PERSONNEL RESEARCH SERIES

PRS

A PATH TO MANAGEMENT DEVELOPMENT AND TO THE MEASUREMENT OF ITS GROWTH

Francis L. Harmon

PRS 63-2
February, 1963

A PATH TO MANAGEMENT DEVELOPMENT AND TO THE MEASUREMENT OF ITS GROWTH

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Office of Personnel

United States Department of Agriculture

Washington, D. C.

Report 63-2

April, 1963

FOREWORD

No one questions the need for quality training programs. However, it is very appropriate that we attempt to get the most value out of our training "dollar." As a matter of fact, this phase of our training effort is long overdue.

Here is a report of an attempt to develop a method of training evaluation that is closely identified with operational requirements and active supervisory responsibilit It was designed by our Personnel Research Staff. It can be implemented at any organizational level.

This report contains information that raises pointed questions. Careful study of questions like these can show us how to overcome shortcomings in our training effort, and how our total training program can make its most effective contribution.

In addition to Problem Analysis and Decision-Making training, we are already applying this method to the SED and SIMM programs. All of you who have a share in training efforts will, I am sure, see other ways in which this method can be put to work to point up more questions and develop more information that can be of value to you.

Carl B Barnes

SUMMARY AND HIGHLIGHTS

The purpose of this research was to develop a method which could serve as a prototype for evaluating managerial training. In addition to exemplifying the general rules underlying all training evaluation, the procedure was designed to test the effectiveness of the training effort against specific requirements of a sound training program. These requirements include awareness by participants and their supervisors of the specific objectives of the proposed training, encouraging continuing attention to employee development needs, the integration of training with operations, and adequate follow-up by supervisors as well as by training staffs.

Two sets of two questionnaires each were constructed. One set was for participants; the other for supervisors. Each set included a questionnaire to be administered before training, and another for use immediately after training. The questionnaires were administered in connection with the Kepner-Tregoe course in Management Problem Analysis and Decision Making. Of a total of 54 participants in five separate sessions of the course, 53 returned completed questionnaires. Returns from supervisors were approximately 75%. Responses of both groups were content-analyzed and classified according to level or quality of content.

RESPONSES TO PRE-TRAINING QUESTIONS

Most participants and supervisors had more or less clearly expressed ideas as to the objectives of the course, but only 19% of the supervisors and 26% of the participants identified these objectives with the work of the participant or his value as an employee.

13% of the participants and 26% of the supervisors gave responses that reflected no awareness of career plans or career development.

26% of participants and 43% of supervisors were able to mention specific problems which they hoped would be handled more effectively by the participant after training. 34% and 24%, respectively, were unable to point to any specific problem or problem area to which they thought the training might be applicable.

In approximately 50% of the cases no discussion took place between participant and supervisor prior to training.

About 30% of both groups cited specific incidents of job performance that pointed up the need for this kind of training. 34% of participants and 47% of supervisors failed to present any specific evidence of training needs.

73% of supervisors and 62% of participants considered the advance information concerning the course adequate. 27% and 38%, respectively, felt that it was insufficient or non-existent.

Approximately 25% of the responses explicitly mentioned the participant as taking part in the decision that he attend the course. 11% of the participants were unable to say who had taken part in the decision.

RESPONSES TO POST-TRAINING QUESTIONS

21% of the supervisors and 58% of the participants reported changes in their ideas concerning the objectives of the course.

The percentage of participants who were able to suggest specific applications in their regular jobs increased from 26% before training to 46% after training. The percentage who were unable to visualize any useful applications of the course dropped from 34% to 14%.

Of 42 participants for whom complete data were available, 50% were able both to specify applications of the training and to cite situations which they would have handled differently if they had already taken the course. 7% were unable to indicate either applications or situations that they would have handled differently.

Most participants and supervisors indicated some plans for mutual discussion and follow-up regarding the results of the training.

QUESTIONS

Is there sufficient communication between training staff and line supervisors concerning the content and objectives of available courses?

Is the supervisor usually provided with enough information to enable him to make the best choices among courses and among potential trainees?

If a supervisor is unable to document specific training needs, or to specify ways in which he expects employees to apply the proposed training, on what basis does he select trainees?

Is too heavy reliance placed upon the "quota" method of assignment? Can methods of selecting participants be improved?

Is the mere hope that an employee will be "helped" by a course, about which the supervisor knows little more than its title, enough justification for the cost of the training?

Do supervisors sufficiently discuss the proposed training with their employees?

Is the awareness of the various responsibilities for management development, held and/or shared in each organization, as clear as it might be?

Would the use of this kind of evaluation procedure on a systematic and continuing basis result in a "tightening up" of the training effort all along the line? Would such an outcome be desirable?

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LIST OF EXHIBITS

A PATH TO MANAGEMENT DEVELOPMENT AND TO THE MEASUREMENT OF ITS GROWTH[1]

I. Introduction

There is no denying the fact that training, particularly management training, is most difficult to appraise. Tangible effects directly attributable to such training are quite elusive, and they may occur at a time relatively remote from the course of instruction.

But lack of reasonably objective evidence makes those of us who sponsor and support management training vulnerable to our critics, who like to see evidence in physical or fiscal terms. Also, among those responsible for training, the deficiency of solid data makes some unduly susceptible to enthusiasm, while others hesitate to launch or subscribe to potentially good programs for fear that they might be unable to justify their judgment adequately.

The measure of effective training is change--change in performance that contributes to more effective mission accomplishment for the organization sponsoring the training. First and foremost, of course, we record changes in the man. But this is not enough, if we are to appraise the success of the training effort in terms of the total outcome. In our intense concentration upon "employee development" we often lose sight of the fact that employee development is an abstraction unless it is carefully and systematically integrated with the overall requirements of "management development." Hence, the effects that we look for should be reflected not only in changes in the man, but also in his supervisor, in higher management, and in the total work situation. The training of managers is but one phase of management development.

