.326**	76.23
Keys	62.31	81.39	3.932**	76.54
Goal Setting	34.39	58.85	2.992**	76.62
Instruction	75.39	84.54	1.245	61.46
Feedback	61.31	85.62	4.246**	85.00
Open-Ended Total	19.54	27.54	3.595**	---
Open-Ended Positive	14.85	26.77	5.558**	---
Clear	12.54	19.31	4.315**	77.69
Motivating	2.46	7.46	5.510**	71.85
Concrete	3.85	7.23	4.787**	73.77
Timely	7.15	10.00	3.840**	77.85
Clarifying	1.38	2.23	1.569	82.23
Reasonable	.54	.85	1.163	81.00
Relevant	.31	.69	.915	63.85
Considerate	1.31	4.85	5.780**	63.77
Human	.31	1.08	2.063*	80.54
Rewards & Punishment	55.08	70.08	3.705**	82.67
Decision Making Total	5.23	6.25	1.790*	---
Decision Making Ratio	.54	.53	-.378[2]	---

*significant at .05 level (one-tailed test)

**significant at .01 level (one-tailed test)

[1]For explanation of scoring procedure, see pages 21 and 22.

[2]Negative values for t denote Pretest mean greater than Posttest mean.

TABLE 7. PRETEST/POSTTEST DIFFERENCES FOR CONTROL SUBJECTS

Measure [1]	Pretest Mean	Posttest Mean	t Statistic
Total	59.39	61.85	.613
Keys	60.69	63.09	.535
Goal Setting	31.54	30.77	- .083 [2]
Instruction	83.15	84.54	.270
Feedback	57.92	58.77	.127
Open-Ended Total	16.46	14.85	- .872
Open-Ended Positive	13.62	9.46	-2.236*
Clear	11.46	8.62	-1.916
Motivating	2.23	.85	-2.966**
Concrete	4.23	2.92	-2.239*
Timely	6.46	5.46	-1.188
Clarifying	.77	.23	-1.257
Reasonable	.31	.23	- .266
Relevant	.38	.08	-1.359
Considerate	1.08	.54	-1.498
Human	.38	0.	-2.652*
Rewards & Punishment	56.00	58.00	.203
Decision Making Total	5.46	4.08	-2.308*
Decision Making Ratio	.53	.59	.543

*significant at .05 level (two-tailed test)

**significant at .01 level (two-tailed test)

[1]For explanation of scoring procedure, see pages 21 - 24 .

[2]Negative values for t denote Pretest mean greater than Posttest mean .

On-The-Job Performance Measures. Experimental and control group means and t statistics for these performance scores are contained in table 8. No significant differences were obtained between experimental and control subjects on these measures.

The means from the Recruit Questionnaire indices contained in table 8 are means of company means; that is, the questionnaire data were aggregated at the company level. Another way to consider the data is to aggregate at the individual recruit level, that is, to consider each recruit's response to each question rather than just considering company means. This seems justified in this instance, since the company commander's interactions with recruits on a one-to-one basis are of primary importance when one is analyzing interpersonal skill behavior. In other words, all recruits do not observe the same behavior in their company commander, which is implied when company means are used. The index means and t statistics resulting from this analysis of individual recruit responses are presented in table 9; twelve of these 26 Recruit Questionnaire indices are significantly better for experimental subjects than for control subjects. The greatest superiority of experimental subjects was found on the second administration of the survey where nine out of the 13 indices were in favor of the experimental subjects. The large increase in significance between tables 8 and 9 is to be expected, since the number of observations increased greatly. Thus, when one considers these data aggregated at the individual recruit level, a number of significant differences between experimental and control subjects are obtained.

Company Performance Measures. Experimental and control group means, and t statistics for these performance measures are found in table 10. There were no significant differences between experimental and control companies on eight of the twelve measures. However, on four of the measures, MED Barracks, MED Military, MED Brigade, and Sick Calls, control companies did significantly better than experimental companies. There was one difference where the experimental companies scored higher than the controls which was significant at the .10 level; this occurred on a measure of recruits' expectations about their life in the Navy.

However, when eight items from the second administration of the Recruit Questionnaire dealing with recruit attitudes and beliefs (Items 4-11) are considered individually, all except one (Item 9) show better results for the experimental subjects. A sign test shows this to be significant at the .05 level. Also, t-tests show that four of the seven items which favor experimental subjects are significant at the .05 level or better, while the one item favoring control subjects was not significant.

TABLE 8. EXPERIMENTAL VERSUS CONTROL DIFFERENCES ON ON-THE-JOB PERFORMANCE MEASURES

Measure [1]	Experimental Mean	Control Mean	t Statistic
Recruit Questionnaire First Administration			
Goal Setting	4.92	4.83	.336
Instruction	5.19	5.20	- .038 [2]
Feedback	4.48	4.40	.322
Clear	4.80	4.79	.095
Motivating	4.44	4.49	- .273
Concrete	4.98	4.94	.313
Timely	4.84	4.87	- .302
Clarifying	4.73	4.72	.091
Reasonable	4.77	4.89	- .929
Relevant	4.73	4.68	.273
Considerate	4.24	4.11	.615
Human	4.45	4.45	.005
Rewards & Punishment	4.71	4.63	.840
Recruit Questionnaire Second Administration			
Goal Setting	4.79	4.77	.066
Instruction	5.12	5.08	.208
Feedback	4.62	4.44	.668
Clear	4.80	4.74	.328
Motivating	4.63	4.44	.953
Concrete	4.81	4.72	.691
Timely	4.87	4.79	.723

TABLE 8. EXPERIMENTAL VERSUS CONTROL DIFFERENCES ON ON-THE-JOB PERFORMANCE MEASURES (CONT)

Measure[1]	Experimental Mean	Control Mean	t Statistic
Clarifying	4.73	4.54	.942
Reasonable	4.96	4.93	.318
Relevant	4.58	4.52	.327
Considerate	4.38	3.95	1.681
Human	4.59	4.40	1.032
Rewards & Punishment	4.44	4.41	.302
CC Values	33.83	32.73	.750
CC Behavior	32.00	31.91	.110
Batt Commander Rank	.570	.575	- .038
Batt Adjutant Rank	56.46	64.39	- .678
Battalion Rank	58.69	61.00	- .208
Feeder Report	83.00	80.54	.586

[1]For explanation of scoring procedure, see pages 24 and 26.
[2]Negative values for t denote Control mean greater than Experimental mean.

TABLE 9. EXPERIMENTAL VERSUS CONTROL DIFFERENCES ON RECRUIT QUESTIONNAIRE ON-THE-JOB PERFORMANCE MEASURES AGGREGATED AT THE INDIVIDUAL RECRUIT LEVEL

Measure [1]	Experimental Mean	Control Mean	t Statistic
First Administration	(N=888)	(N=847)	
Goal Setting	5.07	4.91	2.504**
Instruction	4.89	4.82	1.147
Feedback	4.46	4.38	1.344
Clear	4.79	4.78	.044
Motivating	4.45	4.47	- .680 [2]
Concrete	4.97	4.93	1.106
Timely	4.83	4.86	- .812
Clarifying	4.72	4.71	.278
Reasonable	4.77	4.88	-2.864**
Relevant	4.73	4.67	1.023
Considerate	4.15	4.08	1.408
Human	4.39	4.43	- .983
Rewards & Punishment	4.70	4.62	1.839*
Second Administration	(N=880)	(N=681)	
Goal Setting	4.85	4.73	1.799*
Instruction	4.78	4.74	.536
Feedback	4.63	4.45	2.687**
Clear	4.88	4.74	3.861**
Motivating	4.63	4.45	4.519**
Concrete	4.80	4.71	2.273*
Timely	4.87	4.79	2.359**

TABLE 9. EXPERIMENTAL VERSUS CONTROL DIFFERENCES ON RECRUIT QUESTIONNAIRE ON-THE-JOB PERFORMANCE MEASURES AGGREGATED AT THE INDIVIDUAL RECRUIT LEVEL (CONT)

Measure[1]	Experimental Mean	Control Mean	t Statistic
Clarifying	4.47	4.55	3.885**
Reasonable	4.96	4.93	.805
Relevant	4.59	4.52	1.118
Considerate	4.31	3.96	6.979**
Human	4.60	4.40	4.799**
Rewards & Punishment	4.44	4.41	.767

*significant at .05 level (one-tailed test)

**significant at .01 level (one-tailed test)

[1] For explanation of scoring procedure, see pages 24 and 25.

[2] Negative values for t denote Control mean greater than Experimental mean.

TABLE 10. EXPERIMENTAL VERSUS CONTROL DIFFERENCES ON COMPANY PERFORMANCE MEASURES

Measure[1]	Experimental Mean	Control Mean	t Statistic
MEDs			
Barracks	3.80	3.88	-2.286*[2]
Locker	3.59	3.67	-1.532
Personnel	3.45	3.56	-1.298
Infantry	3.29	3.42	-1.466
Academic	3.10	3.14	-1.119
Military	3.53	3.64	-2.093*
Brigade	3.45	3.54	-2.211*
Dropouts	19.15	20.23	- .473
Sick Calls	180.85	147.92	2.072*
Street Marks	.75	1.10	-1.032
Company Morale	3.22	3.20	.073
Company Expectations	4.61	4.48	1.953

*significant at .05 level (two-tailed test)

[1] For explanation of scoring procedure, see page 25 .

[2] Negative values for t denote Control mean greater than Experimental mean.

RELATIONSHIPS AMONG MEASURES

Relationships among various sets of measures were determined in an effort to better ascertain the effects of training on outcomes, both on-the-job performance and company performance. This also provided some opportunity to validate the relationship among the leadership skills being trained and traditionally valued outcomes, such as Battalion Staff ratings of company commanders and MED scores. For some pairs of sets of measures (e.g., Posttest versus On-The-Job Performance), certain relationships were hypothesized. The results were examined for supporting or refuting evidence for those hypotheses. There was also some investigation of whether outcomes were determined by factors other than leadership skills. Finally, some relationships were examined to determine the validity and stability of some of the measures used.

The Pearson product-moment correlation coefficient was used to measure these relationships. Since more than six thousand such correlation coefficients were computed, most of the results have been summarized in table 11. Table 11 presents the sets of measures which were considered. For each pair of sets where correlations were computed, the following information is given:

a. Number of correlations computed

b. General trends

c. Number and nature of significant correlations, i.e., "Positive," "Negative," or "Random."

Because of the non-definitive nature of the correlational data (due to the small number of subjects) only a superficial analysis for the most prominent relationships was attempted. In this analysis, a "trend" represents an apparent pattern of significant correlations between one measure and a set of other measures. In nearly all cases defined as a "trend", between 25 and 50 percent of the correlations between a measure and a set of other measures was significant.

The terms "positive trend" and "negative trend" imply significant results that support or refute hypotheses, rather than direction of relationship. Positive findings consist of significant trends present where significant trends were expected. Negative findings consist of either (a) significant trends present where none was expected, or (b) significant trends present in a direction opposite to those which were expected. A single correlation is called positive or negative in table 11 depending on whether it is part of a positive or negative trend. Because of the large nubmers of correlations which were computed, a certain number of significant correlations would be expected to occur by chance. Such occurrences of significant correlations in relative isolation, unassociated with trends or patterns, have been termed "random" in table 11. The results will be reported below in the order in which they appear from left to right, top to bottom in table 11. All relationships reported here were significant at the .05 level or better.

TABLE 11. SUMMARY OF FINDINGS FROM RELATIONSHIPS AMONG MEASURES

	Pretest Measures	Training Materials	Posttest Measures	On-The-Job Performance Measures	Company Performance Measures
Company Commander Background Measures	228 correlations 2 positive trends 13 positive 3 negative 6 random	192 correlations no trends 4 random	228 correlations 1 positive trend; 1 negative trend 8 positive 11 negative 5 random	384 correlations 1 negative trend 4 negative 3 random	168 correlations no trends 8 random
Company Demographic Measures					56 correlations 1 negative trend 5 negative 2 random
Pretest Measures		304 correlations no trends 12 random	361 correlations 1 positive trend 20 random	608 correlations 1 positive trend; 3 negative trends 7 positive 17 negative 4 random	266 correlations no trends 18 random
Training Materials			304 correlations 9 positive trends 73 positive	512 correlations 8 negative trends 52 negative 10 random	224 correlations no trends 7 random
Posttest Measures				608 correlations 1 positive trend; 1 negative trend 9 positive 10 negative 9 random	266 correlations 2 positive trends; 3 negative trends 18 positive 22 negative
On-The-Job Performance Measures					448 correlations 9 positive trends 91 positive 2 random

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COMPANY COMMANDER BACKGROUND. Company Commander Background measures were correlated with Pretest, Training, Posttest, On-The-Job Performance, and Company Performance measures.

Company Commander Background Versus Pretest. GCT level was positively related to five Pretest measures, including the Pretest Total score. Likewise, standing and performance in Company Commander School were related to several Pretest Measures. Both GCT and school performance scores reflect test-taking ability to some degree. Since the Pretest Score used here could be affected in the same way, the relationships found here are understandable.

Company Commander Background Versus Training. No relationships were found among these measures.

Company Commander Background Versus Posttest. Years of Supervisory Experience was positively correlated to eight Posttest scores, including Posttest Total. The implication that people may acquire interpersonal skills through experience alone appears reasonable.

A negative trend was found between Time Spent Shadowing and eleven Posttest Scores, including Posttest Total. The potential for the acquisition of behavior through modeling has been mentioned before. Given that generally the company commander's peer group at RTC does not support the kinds of behavior being trained and measured, the fact that subjects with longer exposure to RTC exhibit fewer such behaviors is understandable.

Company Commander Background Versus On-The-Job Performance. Only one trend was found among these correlations. Rank was negatively related to the behaviors associated with being Clear. Rank can be considered generally related to affiliation with the "old school" of supervision in the Navy, which tends not to support the behaviors being measured here. Further, rank is probably related to both psychological and, to some degree, physical distance from the recruits. This distance would tend to minimize the interactions which are required for a display of the behaviors in question.

Company Commander Background Versus Company Performance. No trends were found here. One correlation which was significant shows that Time Spent Shadowing is inversely related to Sick Call rates. It is interesting to note that variables such as GCT, Supervisory Experience, etc., apparently have no direct bearing on how well a company commander does with his company.

COMPANY DEMOGRAPHICS. Company Demographic measures were correlated with Company Performance measures. No other relationships with Company Demographic measures were examined. Average GCT, age, and average education were generally unrelated to these outcome measures with this exception: average education was positively correlated with MED Barracks. However, company size was negatively related to MED Barracks, MED Locker, and MED Personnel scores, and thus to MED Military and MED Brigade measures. Since these scores can be seen as reflecting a company commander's ability to manage and control a great deal of rather detailed individual behavior, it is not surprising that an increase in the number of persons whose behavior must be managed is associated with a decrease in these scores.