Are the supervisor and the management ready for the "changed man?" This question is not often asked prior to assigning an individual to training. It may seem like a silly question, because it is "self-evident" that an employee would not be sent to a course unless it was expected that he would learn something of benefit to the organization. However, some interesting research has disclosed that a man may not be able to use the knowledge gained because it involves changes in the man or in the situation that his associates are not used to, and deliberately or unwittingly are unable to accept. In some cases it has even been shown that the man is more successful in applying what he has learned if, after training, he goes to a different shop or office than the one he started out from. In

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[1]This report describes the first phase of a research project undertaken at the request of the Employee Development Division of the Office of Personnel.

the new place, the established conceptions as to how Joe is suppose to act and how he is to function are not present to hobble him.

It holds from this point of view that benefits from training are a function not only of the nature and degree of participation and experience of the employee-trainee, but also of the role played by supervisors and managers, as well as the interaction among all parties involved in planning for training and for its application.

This was the orientation with which we approached the problem of developing a prototype system for more effectively managing and evaluating managerial training. And from this orientation derived the statements of specific objectives of this research effort (an action research program part), and of the outcomes of training expected to serve as a basis for judging the degree of its success.

II. What We Looked For

General Requirements

Five general rules guided the present effort. These rules are best exemplified by questions which serve to define the requirements that the evaluation must satisfy.

1. What specific things is the trainee expected to do, or to do differently as a result of this training experience? The effectiveness of any training program can only be assessed in terms of the specific objectives of that program. Furthermore, statements of objectives must always point toward observable behaviors or behavior changes, if evaluation is to be possible.

2. How did the individual act before he was trained? How did he act after training? Since the effects of training appear as changes in behavior, it is necessary to have a "bench mark" to know where we started from.

3. Are the long-term effects the same as the more immediate changes in behavior? Often the two pictures will lead to quite different conclusions.

4. What, precisely, do we wish to evaluate--the content of the program, the method of teaching it, the ability of the instructors, or what? For present purposes it seemed most desirable to appraise the combined impact of all such factors, rather than try to identify the specific effects of each separately.

5. What use is to be made of the evaluation process? A procedure like the one to be described has many possible applications. It can provide an objective appraisal of the effectiveness of a particular course. Used systematically and on a continuing basis, it can be a means of tracing changes in the effectiveness of the training program over a period of time. By pinpointing specific weaknesses either in a training program or in its administration, it can lead eventually to better results from the training effort. The understanding that a follow-up is expected to be a regular part of the training process should stimulate participants and their supervisors to think more carefully about any program that is under consideration, and more consistently about training needs and employee development as a continuing responsibility. More discriminating selections both of courses and participants would represent a substantial gain in itself.

Specific Requirements

What are the desirable features of a sound training program, the things to look for in planning an evaluation? The following list of specifics is not necessarily exhaustive; however, it covers the main points which determined our approach to the task:

1. Both participants and supervisors should display some advance knowledge of the specific objectives of the training. This should be combined with evidence of

2. Knowledge of the employee's individual training needs, and

3. Perception of the role of this particular training in relation to his career development. At the same time,

4. Training should be integrated with operations--supervisors and participants alike should be able to indicate definite ways in which the employee is expected to use the training in his work. This implies

5. Communication between supervisor and employee, indicating that both are involved in planning the training effort. It also calls for

6. Adequate feedback to the supervisor, as well as to agency and departmental training staffs.

III. WHAT WE DID

An essential requirement of the prototype was that it must be applicable to many different training programs. This requirement obviously eliminates the possibility of laying down any single set of performance criteria against which all programs can be appraised. Actually, this is not a serious handicap in view of what we were looking for. The characteristics of a good program, as just outlined are common to all training, as are the requirements of feedback to supervisors and management. At the same time we may assume that both employee and supervisor can recognize effective and ineffective job performance, that they can translate the latter into expressions of training need and, finally, that they can recognize changes in performance when or if they occur.

To try out the technique, a five-day course in "Management Problem Analysis and Decision-Making" was selected.[2] This course is offered on a contract basis to government agencies and industrial firms by Kepner, Tregoe and Associates, Inc., of Princeton, New Jersey. During 1962 a number of sessions were held for USDA employees in GS grades 12 to 15. Conducted as a workshop and seminar, the course teaches specific concepts and methods which appear to be directly applicable in the trainee's daily work.

Two sets of two questionnaires each were constructed (Appendix A). One set was for trainees; the other for their supervisors. Each set included one questionnaire to be administered prior to training; and another, immediately after training. A third pair of questionnaires will be used six months or more following completion of the training. This final follow-up will be described in a later report.

"Before" and "After" questionnaires were given to all participants in five separate sessions of the Kepner-Tregoe course held between October 15 and December 14, 1962. The total group consisted of 54 individuals, of whom 53 returned the information requested. Exhibits 1 and 2 show the distributions of these participants by USDA agencies and by grade levels, respectively.

Pre-training questionnaires were mailed to the supervisors of all participants. Post-training questionnaires were sent to supervisors of the 44 participants in the last four sessions of the course--the first session was not represented because this questionnaire was not developed in time. A return of approximately 75% was obtained in both cases.

The responses to each question were sorted into categories according to the level of quality of the content. No more than three categories were

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[2]See Kepner, Charles H. and Tregoe, Benjamin B., Developing decision makers, Harvard Business Review, 1960, 38, 115-124, for a brief account of the course.

used in any case. Each category was scored 2, 1, or 0; the higher number always indicating the "better" or preferred answer, as will be illustrated shortly. When the question was of the "yes-no" type, only two were needed.

Exhibit 1

Distribution of Participants by USDA Agencies

Agency	Number of Participants
Forest Service	36
Agricultural Marketing Service	5
Agricultural Stabilization and Conservation Service	5
Agricultural Research Service	4
Farmer Cooperative Service	1
National Agricultural Library	1
Soil Conservation Service	1
Total	53

The categories used in classifying the answers to each question were determined primarily by content analysis. It was relatively easy in this way to group a given set of answers under two or three broad themes which were relevant to the objectives of the study. The classification schemes thus developed were tested for objectivity by checking the agreement between sorters who worked independently. When members of the Personnel Research Staff sorted random samples of answers in this way, agreement ranged between 90% and 100% from one question to another.