PRETEST MEASURES. Pretest measures were correlated with Training, Posttest, On-The-Job Performance, and Company Performance measures.

Pretest Versus Training. In relating these measures, while it would not have been surprising to find relationships among related areas across the two sets of measures, no significant trends were found.

Pretest Versus Posttest. The Pretest Feedback score was positively correlated with Posttest scores for all three keys. It may be that some of the subskills required for the three keys are naturally present in the population to some degree but only with regard to giving feedback and that training serves to generalize these subskills to the other two keys.

Pretest Versus On-The-Job Performance. Positive relationships were found between the Pretest Goal Setting score and several skill measures from the first Recruit Questionnaire. Here, too, it may be that some of the subskills which subjects naturally applied in the context of Goal Setting were able to generalize to a large range of interpersonal skill areas after training.

Several negative relationships were also found. The Pretest Feedback score and several first Recruit Questionnaire measures were negatively related. Also, the Pretest Instruction and Pretest Concrete scores were negatively correlated to several second Recruit Questionnaire measures. One possible explanation for these findings would posit that on the Pretest, subjects were compliant, and recognized and chose socially desirable answers. They did not exhibit these behaviors on the job because they were compliant in the RTC system as well, where the behaviors being taught are not generally supported by their peers.

Pretest Versus Company Performance. No significant trends were found.

TRAINING MEASURES. Training measures were correlated with Posttest, On-The-Job Performance, and Company Performance measures.

Training Versus Posttest. It was hypothesized that there would be at least some positive relationships between these sets of measures. This was clearly expected for measures of related areas. Due to the interdependent nature of the various skill areas, positive relationships were also expected across less obviously related areas. The findings generally fulfilled these expectations. No negative trends were found.

Training Versus On-The-Job Performance. Significant positive trends were hypothesized between the various Training measures and reports of On-The-Job Performance in the skill areas and other facets of company commander behavior. No such positive trends were found. There are several negative trends. There were significant negative relationships between several indices from the first Recruit Questionnaire administration and the following Training measures: Total, Characteristics, Clear, Motivating, Concrete, and Considerate. Negative relationships were also found between several indices from the second Recruit Questionnaire administration and Training, Total, and Human scores. Here again, subjects who were compliant in the training situation may have been compliant in the RTC system as well, resulting in the negative correlation. Further, poor performance in the training situation actually resulted in a subject's being exposed to more training materials, e.g., more specific feedback and remediation. In this sense, quantity of training is positively related to on-the-job performance, a not-unexpected result.

Training Versus Company Performance. While positive relationships between Training scores and Company Performance measures were expected, no positive trends were found.

POSTTEST MEASURES. Posttest Measures were correlated with On-The-Job Performance and Company Performance measures.

Posttest Versus On-The-Job Performance. While positive trends were expected between Posttest measures and On-The-Job Performance measures, only one was found: the Posttest Decision Making Ratio score was significantly related to several measures from the first administration of the Recruit Questionnaire. One negative trend was present: the Posttest Reasonable score was negatively related to several measures from the first Recruit Questionnaire administration. Aside from these trends, there were no other significant findings.

Posttest Versus Company Performance. It was expected that the relationships between Posttest measures and Company Performance measures would be largely positive. The results were mixed. Two positive trends were that Street Marks were negatively related to several Posttest measures and Company Expectations were positively related with several Posttest measures. On the negative side, MED Barracks and MED Academic were each negatively related with several Posttest measures, while Sick Calls were positively related with several Posttest measures.

ON-THE-JOB PERFORMANCE. On-The-Job Performance measures were correlated with Company Performance. Positive trends were expected and several were found. MED Locker, MED Personnel, MED Infantry, MED Military, and MED Brigade scores were each positively related to several On-The-Job Performance measures. Relationships in the expected direction were also found between several On-The-Job Performance measures and Street Marks, Recruit Company Morale, and Recruit Company Expectations. This is evidence for the value of the skills being trained in that effective company commanders exhibit them to a greater extent than ineffective company commanders.

RECRUIT QUESTIONNAIRE: FIRST ADMINISTRATION VERSUS SECOND ADMINISTRATION. The correlations between Recruit Questionnaire measures from the first and second survey administrations were determined. These relationships were examined to determine the stability of the measured behavior over time and the reliability of the instrument. Positive relationships were expected and many were found. Of the 196 correlations, 119 were significant, including twelve of the fourteen correlations between the same indices.

PLATO OPINIONNAIRE. The correlations between responses on the PLATO Opinionnaire and On-The-Job Performance and Company Performance measures were determined. There were four apparent trends. Ratings of the usefulness of the training materials on Considerate and Human and opinions of the training program in general were negatively related to several Recruit Questionnaire indices from the first administration. Once again, the possibility that compliant subjects recognized and chose socially desirable answers during training must be considered. There were positive relationships between attitude about being a company commander (item 5) and several of the indices from the second administration of the Recruit Questionnaire, indicating the more motivated company commanders exhibited the skills to a greater extent than less motivated company commanders. Seven of the eleven correlations between item 5 and these indices were positive and significant. There were no patterns of relationships between PLATO Opinionnaire items and Company Performance measures. Responses to item 3 (Students' opinions about the usefulness of the training) indicate that the training program was well accepted by the students. The mean rating was 4.61, where 1="a waste" and 5="very worthwhile".

SECTION V

DISCUSSION

The results presented in the previous section need to be considered from several perspectives in order to understand their implications. Obviously, with the great wealth of data available here, this discussion could become extremely detailed and minute. However, even the examination of general trends which will be undertaken here can provide valuable information and allow useful judgments to be made concerning the value of the study in general. Evidence for the value of the study comes from three kinds of data: (a) experimental versus control differences, (b) relationships among measures, and (c) acceptance by students.

EXPERIMENTAL VERSUS CONTROL DIFFERENCES

The primary issue to be considered here is the effects of the instructional treatment. Evidence for these effects is available in several forms in this study. The clearest form involves differences between experimental and control subjects. Experimental subjects scored significantly higher than controls on the Posttest, on the difference between Pre and Posttest, and on nine of the thirteen indices from the second administration of the Recruit Questionnaire (aggregated at the individual recruit level). Even when one considers these On-The-Job Performance measures aggregated at the company level experimental subjects scored higher than control subjects on 22 of the 26 indices from both administrations of the Recruit Questionnaire. A sign test for the significance of this result indicates that its probability is less than .001. Thus, the company commanders who were provided the training apparently learned the skills in training and exhibited the skills on the job.

Other effects attributable to the training are found in the attitudes and beliefs of recruits. These would be indirect consequences of the instruction (if it is assumed that they are due to behavioral changes noted in company commanders) and are also most pronounced in the second administration of the Recruit Questionnaire. Briefly, the attitudes and beliefs of recruits were better as follows. Experimental companies (relative to control companies): (a) rated their company commanders higher; (b) liked boot camp better; (c) thought boot camp would be more valuable to them; (d) expected to like the Navy more; (e) had more favorable attitudes toward reenlisting; (f) rated their overall morale as higher. This is evidence that the skills which the company commanders learned in training and exhibited on the job improved the outlook and morale of their companies.

On the negative side, experimental subjects did significantly worse than controls on three MED scores and Sick Calls. This negative finding for the Sick Call measure is tricky to interpret. Originally, the Sick Call measure was intended to be a measure of emotionally-related absenteeism. It may be, however, that company commanders who acquire interpersonal skills are more considerate of recruits' real needs and allow more sick call visits; where non-trained or unskilled company commanders are not so considerate.

A complete interpretation of the obtained differences in company performance requires a consideration of the comparability of experimental and control groups prior to training. While a comparison of Company Commander Background and Company Demographic measures showed considerable similarity, there were sizable differences between experimental and control subjects on three measures which are important determiners of the outcomes of interest here. On the average, experimental companies had less education than controls. Experimental companies also were larger than controls. Further, experimental subjects spent less time shadowing other company commanders. Indeed, not only did experimental subjects spend significantly less time shadowing before treatment, but the difference was in fact augmented after treatment. [The length of time between taking the posttest and picking up a company was significantly longer for control subjects (experimental mean = 9.69 days, control mean = 25.85 days; $t = 3.476$, significant at .002 level). Subjects returned to shadowing duty between the end of treatment and picking up a company.]

These three variables were all found to be related to outcome measures. All three were significantly correlated with company performance measures such that the experimental/control differences favor higher outcomes for control subjects. Specifically, Shadow Time was inversely related to Sick Calls, company education was positively related to MED barracks, and company size was inversely related to several MED scores. On the other hand, the three variables were generally found to be unrelated to the measures from the Recruit Questionnaire. None of the three was significantly correlated with any of the recruit attitude and belief items. There were five significant correlations (out of 78) between the three variables and the questionnaire indices. Four of these five correlations favored higher outcomes for control subjects.

Thus, the advantage of the control subjects on these three variables does not allow a straightforward evaluation of the effects of training on the company performance data. However, since these variables had few effects on measures from the Recruit Questionnaire (with those few effects favoring control subjects), the superior outcomes of the experimental subjects on these criteria can be attributed to training.

The influence of company commander background variables such as Shadow Time on company commander behavior is especially feasible when one considers that the effects of a maximum of ten hours training on subject matter as complicated as was undertaken here can be expected to have a rather limited impact. To obtain the strongest effects in such a short training time, one would need to put the experimental subjects in an experiential vacuum prior to assigning them companies and certainly not return them to an environment that is not geared to maintaining newly acquired interpersonal skills. It would be helpful to allow more time for this training such that it could better compete with antagonistic influences in the student's life.

RELATIONSHIPS AMONG MEASURES

The first question to be considered here concerns the validity of the skills covered in the training materials. It has already been indicated that the skills are valid in that their increased usage through training is apparently instrumental in improving recruits' attitudes and beliefs. Further information on validity comes from correlations between on-the-job performance and company performance for both experimental and control subjects. These correlations showed several positive trends which appear to validate the skills. Thus, the more a company commander performs the behaviors taught in the training program, the better his company tends to be (in terms of MED scores, street marks, and beliefs and attitudes of recruits). These beneficial effects from the behaviors are obtained independently of whether the behaviors are provided by the training or are there "naturally".

A second question concerns the ability to predict company performance measures from Pretest, Posttest, and Training measures. That is, are company commanders who do better during training and testing more successful on the job? Relating Training and Posttest measures to company performance produced mixed results. Knowing more seems to lead to better company performance in some areas and worse in others. This may be attributed to the fact that knowing is not doing. Good Training scores suggest that the company commander has the tools needed to reach his goals for his company. However, superior achievement of some traditional goals is not considered critical by the company commanders or RTC for the production of good sailors, while other goals (e.g., attitude toward the Navy) not directly measured by RTC are considered critical. Therefore, it would not be surprising if the PLATO training helped to de-emphasize some conventional goals and emphasize other less conventional goals. Once "valid" goals for RTC are known and can be measured, the skills taught to the company commanders can be directed to them.

A third question concerns the ability to predict on-the-job performance measures from training and testing measures. That is, are company commanders who do better in training and on tests more likely to perform the skills on the job? Here the answer is no. Training measures were found to be negatively related to several On-The-Job performance measures, mainly indices from the first administration of the Recruit Questionnaire. Posttest measures showed no clear-cut relationships with the On-The-Job performance measures.

A possible explanation for this is that a student who complied with the "system" during PLATO training (chose the more socially desirable answers) would achieve high training scores; whereas, if he complied with the "system" at RTC, he might tend to achieve low scores on the questionnaire. The fact that the number of negative relationships declined from questionnaire to questionnaire might indicate that these "compliant" subjects found some of the behaviors supported by RTC to be ineffective, and substituted behaviors which they had learned on PLATO.

A fourth question concerns the existence of variables other than the experimental treatment which might have influenced outcomes (on-the-job and company performance measures). These relationships were treated under the previous heading.

A final interesting finding is the group of significant and positive correlations between the motivation of experimental subjects to be company commanders (measured by Opinionnaire Item 5) and several on-the-job measures of skill performance. This can be interpreted in two ways. First, the more motivated company commanders may have learned more during the training. Thus, the correlations would be further evidence that the training had an effect. Second, more motivated company commanders might naturally score higher on measures of skill performance, even without training. If the assumption is made that more motivated company commanders are more likely to perform "good" behaviors, then the correlations would be further evidence of the validity of the skills trained. Some combination of these two interpretations is probably correct.

ACCEPTANCE BY STUDENTS

Responses to the PLATO Opinionnaire indicated that the students found the training program both interesting and useful. Item one, which asked about student interest in the individual skill areas, yielded a mean response of 3.89 (1 = "bore", 5 = "fascinating"). Item two, which asked about the usefulness of the individual skill areas yielded a mean response of 4.35 (1 = "useless", 5 = "very useful"). Item three, which asked about student reaction to the entire training program yielded a mean response of 4.62 (1 = "a waste", 5 = "very worthwhile").

Appendix A

SAMPLE OF

TRAINING MATERIALS

CONCRETE

Before we go any further, let's take a quick review of just what CONCRETE means!

CONCRETE means:

a) getting involved with the recruits
b) not giving the recruits more than they can handle
c) being specific and performance-oriented in all situations

c ok

GREAT! Now let's take a closer look at CONCRETE!

NAVTRAEQUIPCEN 74-C-0100-1

We have seen that CONCRETE means that you, as a Company Commander, should be SPECIFIC and PERFORMANCE-ORIENTED when dealing with your company or individual recruits. If you are concrete, specific, and performance-oriented, you will AVOID BEING MISINTERPRETED.

Which of the following statements is more CONCRETE?

a) An effective CC is a good leader of men and a pride to himself and the whole Navy.

b) An effective CC sets clear goals, gives detailed instruction, and provides immediate feedback.

b ok

That's right! The other statement is too vague and subject to different interpretations.

NAVTRAEQUIPCEN 74-C-0100-1

CONCRETE IN GOAL SETTING

CONCRETE - Goal Setting

To set goals concretely, you need to be very SPECIFIC. This means being clear and detailed. Tell the company exactly what it is you expect them to do.

Is each of the goal statements below CONCRETE in terms of being SPECIFIC?
(type y or n)

n ok ...Rogers, as a platoon leader, you should set a better example for the men.

y ok ...I expect to see an improved barracks inspection score.

y ok ...Johnson, try to bring your Academics score up to the company average this week.

n ok ...I want to see more teamwork around here.

y ok ...Let's try to get at least a 3.6 on locker inspection, O.K.?

> y ...There should be no hits for gear drift at barracks inspection tomorrow.

Great!

NAVTRAEQUIPCEN 74-C-0100-1

CONCRETE - Goal Setting

To set goals concretely, you need to be very SPECIFIC. This means being clear and detailed. Tell the company exactly what it is you expect them to do.