Exhibit 2

Distribution of Participants by Grade Level

GS Level	Number of Participants
15	1
14	27
13	16
12	9
Total	53

IV. What We Found

Pre-Training

The pre-training questionnaires for both participants and supervisors contain seven main items, plus an eighth which invites "other comments." Since the two sets of questions are generally parallel, content analyses yield the same categories for both sets. These categories will now be presented for each question in turn, together with a summary of their frequency of occurrence among participants and supervisors.

Question Pre-1: WHAT DO YOU THINK ARE THE SPECIFIC OBJECTIVES OF THE COURSE?

Level 2 - Responses containing explicit reference to the participant in terms of applying the training in his present or future work, or improvin his value to the organization.

"To increase my ability and efficiency as an administrator by traini in methods of problem solving and decision-making."

"To give this participant knowledge which, if applied, will enable to make a greater percentage of right decisions, thus improving his performance and increasing his value to his employers."

Level 1 - General statement without explicit reference to participant's present work of future value to the organization.

"Help managers do a better job of solving problems and making decisi

"To improve the skill of analysing problems and making decisions."

Level 0 - General statement without explicit reference to either proble analysis or decision-making.

"The course will present a systematic method of reasoning."

"To assist participants in understanding the elements they use in me ing everyday work situations."

Exhibit 3

Percentage Distributions of Responses by Participants and Supervisors to Question Pre-1

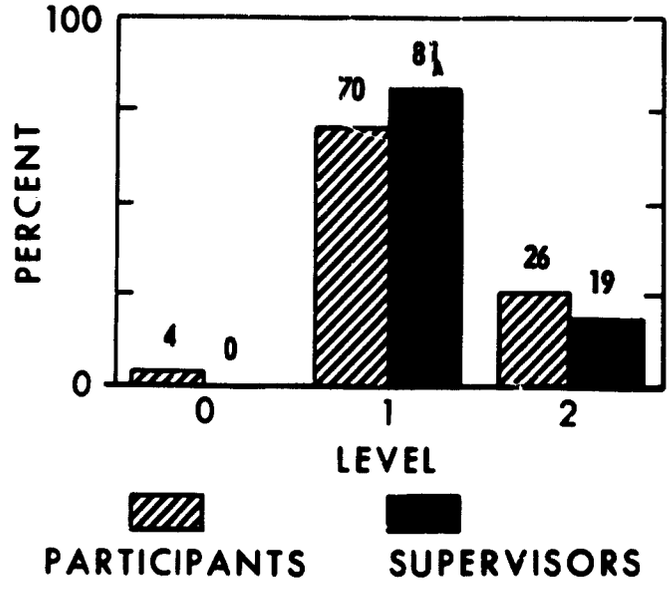


Exhibit 3 shows the percentages of participants and of supervisors whose answers to Question Pre-1 fell in each of the three categories.

The two groups were much alike in their understanding of the objectives of this particular course. The number who had no idea of the objectives was negligible. Most had a more or less clearly expressed idea in their answers (Level 1), but only 19% of the supervisors and 26% of the participants explicitly identified these objectives with the participant's actual work or his value as an employee. Others, no doubt, took this identification for granted; nevertheless it would have been suggestive of more careful thought and planning if they had expressed the idea in so many words.

Question Pre-2: HOW DOES THIS SEEM TO FIT INTO YOUR OWN CAREER PLANS? (Participants)

HOW DOES THIS FIT INTO YOUR AGENCY TRAINING AND DEVELO MENT PROGRAM FOR THIS PARTICIPANT? (Supervisors)

Level 2 - Response contains some allusion to long-range plans, e.g., continuing in present career, changing career field, or advancing within career. (Participants)

Response contains explicit allusion to potential of partici either in his present position or in future assignments. (Supervisors)

"In my position the training should help toward better redeeming my responsibilities as a manager, thereby enhancing opportunity for continuing up the career ladder."

"This participant apparently has a high potential as a research administrator. His ability will be needed in expanding USDA program. This training was assigned to increase his ability to handle his present and future assignments."

Level 1 - Response refers only to immediate demands of present job. (Participants)

Response indicates that course is considered part of agency's regular training program, but contains no specific reference to participant's potential or his career plans. (Supervisors)

"I am a branch chief with nation-wide programs calling for frequent decisions. I expect this course to be useful to me in running these programs."

"Our Division has a formalized training program which calls for this employee to take courses which will provide across the board management training. This particular course will fill a part of the requirements of this program."

Level 0 - No specific tie-in either with present work or with future plans. (Participants)

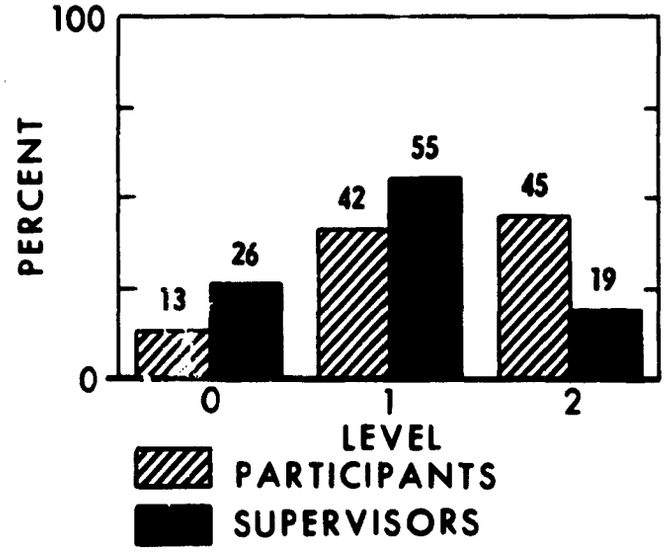
General statement as to effectiveness of and need for such training, but no specific description of its role in participant's career development. (Supervisors)

"Fits in well."

"A supervisor's deputy should analyze problems and make decisions. Ability to do so is essential to the job."

Exhibit 4

Percentage Distributions of Responses by Participants and Supervisors to Question Pre-2



The percentage distributions of answers to Question Pre-2 are shown in Exhibit 4.

It is interesting that 45% of the participants, but only 19% of the supervisors responded at Level 2. This might suggest that, as a group, employees have a clearer picture of their career plans and of the role of this training in relation to these career plans than do their supervisors. Supervisors as a group seem to have had a tendency to think of the course more in terms of formally prescribed training programs than in terms of individual career plans (55% of answers scored at Level 1). The apparent difference, however, may be an artifact, since the supervisors' question is not explicitly career-oriented. In any event, it may be disconcerting to note that 13% of the participants and 26% of the supervisors gave answers that reflected no awareness of career plans or career development. These differences between supervisors and participants are highly significant statistically. That is, they are too large to be attributed to chance.[3]

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[3]A two-tailed sign test was significant at the .04% level of confidence.

Question Pre-3: ON THE BASIS OF INFORMATION AVAILABLE TO YOU NOW, IN WHAT PARTICULAR WAYS DO YOU EXPECT/EXPECT THIS EMPLOYEE TO APPLY THIS TRAINING IN YOUR/HIS FUTURE WORK? GIVE EXAMPLES.

Level 2 - Response mentions specific task(s) or problem(s).

"I expect the employee to use the material to determine what is the cheapest and most effective technique to use in controlling a speci fic fire."

"Help decide between (a) establishment of a study to limit of preser capabilities or work to get support of more adequate study; (b) set up program of research in our own organization or contract with another agency."

Level 1 - Reference to general task or problem area, but without specifi examples.

"In developing regulations and instructions for new programs for which I have been given responsibility; in analyzing questions and problems presented by field offices with respect to these new programs and also programs which are my primary responsibility."

"This employee is in effect our Public Relations expert. We look to him for guidance as to how our agency can best carry out its program with public acceptance and support. This involves careful analysis of many factors, often not immediately apparent as important--how this group or that group will react and why; or can management attain the same objectives but in a way that is more acceptable to the affected public?"

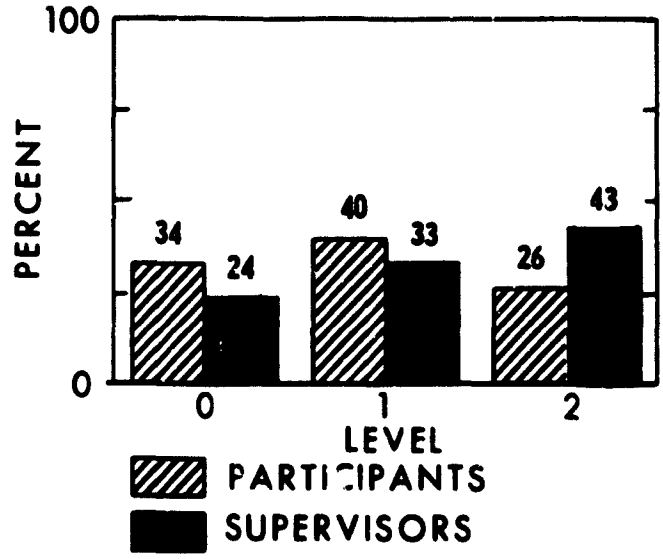
Level 0 - General statements without reference to any actual task or problem area.

"Making decisions is part of the daily job. Training in good decision-making will be used everyday."

"This employee will be faced with problems national in scope and extending across all commodity lines on a day to day basis. If it doesn't help him it is no good or mislabeled."

Exhibit 5

Percentage Distributions of Responses by Participants and Supervisors to Question Pre-3



Although Exhibit 5 shows some apparent differences between supervisors and participants in their responses to Question Pre-3, these differences are not statistically significant. The most that we can say here, therefore, is that while fairly sizable numbers of both participants (26%) and supervisors (43%) were able to mention specific problems which they hoped would be handled more effectively after completion of the course (Level 2), considerable numbers--34% and 24%--were unable to point to any specific problem or any problem area to which they thought the training might be applicable. Apparently, they hoped that the participant might benefit from the course in some way.

Question Pre-4: HAVE YOU DISCUSSED POINTS 1, 2, AND 3 WITH YOUR SUPERVISOR/THIS EMPLOYEE? IF YES, DO YOU FEEL THAT HE SHARES THE SAME EXPECTATIONS AS YOU DO? IF NOT, HOW DO YOUR EXPECTATIONS DIFFER AS YOU SEE IT?

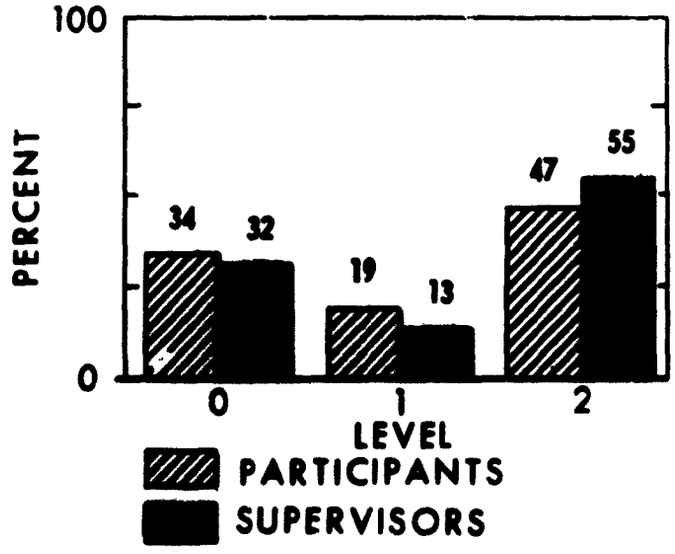
Level 2 - "Yes" to both questions.

Level 1 - "No" to first question; "Yes" to second.

Level 0 - "No" to first question, no answer or "don't know" to second.

Exhibit 6

Percentage Distributions of Responses by Participants and Supervisors to Question Pre-4



As might be expected, Exhibit 6 shows close agreement between participants and supervisors. Practically no one on either side of the fence reported feeling that his expectations were not shared. Perhaps, the most noteworthy finding brought out by this question is that in approximately half the cases, before the training, no discussion took place between supervisor and participant (only 47% of participants and 55% of supervisors gave Level 2 responses).