As well as being specific, a goal which is set concretely will include a STANDARD FOR SUCCESS. This will let a recruit know whether or not he has reached the goal. This also helps keep the goal PERFORMANCE-ORIENTED.

Is each of the goal statements below CONCRETE, that is, SPECIFIC and including a STANDARD FOR SUCCESS?

n ok ...Rogers, as a platoon leader, you should set a better example for the men.

n ok ...I expect to see an improved barracks inspection score.

y ok ...Johnson, try to bring your Academics score up to the company average this week.

n ok ...I want to see more teamwork around here.

y ok ...Let's try to get at least a 3.6 on locker inspection, O.K.?

y ...There should be no hits for gear drift at barracks inspection tomorrow.

Terrific!

CONCRETE IN INSTRUCTION

If you were in a class room being taught a skill that was vital to your future in the Navy, would you want the instructor to talk in vague terms and to just walk in, read the material, and walk out??

This may sound stupid to you, but it does happen. That is why it is important for you to be specific when training your company. Giving detailed, exact instructions will reduce misunderstanding and promote good performance.

Which of the following do you think is the most CONCRETE in terms of being SPECIFIC?

a. "OK, recruits, you fold your skivvies one way and you fold your shirts another."

b. "Recruit, when you do a "March to the Rear", you pivot on your left heel and turn 180° facing backwards."

c. "This is real easy to do so don't worry about it."

b ok

CORRECT! THIS IS SPECIFIC!!

NAVTRAEQUIPCEN 74-C-0100-1

CONCRETE - Instruction

To make your instruction more concrete and PERFORMANCE-ORIENTED, try using DEMONSTRATIONS. It is much easier for the recruit to follow what you are saying if you also present a visual example for him to try to imitate in the future.

Now, which of the following would be good CONCRETE instruction to use when telling the company how to fold a towel?

a) " Here is an example of a properly folded towel, men. If yours looks like this then you've got it right."

b) " OK men, watch me. You fold the towel to the center, then in half from left to right like this, and then fold the bottom third over the top third like so."

c) " The manual here says to lay the towel flat, fold each side toward the center, then fold in half, right to left, fold the lower 1/3 of it over the upper 1/3 and rotate to ensure equal wear."

> b ok

Correct! Here you are providing a demonstration!

NAVTRAEQUIPCEN 74-C-0100-1

CONCRETE - Instruction

As you may remember, giving instruction also includes SETTING EXPECTATIONS. That is, anytime your company or members of it, are about to experience something that is new to them, it is important that you give them information about what will happen.

When setting expectations, you should be CONCRETE, that is, be very SPECIFIC about what to expect. A company with concrete expectations will respond better to instruction than a company that is confused about what is happening.

NAVTRAEQUIPCEN 74-C-0100-1

CONCRETE - Instruction

Suppose your company is about to go to the RIF to have a medical inspection to determine which recruits should not work in the galley during Service Week.

Which of the following is the best statement you might make to the company at this point?

a. "The RCPO will take you to the RIF for a medical inspection. The staff there will tell you what to do, so don't worry about it. Are there any questions? I don't want to hear any complaints from the RIF staff."

b. "You're going to the RIF now for a fast inspection that's part of preparing for Service Week. The staff there will decide if you shouldn't work in the galley. This inspection isn't part of the MED ratings, so don't worry about that."

c. "You're going to get a quick inspection at the RIF now. One of the medical staff will look at your hands and face to see if you have any skin problems that should keep you off galley duty during Service Week. Any questions?"

NAVTRAEQUIPCEN 74-C-0100-1

CONCRETE IN FEEDBACK

CONCRETE - Feedback

In giving CONCRETE feedback, you should give the recruits SPECIFIC information as to how they are performing in their various duties and skills.

It is better to give SPECIFIC examples of what is wrong or right than to make general statements. Specific feedback is clear, detailed and tells the person exactly what he has done. General feedback only informs the person that something in his behavior is right or wrong, but not what it is.

Now let's answer some questions!

NAVTRAEQUIPCEN 74-C-0100-1

CONCRETE - Feedback

In giving CONCRETE feedback, you should give the recruits SPECIFIC information as to how they are performing in their various duties and skills.

It is better to give SPECIFIC examples of what is wrong or right than to make general statements. Specific feedback is clear, detailed and tells the person exactly what he has done. General feedback only informs the person that something in his behavior is right or wrong, but not what it is.

For each of the following situations, pick the feedback choice that is most specific. In each case type in the number of the response you choose.

**** Recruit's skivvy shorts are folded incorrectly ****

a) "Recruit, stow your shorts right!"
b) "Recruit, your shorts are folded wrong."
c) "Recruit, the fold in your shorts is not a thumb's width."
d) "Recruit, what's wrong with your locker?"

>

NAVTRAEQUIPCEN 74-C-0100-1

CONCRETE - Feedback

In giving CONCRETE feedback, you should give the recruits SPECIFIC information as to how they are performing in their various duties and skills.

It is better to give SPECIFIC examples of what is wrong or right than to make general statements. Specific feedback is clear, detailed and tells the person exactly what he has done. General feedback only informs the person that something in his behavior is right or wrong, but not what it is.

**** Recruit who has previously scored very low has done well in the MED locker inspection ****

a) "I'm proud of you."
b) "You are doing very well."
c) "Your MED locker scores have really improved."
d) "You're a good recruit."

> ok

NAVTRAEQUIPCEN 74-C-0100-1

CONCRETE - Feedback

As well as being specific, concrete feedback is PERFORMANCE-ORIENTED. This means that it should describe the performance in question, rather than the person involved. Positive or negative information should be fed back about a person's performance, rather than making positive or negative references to the person himself.

For each of the following situations, select the feedback choice that is most CONCRETE in terms of being PERFORMANCE-ORIENTED.

Recruit has hat on in barracks

a) "I can't stand guys who can't remember to take their hats off in the barracks."
b) "If you can't remember to take your hat off in here, you're dumber than I thought."
c) "Hats off in the barracks, recruit."

NAVTRAEQUIPCEN 74-C-0100-1

CONCRETE - Feedback

As well as being specific, concrete feedback is PERFORMANCE-ORIENTED. This means that it should describe the performance in question, rather than the person involved. Positive or negative information should be fed back about a person's performance, rather than making positive or negative references to the person himself.

For each of the following situations, select the feedback choice that is most CONCRETE in terms of being PERFORMANCE-ORIENTED.

Company has not done well on infantry scores

a) "You idiots can't do anything right!"
b) "This company has got to start marching better."
c) "If you can't walk straight, you shouldn't be in the Navy."

NAVTRAEQUIPCEN 74-C-0100-1

CONCRETE - Feedback

As well as being specific, concrete feedback is PERFORMANCE-ORIENTED. This means that it should describe the performance in question, rather than the person involved. Positive or negative information should be fed back about a person's performance, rather than making positive or negative references to the person himself.

For each of the following situations, select the feedback choice that is most CONCRETE in terms of being PERFORMANCE-ORIENTED.

***Recruit tells CC, "I was late from chow because there were no chairs in the lunchroom." CC says:

a) "Lunchroom? We'll never make a sailor out of you!"
b) "You mean chowhall, don't you?"
c) "You can't say anything right, dummy!"

NAVTRAEQUIPCEN 74-C-0100-1

The key concepts to remember when being CONCRETE are PERFORMANCE-ORIENTED and SPECIFIC!
Press -next- to see what we mean.

1***set specific goals which include a standard for success

2***be specific when instructing recruits and use demonstrations!

3***be specific in feedback and relate it to the recruits' performance!

Now let's take a review over the materials presented so far!!

NAVTRAEQUIPCEN 74-C-0100-1

Here's a quick review of the materials presented on being CONCRETE.

FOR EACH OF THE FOLLOWING STATEMENTS, IF YOU THINK IT IS TRUE, TYPE "y"; IF YOU THINK IT IS FALSE, TYPE "n".

A) Goal setting should include a standard for success.

B) Demonstrations should not be used when teaching.

C) When responding to recruits' questions, it is ok to reply vaguely if you think the question is unnecessary.

D) Giving an example of something would add to the concreteness of the situation.

E) When the company is going to encounter something new, you should let them know what is going to happen.

NAVTRAEQUIPCEN 74-C-0100-1

This concludes the lesson on being CONCRETE.
You will now return to the index of lessons
where you will be branched to a new
skill area.

Appendix B

Sample Questions

Pretest/Posttest

Type the letter of the response you think is best, then press -NEXT-.

Feedback 1. Harris asks if his bunk is stowed properly (his blanket is upside down).

a) say nothing
b) "No, get it squared away."
c) "Your blanket is upside-down. Try it again, OK?"
d) "No, the blanket is fouled up, understand?"

»

Goal Setting 2. A mock locker inspection is planned for fourth period tomorrow.

a) say nothing
b) "Get here on time for the call locker tomorrow."
c) "Let's try for straight 4.0's at that call locker during fourth period tomorrow."
d) Post this sign on the bulletin board, "Remember the call locker at fourth period tomorrow. Attendance is required."

»

NAVTRAEQUIPCEN 74-C-0100-1

COMPANY COMMANDER QUESTIONNAIRE

Name_____

Rating_____

Rank_____

Assume that you are a Company Commander, and that your company is practicing marching during the second week of training. For each of the events below, write down what you would say or do. If you would say or do nothing, write the word "nothing" in the space.

1. Your RCPO has done a very good job drilling the company.

Feedback.

4. Many recruits seem confused about "dress right dress."

Instruction.

7. You think the RCPO can handle the company on his own for the rest of the hour.

Goal Setting.

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Appendix C

Company Commander Background Questions

GENERAL BACKGROUND

Some information about your general background would be useful. Please answer the following questions by selecting the choice that best describes you.

press -NEXT-

Type the letter which applies to you, then press -NEXT-

1. How long have you been in the Navy?
   a. Ø-1Ø years
   b. 11-15 years »
   c. 16-2Ø years
   d. 21 or more years

NAVTRAEQUIPCEN 74-C-0100-1

TYPE THE LETTER WHICH APPLIES TO YOU, THEN PRESS -NEXT-

2. How old are you?

   a. 20-30 years

   b. 31-40 years

   c. 41-50 years ≫

   d. 51 or more years

NAVTRAEQUIPCEN 74-C-0100-1

TYPE THE LETTER WHICH APPLIES TO YOU, THEN PRESS -NEXT-

3. How much education did you complete?

   a. grade school

   b. high school »

   c. some college

   d. college degree

NAVTRAEQUIPCEN 74-C-0100-1

TYPE THE LETTER WHICH APPLIES TO YOU, THEN PRESS -NEXT-

4. What is the maximum number of non-recruit personnel you have supervised at any one time?

   a. 0 ≫

   b. 1-5

   c. 6-15

   d. more than 15

NAVTRAEQUIPCEN 74-C-0100-1

TYPE THE LETTER WHICH APPLIES TO YOU, THEN PRESS -NEXT-

5. How long have you been a supervisor of non-recruits?

   a. up to 1 year

   b. 1-5 years

   c. 6-15 years

   d. more than 15 years

   e. never supervised non-recruits.

NAVTRAEQUIPCEN 74-C-0100-1

TYPE THE LETTER WHICH APPLIES TO YOU, THEN PRESS -NEXT-

6. How much time have you spent shadowing a Company Commander?

   a. 0 weeks

   b. 1-2 weeks

   c. 3-4 weeks

   d. 5 or more weeks

NAVTRAEQUIPCEN 74-C-0100-1

Appendix D

Company Commander Survey

Form I

"R" before an item denotes that its scale was reversed in scoring

"V" before an item denotes that it was included in the index called "Values"

"B" before an item denotes that it was included in the index called "Behavior"

NAVTRAEQUIPCEN 74-C-0100-1

COMPANY COMMANDER SURVEY

Name _____

Do you agree or disagree with the following statements?

(Please circle the one best choice for each item)

		Strongly disagree		Neither agree nor disagree		Strongly agree
V R	1. A Company Commander has to be careful about how much information he shares with recruits.	1	2	3	4	5
V R	2. If you show a recruit how to do something, he will never learn it on his own.	1	2	3	4	5
V R	3. Because of the nature of the Company Commander's job, it is difficult to treat recruits as individuals.	1	2	3	4	5
V	4. A Company Commander can acquire new leadership skills regardless of his particular personality or past experience.	1	2	3	4	5
V	5. It is essential for the good Company Commander to be sensitive to the feelings of others.	1	2	3	4	5
V R	6. The average recruit dislikes work and will avoid it if he can.	1	2	3	4	5
V R	7. It is the tough, impersonal Company Commander who is able to do a good job.	1	2	3	4	5
V	8. Even though every company is different, there are general leadership principles that apply to all companies.	1	2	3	4	5

I

	To a very little extent		To some extent		To a very great extent
9. To what extent are you satisfied with your career in the Navy?	1	2	3	4	5
10. To what extent are you satisfied with being assigned duty as a Company Commander?	1	2	3	4	5
B 11. To what extent do you think you have the abilities needed to be a good Company Commander?	1	2	3	4	5
12. To what extent do you think you will interact with individuals in your company (give advice, give instructions)?	1	2	3	4	5
In your experience, to what extent do you think each of the following will be effective in getting recruits motivated and committed to doing good work?					
13. giving commands, orders	1	2	3	4	5
B 14. giving instructions	1	2	3	4	5
B 15. giving demonstrations	1	2	3	4	5
B 16. giving rewards	1	2	3	4	5
17. giving punishments	1	2	3	4	5
To what extent do you think each of the following will affect the punishment you give a recruit?					
18. his previous behavior	1	2	3	4	5
19. whether other recruits have been punished for the same thing	1	2	3	4	5
20. your assessment of the recruit's emotional condition	1	2	3	4	5
21. the need to treat recruits equally	1	2	3	4	5
22. his MED ratings	1	2	3	4	5

		To a very little extent		To some extent		To a very great extent
To what extent do you think each of the following will make recruits work hard in the most successful companies?						
	23. a fear of being punished	1	2	3	4	5
	24. a desire to look good on their MED ratings	1	2	3	4	5
	25. something inside them that makes them want to do a good job	1	2	3	4	5
	26. a hope of gaining a reward	1	2	3	4	5
	27. the experiences they have working with other recruits in the company	1	2	3	4	5
To what extent do you think you will use each of the following approaches to tell a recruit that something he has done is wrong or poor?						
	28. make him do push-ups	1	2	3	4	5
	29. describe his actions as stupid, childish, or bad	1	2	3	4	5
	30. tell him in general terms that he is wrong; for example, "That's wrong, recruit."	1	2	3	4	5
B	31. tell him specifically what is wrong and/or why it is wrong	1	2	3	4	5
B	32. tell him specifically what is wrong and give suggestions on how to improve	1	2	3	4	5

33. In your company, who will administer rewards to recruits?

1. Company Commander always
2. RPO's always
3. Company Commander and RPO's
4. No one; rewards will be given rarely

34. In your company, how will good work be rewarded?

1. Individuals only
2. Groups only (squads, platoons, entire company)
3. Both individuals and groups
4. Good work will not be rewarded

35. In your company, who will administer punishments to recruits?

1. Company Commander always
2. RPO's always
3. Company Commander and RPO's
4. No one; punishments will be given rarely

36. In your company, how will poor work be punished?

1. Individuals only
2. Groups only (squads, platoons, entire company)
3. Both individuals and groups
4. Poor work will not be punished

37. B How do you think you will tell a recruit that something he has done is wrong or poor?

1. Make him do push-ups
2. Say what he did is stupid, childish, or bad
3. Tell him in general terms that he is wrong; for example, "That's wrong, recruit."
4. Tell him specifically what is wrong and/or why it is wrong
5. Tell him specifically what is wrong and give suggestions on how to improve
6. None of the above.