Question Pre-5: LOOKING BACK OVER YOUR/HIS WORK DURING THE PAST SIX MONTHS OR SO, HAS ANYTHING HAPPENED TO BRING HOME TO YOU THE NEED FOR THIS KIND OF TRAINING? GIVE ACTUAL EXAMPLES.

Level 2 - Response contains example(s) with some specification of problem(s).

"Difficulty in hiring key men in one discipline forced us into contract with a university. Had I been willing and able to read handwriting on wall sooner, we could have made a better 'marriage' and gotten work underway sooner."

"He sent a subordinate on a mission, the results of which were not thought through, and the mission had to be called off. This could have been avoided by thorough consideration of the consequences."

Level 1 - Task or problem area indicated, but specific example(s) not given.

"For almost a year I have been evaluating the magnitude, cost and direction being taken in service-wide programs. To prescribe policy and procedure is the next step, then evaluate progress."

"The problems of federal land use and administration with which this office deals, are becoming increasingly complicated. Values are continually enhanced, competition for lands more intense. This brings to the forefront the need for increasing technical competency and accurate thinking on specific problems."

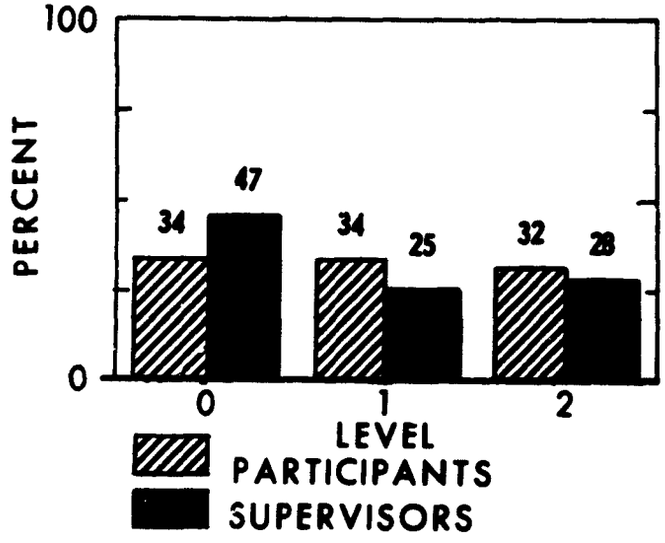
Level 0 - General answer--no specific task or problem area indicated.

"Nothing specific. In general, the need to keep ahead of a rapidly increasing activity with many growing problems."

"Haven't been associated long enough to know his need for this kind of training--other than I know it will prove helpful."

Exhibit 7

Percentage Distributions of Responses by Participants and Supervisors to Question Pre-5



As with Questions 1, 3, and 4, supervisors and participants did not differ significantly in the distributions of their replies to Question Pre-5. Exhibit 7 shows that approximately 30% of both groups cited specific incidents of job performance that pointed up a need for training in problem analysis and decision-making. Another 25% to 34% were aware of general task areas in which this need appeared. Once again, however, a large proportion--34% of the participants and 47% of the supervisors--failed to present any specific evidence of training needs.

COMPARISON OF QUESTIONS PRE-3 AND PRE-5

Since Questions Pre-3 and Pre-5 are somewhat related, it is informative to compare the distributions of responses. The participants were quite consistent, as Exhibit 8 shows. The supervisors, on the other hand, showed a higher proportion of Level 2 answers on Question Pre-3, and a higher proportion of zero answers on Question Pre-5. These differences were significant statistically.[4] This would seem to indicate that supervisors generally are more ready to point to job areas where they hope that the training will be applied than to document specific needs for the training.

Exhibit 8

Percentage Distribution of Responses on Questions Pre-3 and 5

Pre-Question	Participants			Supervisors		
	0	1	2	0	1	2
3	34	40	26	24	33	43
5	34	34	32	47	25	28

[4] A two-tailed sign test was significant at the 3% level of confidence.

Question Pre-6: IS THERE ANY OTHER ADVANCE INFORMATION THAT YOU THINK SHOULD HAVE BEEN PROVIDED ABOUT THE COURSE?

Level 1 - Any answer that indicates no wish for additional information.

Level 0 - Any answer that indicates need for further information.

Seventy-three percent of supervisors and 62% of participants considered the advance information adequate; 27% and 38%, respectively, felt that it was insufficient. In this connection it might be pointed out that there is more advance information available concerning the Kepner-Tregoe course than there is for many training programs in which government agencies participate. Evidently, then, there must be some breakdowns in communication along the line. This is best illustrated by quoting a few answers to Question Pre-6.

Participants: "I would like to have had clear understanding that the course will benefit staff people. Decision-making can be construed as applying primarily or even exclusively to line administrators."

"I really received no advance information that I can recall. Should have gotten summary of previous trainees' impressions plus more on actual content of course. Chapter I of course, sent to me in advance, gave impression course might be too 'business oriented' for my needs, and I almost withdrew."

"Course outlines explained by training officers periodically (to group) would help one select training opportunities by priority better. To change mental gears quickly when a bulletin comes by is fraught with error, disinterest or misunderstanding."

Supervisors: "I believe it would be helpful to give a more detailed outline of what is included in the course."

"Cannot say, since I have not seen any 'advance information.' I knew of the course by hearsay."

"I have never been provided anything in the way of advance information on what the course is other than a 'Problem-Solving and Decision-Making Course.' To make a full response to this type of questionnaire, should know more about the course."

"What is meant by 'other' advance information? I don't know what was provided."

"I would have appreciated information on the objectives of the course, its content, how it was to be conducted, and the qualifications of the instructors. Had I known all this, I might not have recommended this employee take it."

Question Pre-7: WHO PARTICIPATED IN DECIDING THAT YOU/THIS EMPLOYEE WERE/WAS TO ATTEND?

Level 2 - Answers that explicitly mention the employee as participati in the decision.

Level 1 - Answers which indicate definite knowledge of participation others than employee, but do not explicitly mention the employee.

Level 0 - Any answer which indicates mere supposition, lack of knowl on this point, or no participation by others.

Exhibit 9

Percentage Distributions of Responses by Participants and Supervisors to Question Pre-7

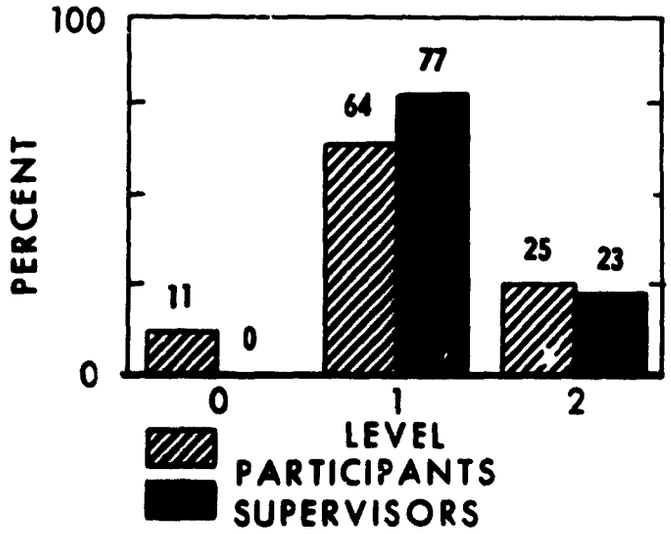


Exhibit 9 shows very close agreement between supervisors and par cipants. Eleven percent of the participants were unable to say who h taken part in the decision that they should receive training. All of these individuals, in answer to Pre-Question 4, said that they had no discussed the course with their supervisors.

The fact that the participant himself was not explicitly mention in answer to Question Pre-7 does not necessarily mean that he did not take part in the decision concerning his taking the course. In fact,

five individuals who said that they had participated in the decision were not mentioned by their supervisors. Two more were mentioned by their supervisors but not by themselves.

Question Pre-8: OTHER COMMENTS?

Level 1 - If any comments are given.

Level 0 - If no comments are given.

Thirty-eight percent of the participants and 25% of the supervisors offered further comments. No single theme stood out sharply in the remarks of either group. Participants expressed the hope that the course would prove profitable; several enlarged upon benefits that they hoped to gain from it. One or two supervisors expressed similar ideas; others complained that the questionnaire had not reached them earlier.

The results obtained from the two pre-training questionnaires have implications which themselves are best stated as questions. Thus, we may ask:

1. Is there sufficient communication between training staff and line supervisors concerning the content and objectives of available courses? Is the supervisor usually provided with enough information to enable him to make the best choices among courses and among potential trainees?

2. If a supervisor is unable to document specific training needs or to specify ways in which he expects his employees to apply the proposed training, on what basis does he select trainees? Is too heavy reliance placed upon the "quota" method of assignment? Can some better methods of selecting participants be found? Is the mere hope that an employee will be "helped" by a course, about which the supervisor knows little more than its title, sufficient justification for the cost of the training?

3. Is the employee himself generally allowed a voice in the selection of training? Do supervisors sufficiently discuss the proposed training with their employees?

Post-Training

The post-training questionnaire for supervisors contains three questions including "other comments." The participant's questionnaire contains five, two of which have two parts each, making seven questions in all. In the following presentation, results for both supervisors and participants will be discussed together for three of the questions. The remaining ones apply to participants alone.

Question Post-1: IN WHAT WAYS, IF ANY, HAVE YOUR IDEAS CHANGED AS TO THE OBJECTIVES OF THE COURSE? (Supervisors and Participants)

Level 2 - Responses enumerating specific instance(s) of new or enlarged ideas of objectives.

"My ideas have enlarged rather than changed. In addition to the four objectives I gave before, I should now add: (1) to learn how to assign priorities to problems awaiting solution; (2) to know how to establish controls in order that the decision may be carried out in the proper manner; (3) to be able to develop alternatives as an adjunct to decision-making."

"Yes. I originally thought of the course in terms of decision-making only. Now I consider that the objectives are: (1) to consciously and systematically analyze each problem situation; (2) to assess causes of problems and systematically arrive at decisions."

Level 1 - Statement deals in generalities: Ideas have changed, but respondent does not specify particular objectives concerning which his thinking has undergone change.

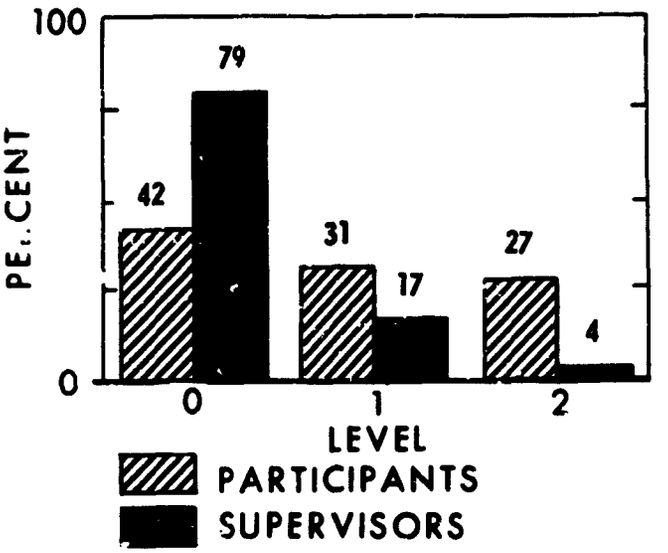
"I did not have any specific ideas as to the objectives of the course before attending it. I now understand the objectives and consider them worthy and attainable, at least in part. The course was more concrete and applicable, with less pure theory than I would have expected."

"I believe that the rules and principles taught in this course are not as specific as I had expected; that is, the course may improve abilities along these lines, but will not replace ability."

Level 0 - Responses indicating that ideas have not changed.

Exhibit 10

Percentage Distributions of Responses by Participants and Supervisors to Question Post-1



The responses of the two groups are compared in Exhibit 10. Of the supervisors, 21% reported changes in their ideas as to objectives of the course (Levels 1 and 2 combined), whereas 58% of the participants reported change. This is to be expected since the participants were the ones who had actually been exposed to the training. If a supervisor had not discussed the course with his employee since the latter's return, he naturally would have had no opportunity to change his ideas.