Appendix E

Recruit Questionnaire

"R" before an item denotes that its scale was reversed in scoring

RECRUIT QUESTIONNAIRE _____ (4-7)

This questionnaire will ask you questions about yourself, recruit training, your Company Commander, and Navy life in general. It is part of a research project being done by civilian employees of the Navy. The results will be used to improve recruit training.

Please answer the questions as honestly as you can. You will not be asked to put your name on this questionnaire. The results will be used for research purposes only, and will not be used for any official ratings of you, your company, or your Company Commander. Please ignore the numbers in parentheses (); they are used to help score the questionnaires.

COMPANY _____ (8-10)
DAY OF TRAINING _____ (11)
ARE YOU AN RPO? O Yes O No (12)
AGE _____ (13-14)

FOR THE FOLLOWING QUESTIONS, PLEASE CIRCLE THE NUMBER OF THE ANSWER CHOSEN.

1. What is your educational level?

1. grammar school only
2. some high school
3. high school graduate
4. some college
5. college graduate (15)

2. What is the single most important reason why you joined the Navy?

1. for travel and adventure
2. for educational opportunities
3. wanted to serve my country
4. wanted a secure job
5. interest in the sea and ships (16)
6. couldn't find a good civilian job

3. The discipline in boot camp has been:

1. much more strict than I thought it would be
2. somewhat more strict than I thought it would be
3. slightly more strict than I thought it would be
4. slightly less strict than I thought it would be
5. somewhat less strict than I thought it would be
6. much less strict than I thought it would be (17)

4. So far:

1. I dislike boot camp quite a lot
2. I dislike boot camp slightly
3. I like boot camp slightly
4. I like boot camp fairly well
5. I like boot camp quite a lot
6. I really like boot camp very much (18)

5. I think that the training I am receiving at boot camp will be:

1. extremely valuable to me later on in the Navy
2. quite valuable to me later on in the Navy
R 3. fairly valuable to me later on in the Navy
4. slightly valuable to me later on in the Navy
5. of almost no value to me later on in the Navy
6. worthless to me later on in the Navy (19)

6. After boot camp, I expect that:

1. I will dislike the Navy quite a lot
2. I will dislike the Navy slightly
3. I will like the Navy slightly
4. I will like the Navy fairly well
5. I will like the Navy quite a lot
6. I will really like the Navy very much (20)

7. If I had to guess right now about how likely I am to reenlist when my first hitch is up, I would say:

1. I'm sure that I will reenlist
2. I probably will reenlist

R 3. I'm slightly in favor of reenlisting

4. I'm slightly in favor of not reenlisting
5. I probably will not reenlist
6. I'm sure that I will not reenlist (21)

8. If a civilian friend of mine were thinking of joining the Navy:

1. I would definitely tell him not to join
2. I would probably tell him not to join
3. I would be slightly more likely to tell him not to join
4. I would be slightly more likely to tell him to join
5. I would probably tell him to join
6. I would definitely tell him to join (22)

9. I think that my company is:

1. definitely the best at RTC
2. one of the best at RTC
3. far above average

R 4. slightly above average

5. slightly below average
6. far below average (23)

10. I think that the morale in my company is:

1. far below average
2. slightly below average
3. slightly above average
4. far above average
5. higher than almost all of the other companies
6. definitely the highest of all companies (24)

11. Compared to the other CC's at RTC, I think that my CC is:

1. definitely the best at RTC
2. one of the best at RTC
3. much better than the average CC

R 4. slightly better than the average CC

5. slightly worse than the average CC
6. much worse than the average CC (25)

FOR EACH ITEM BELOW, PLEASE CIRCLE ONE NUMBER ON THE RIGHT TO SHOW HOW THE STATEMENT APPLIES TO YOUR CC.

	Never	Almost Never	Sometimes	Often	Almost Always	Always	
12. When my CC explains something to the company, every recruit understands what he says.	1	2	3	4	5	6	(26)
13. When our CC tells us what we need to know to do a job, he tells us in the clearest possible way.	1	2	3	4	5	6	(27)
14. R My CC only explains things generally and doesn't get into specific details.	1	2	3	4	5	6	(28)
15. When my CC explains something, he makes sure everyone understands before going on to something else.	1	2	3	4	5	6	(29)
16. When my CC tells us what he wants us to do, he explains all the steps that are required to do it.	1	2	3	4	5	6	(30)
17. My CC sets specific goals for the CO. (Like "I want to see a 3.6 in academics next week.")	1	2	3	4	5	6	(31)
18. My CC has the company's full attention when he talks.	1	2	3	4	5	6	(32)
R19. It's easy to forget what our CC tells us.	1	2	3	4	5	6	(33)
20. R My CC wastes a lot of time on things that aren't really important.	1	2	3	4	5	6	(34)
21. My CC can tell whether we understand what he says just by looking at us.	1	2	3	4	5	6	(35)
22. My CC is very willing to answer our questions.	1	2	3	4	5	6	(36)
23. My CC demonstrates things to us by running through them himself.	1	2	3	4	5	6	(37)
24. R My CC tries to tell us something when we are listening to or busy with something else.	1	2	3	4	5	6	(38)
25. My CC gives us information about a job close to when we are working on that job.	1	2	3	4	5	6	(39)
26. My CC repeats important things often.	1	2	3	4	5	6	(40)
27. If my CC notices an example of what he has told us, he points it out to us (like "See that company marching? That's how to look.")	1	2	3	4	5	6	(41)

	Never	Almost never	Sometimes	Often	Almost always	Always	
28. My CC tells us what is most important to work on.	1	2	3	4	5	6	(42)
29. My CC encourages us to ask questions about things we don't understand.	1	2	3	4	5	6	(43)
30. My CC asks specific questions of individual recruits to see if they understand something.	1	2	3	4	5	6	(44)
31. My company can't do a good job because my CC doesn't give us enough time to do it.	1	2	3	4	5	6	(45)
32. My CC expects the impossible from the company.	1	2	3	4	5	6	(46)
R 33. My CC is too easy on us.	1	2	3	4	5	6	(47)
R 34. Even if we had all the time in the world, we couldn't do the things our CC asks of us.	1	2	3	4	5	6	(48)
35. After my CC explains what he wants, the recruits like doing it for him.	1	2	3	4	5	6	(49)
36. My CC gives us good reasons for the things we do.	1	2	3	4	5	6	(50)
37. My CC treats us like human beings.	1	2	3	4	5	6	(51)
38. My CC acts like a machine.	1	2	3	4	5	6	(52)
R 39. My CC tells us how the skills we learn at RTC are going to make us better sailors.	1	2	3	4	5	6	(53)
40. My CC tells us how what we do everyday will help us get through RTC.	1	2	3	4	5	6	(54)
41. My CC is aware of the morale of the company.	1	2	3	4	5	6	(55)
42. My CC makes recruits feel unimportant.	1	2	3	4	5	6	(56)
R 43. My CC tries to make us think he's perfect.	1	2	3	4	5	6	(57)
R 44. I feel that I know my CC pretty well.	1	2	3	4	5	6	(58)
45. My CC doesn't care one way or another about how the company does.	1	2	3	4	5	6	(59)
R 46. My CC asks recruits how they feel about things.	1	2	3	4	5	6	(60)
47. My CC can tell when a recruit is feeling bad just by looking at him.	1	2	3	4	5	6	(61)