On the other hand, some individuals--both participants and supervisors--who reported "no change," explained that they had had a reasonably clear idea of the objectives to begin with. A few supervisors had gained their ideas from first-hand experience, having previously taken the course themselves.

Question Post-2a: GIVE EXAMPLES OF SITUATIONS IN YOUR OWN WORK IN WHICH THE CONCEPTS AND METHODS TAUGHT IN THIS COURSE WOULD BE APPLICABLE. (Participants only)

Level 2 - Response mentions specific task(s) or problem(s).

"Carrying out instructions of superiors when (1) superior gives no instructions as to method of operation; (2) more information is needed in order to make plans."

"Getting more out of meetings: How to ask good questions to obtain information needed."

Level 1 - Reference to general task or problem area, but without specific examples.

"I believe the concepts and principles taught in this course could be used effectively in analyzing policy change proposals and subsequent directive issuances."

"I feel it is an excellent approach to identify problems relating to the use of operating forms."

Level 0 - No situations or problems mentioned.

"In my work in research the concepts and methods are applicable in problem analysis phases and the day-to-day operational aspects."

"The principles involved are associated in just about every move I make in the area of policy making and decisions affecting Federal Government and public interest in our Service programs."

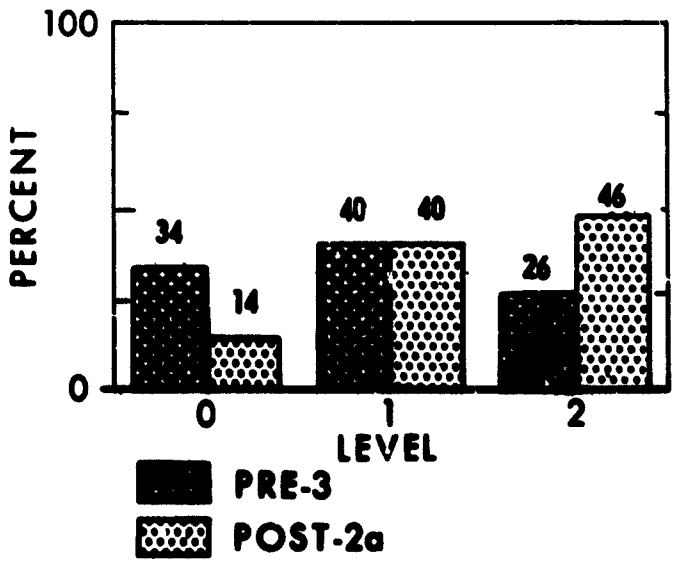
This question is one of several that were introduced following a revision of the post-training questionnaire; consequently, it was not asked of all participants. It is essentially a repetition of pre-training Question 3. Changes in the distribution of responses obtained before and after training, therefore, can tell us something as to the effectiveness of the course, since the ability to recognize possible applications is one criterion of learning in this case.

COMPARISON OF QUESTIONS PRE-3 AND QUESTION POST-2a

Forty-one participants answered both questions. Exhibit 11 shows the percentage distributions of their "before" and "after" responses. The shift is impressive and highly significant statistically.[5] Thus, following training, 46% of the group were able to suggest specific applications in their regular jobs as compared with only 26% before training. Similarly, the proportion of participants who were unable to visualize any useful applications of the course was cut from 34% to 14% following training.

Exhibit 11

Percentage Distributions of Responses by Participants to Questions Pre-3 and Post 2a



[5] A two-tailed sign test was significant at the 0.2% level of confidence.

Question Post-2b: GIVE EXAMPLES OF SITUATIONS IN WHICH THEY WOULD NOT BE APPLICABLE. (Participants only)

Level 1 - Response mentions one or more situations.

Level 0 - Respondent can think of no such situation, or indicates that concepts and methods would be applicable in all situations.

In their responses to this question, 42 participants split almost 50-50. Fifty-two percent were able to indicate situations in which they felt the methods of problem analysis and decision-making taught in this course would not be applicable. The remaining 48% were unable to think of any such situation--largely because, as many respondents explained, they felt that the methods would be applicable, at least to some degree, in any situation. It is interesting to note in passing that, of 22 individuals who mentioned specific situations or types of problem, 9 singled out personnel work as a field in which the Kepner-Tregoe approach would not apply.

Question Post-3a: CAN YOU RECALL ANY SITUATION DURING THE PAST SIX MONTHS OR SO THAT YOU MIGHT HAVE HANDLED DIFFERENTLY IF YOU HAD ALREADY TAKEN THE COURSE? (Participants only)

Level 2 - Responses which mention specific situation(s).

Level 1 - Affirmative answer, but no situation mentioned. Note, however, that situation(s) may be mentioned in reply to Question 3b, in which case a score of 2 is assigned to 3a.

Level 0 - Negative answer.

Fifty-two participants replied to this question, the percentages of Level 2, 1, and 0 responses being 38%, 24%, and 38% respectively. When categories 2 and 1 are combined, it appears that 62% recalled situations which they might have handled differently if they had taken the course sooner.

COMPARISON OF POST-QUESTIONS 2a AND 3a

A comparison of participants' responses to Questions 2a and 3a yields some interesting findings. Levels 1 and 2 have been combined to produce Exhibit 12 as shown below.

Exhibit 12

Distribution of Responses to Questions 2a and 3a

Question 2a	Question 3a: 0	Question 3a: 1-2	
1-2	15(36%)	21(50%)	36
0	3 (7%)	3 (7%)	6
	18	24	42

From Exhibit 12 it appears that, following training:

50% of the participants were able both to specify applications of the training and to cite situations which they would have handled differently;

36% indicated possible applications but were unable to recall any situations that they would have handled differently--at least, not during the past six months;

7% were unable to indicate applications, but could recall situations that they would have handled differently (clearly an inconsistency);

7% were unable to indicate either applications or situations of the type mentioned.

Thus, accepting the questionnaire information at its face value, we find unequivocal evidence of payoff in half the participants. The question is "Is this a satisfactory return on the training investment?" A more complete basis of judgment, of course, must await the returns from the six-month follow-up. It may well be asked, however, whether more discriminating selection and preparation of participants might not improve the picture, even at this stage.