	Never	Almost never	Sometimes	Often	Almost always	Always	
48. My CC expresses confidence in the company's ability.	1	2	3	4	5	6	(62)
R 49. My CC gets mad very easily when we can't get something right.	1	2	3	4	5	6	(63)
50. My CC calls us by our own names (or something friendly like "Son").	1	2	3	4	5	6	(64)
R 51. If a recruit fouls up, my CC calls him names (like idiot, dumb-ass, worm, etc.)	1	2	3	4	5	6	(65)
52. My CC treats all recruits equally.	1	2	3	4	5	6	(66)
53. If my CC doesn't know something, he admits he doesn't know it.	1	2	3	4	5	6	(67)
R 54. My CC tries to hide it when he does something wrong.	1	2	3	4	5	6	(68)
55. My CC often tells us about how the company's performance makes him feel good (like saying "I'm proud of you.")	1	2	3	4	5	6	(69)
56. My CC tells us about his experiences in the Navy.	1	2	3	4	5	6	(70)
57. My CC has a good sense of humor.	1	2	3	4	5	6	(71)
58. If the company does poorly on something, my CC takes part of the blame himself.	1	2	3	4	5	6	(72)
59. When a recruit does a good job on something, my CC gives him a reward (like a smoke break, use of the stereo, and so on).	1	2	3	4	5	6	(73)
60. When a recruit does something wrong, my CC gives him some punishment (like push-ups, loss of smoke breaks, and so on).	1	2	3	4	5	6	(74)
61. When my CC gives a recruit a reward or punishment, he tells the recruit exactly (in detail) what the reason is.	1	2	3	4	5	6	(75)
62. My CC tells us what goals he wants us to reach.	1	2	3	4	5	6	(76)

	Never	Almost never	Sometimes	Often	Almost always	Always	
63. My CC teaches us how to be good recruits.	1	2	3	4	5	6	(77)
64. My CC tells us how well we are doing.	1	2	3	4	5	6	(78)
65. My CC is good at motivating the men.	1	2	3	4	5	6	(79)
66. My CC emphasizes correcting rather than punishing mistakes.	1	2	3	4	5	6	(80)

Appendix F

Battalion Staff Ranking Form

STATEMENT OF PURPOSE

The Institute for Social Research of the University of Michigan in conjunction with the Naval Training Equipment Center in Orlando is conducting a research study on company commander effectiveness. At this juncture of the research, we are collecting various measures or indicators of company commander effectiveness. We are using this and other information to develop and evaluate training materials designed to provide company commanders with some skills that will help them be more effective in their jobs. We believe you can contribute to this effort by supplying us with the information requested in the attached sheet. Specifically, we are asking you to rank the company commanders in your own battalion in terms of their overall effectiveness. Some are certain to be doing their jobs more effectively than others. In arriving at your judgements of overall effectiveness, you may wish to consider such factors as: extent to which the company commander performs his duties in accordance with established procedures, his ability to organize the work assignments of his company, the extent to which he transmits to his men the values and mission of the Navy, and any other factors you think are important.

The attached sheets contain instructions and a form for recording your judgements. We are collecting this type of information from battalion commanders and their adjutants. It is important that the rankings be made independently. Therefore, please do NOT consult with your battalion commander or adjutant (as the case may be) when you fill out the attached form. We wish to emphasize that your judgements will be used for research purposes only and will be treated confidentially.

PROCEDURE FOR COMPLETING ALTERNATION RANKING FORM

1. Please fill in the identifying information requested at the top of the Alternation Ranking Form.

2. In the first column of the form, marked "Alphabetic Listing of Company Commanders", list in alphabetic order the names of the company commanders in your present battalion.

3. Look at the list and decide which one person you think is best in terms of overall effectiveness as a company commander. Draw a line through his name and write it in the blank space marked "Highest" in the column, "Rankings of Company Commanders".

4. Look over the remaining names and decide which one person is not as effective as the others on the list. Draw a line through his name and write it in the blank space marked "Lowest" at the bottom of the page in the column, "Rankings of Company Commanders".

5. Next, select the person you think is best of those remaining on the list of "Alphabetic Listing of Company Commanders", draw a line through his name and record it in the blank space marked "Next Highest".

6. Then, select the person you think is not as good as the others remaining on the list of "Alphabetic Listing of Company Commanders", draw a line through his name and write it in the space marked "Next Lowest".

7. Continue in this fashion (successively picking the next highest, then next lowest) until you have drawn a line through every name in the "Alphabetic Listing of Company Commanders".

8. Please return the completed Alternation Ranking Form in the accompanying envelope to NTEC (code N-215) by the end of the week.

ALTERNATION RANKING FORM FOR RESEARCH PURPOSES ONLY

IMPORTANT: Please read the instructions carefully before you begin.

Battalion Number: _____

Check One: ( ) Battalion Commander
( ) Battalion Adjutant

Date: _____

Alphabetic Listing of Company Commanders	Rankings of Company Commanders
	Highest _____
	Next Highest _____
	Next Highest _____
	Next Highest _____
	Next Highest _____
	Next Highest _____
	Next Highest _____
	Next Highest _____
	Next Highest _____
	Next Highest _____
	Next Lowest _____
	Next Lowest _____
	Next Lowest _____
	Next Lowest _____
	Next Lowest _____
	Next Lowest _____
	Next Lowest _____
	Next Lowest _____
	Next Lowest _____
	Lowest _____

Appendix G

PLATO Opinionnaire

PLATO Opinionnaire 1

This (Name of Lesson) training program was a bore.
This (Name of Lesson) program was not very interesting.
Neither liked or disliked this lesson.
I found the (Name of Lesson) program interesting.
This (Name of Lesson) program was fascinating!

PLATO Opinionnaire 2

This (Name of Lesson) training program is useless to me
This (Name of Lesson) program is not very useful
This lesson was neither useful nor useless
This program on (Name of Lesson) was of some use
This (Name of Lesson) lesson was very useful for me

PLATO Opinionnaire 3

Now I'm beginning to think the whole training program is a waste
I keep thinking I could be utilizing my time in a more useful way.
This whole training program is neither helpful nor wasteful
The whole training program has been useful for me so far
I think that the whole training program has been very worthwhile

PLATO Opinionnaire 4

I'm beginning to think that I will be a lousy Company Commander!
I'm beginning to think that I won't be a very good Company Commander
I'm beginning to think that I will be an average Company Commander
I'm beginning to think that I might be a very good Company Commander
I'm beginning to think that I will be a very good Company Commander

PLATO Opinionnaire 5

The last job I want right now is being a Company Commander
I don't think that I want to become a Company Commander
It doesn't matter if I get to become a a C.C., or not.
I want to become a CC
The only job I want right now, is to be a Company Commander

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