Question Post-3b: IF YES, IN WHAT WAYS DO YOU THINK THE OUTCOME MIGHT HAVE BEEN DIFFERENT? GIVE SPECIFIC EXAMPLES.

Level 2 - Specific example of way(s) in which outcome might have been changed for better.

> "The three alternate methods of reporting performance and claiming reimbursement in the Special X Program might have been reduced to one standard method."
>
> "In the area of procurement, we had a crash program in which we should have anticipated places where it could go wrong and have been ready with back-up alternatives, and have established effective controls."

Level 1 - General statement--specific outcome not detailed.

> "Results may have been approximately the same, but project proposals would have been better prepared and easier to follow up."
>
> "Now that the course is over, I believe I would have felt greater assurance of the 'reliability' of the decisions. The steps leading up to the final decision would have been made more 'consciously'."

Level 0 - No explanation as to how outcome would have been different.

Thirty-two participants responded at either Level 1 or Level 2 on Question Post-3b; thereby indicating some situation or problem area that they might have handled differently after having completed the Kepner-Tregoe course. Of these 32 individuals:

> 50% were able to specify in some detail the kind of improved outcome that might have been expected;
>
> 38% were able to suggest the probable outcome in more general terms;
>
> 12% failed to hazard a guess on this point.

Question Post-4: WHAT PLANS DO YOU HAVE FOR DISCUSSING THIS COURSE WITH YOUR SUPERVISOR? (Participants)

IN WHAT WAYS DO YOU PLAN TO FOLLOW UP ON THIS EMPLOYEE'S USE OF WHAT HE LEARNED IN THE COURSE? (Supervisors' Question 2)

Level 2 - Statement mentions content of discussion as planned or already held, or indicates presentation to staff meeting.

"Have touched on K-T program at PM staff meeting last week. Have spent 45 minutes briefing X, Service Training Officer, on my reactions to program. I expect to visit in detail with my supervisor, Director Y, in next week or two."

"He has been urged to utilize all he learned about decision-making in the K-T Course in dealing with employee problems as well as deciding permissable tolerances for map construction accuracy. We shall require that his recommendations for action on employee promotions, transfers and welfare as well as for mapping tolerances show evidence that he and his staff have arrived at the decision by objective and discerning analysis. He will be required to analyze his decisions for the Division Staff."

Level 1 - General statement with no specific details or examples given.

"I plan to discuss the course with him, perhaps at some length, as office or off-duty time permit."

"I plan to work closely with him in applying these procedures to our management problems whenever such procedures are suitable and applicable."

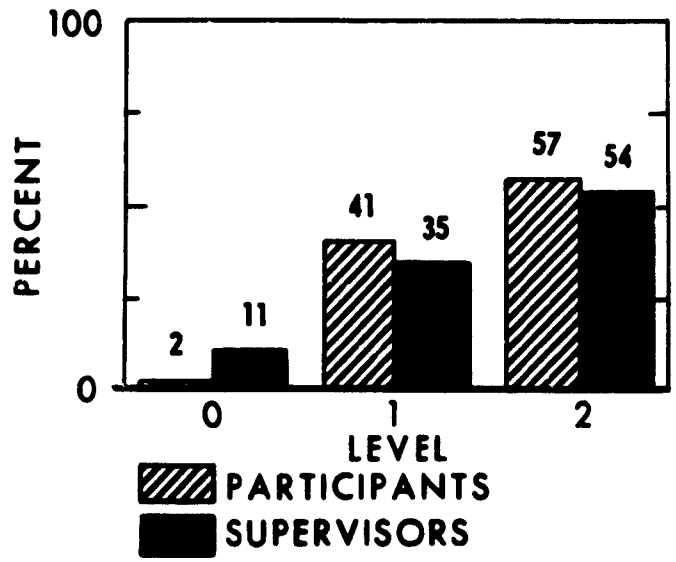
Level 0 - No discussion planned.

"I do not intend to develop a plan for follow-up on the employee. I do intend to observe more closely the quality of the employee's completed staff assignments."

"Will not see him before January 4 and have not discussed course with him since it was completed."

Exhibit 13

Percentage Distributions of Responses by Participants and Supervisors to Questions Post-4 and Post-2



As Exhibit 13 shows, participants and supervisors showed good general agreement in respect to this question, and most of them indicated some plans to follow-up.

Question Post-5: OTHER COMMENTS (Participants and Supervisors)

Level 1 - If any comments are given.

Level 0 - If no comments are given.

Of participants, 69% made comments; of supervisors, 44%. It is perhaps worth noting that both of these percentages are higher than the corresponding figures for the pre-training questionnaires (38% and 25% respectively), although, as before, a smaller proportion of supervisors than of participants had comments to offer.

Eleven supervisors offered comments. Nine of these centered upon a single theme--their subordinates felt the course to be extremely worthwhile. Two respondents had acquired fairly specific ideas as to the value of the training. Others were more vague as, for example, the mystified supervisor who said:

> "I talked very briefly on the telephone with the participant about the course. He said that it was worthwhile, but did not specify in what way it was worthwhile. I have now talked with three men who have had the course and they have all said that it was worthwhile, but did not tell me why. I'm intrigued by this 'secrecy'."

The participants, as might be expected, were much more varied in their comments. Among the points most frequently mentioned were the following:

24% praised their instructor;

21% felt that the course should be given at an earlier stage in the individual's career development;

14% felt that more time should be allotted to the training;

10% agreed that the decision-making part of the course was less effective than the part dealing with problem analysis.

V. Discussion

Results presented in the last chapter provide an incomplete evaluation of the Kepner-Tregoe course. The real test will come with the follow-up--this will give some indication of the extent to which participants have put the concepts and methods to use in their jobs. At the present stage, this much can be said: If a Level 1 or Level 2 answer to both Post-Questions 2a and 3a be accepted as a criterion of success, then exactly half of the 42 participants for whom complete data were available successfully completed the course. Six of the 42 failed to meet this criterion, and 15 fell in the doubtful category (Exhibit 12). Is this a good showing?

On the other hand, our findings up to this point raise some interesting questions regarding the specific requirements of a sound training program as described in Section II of this report.

Consider first a question of communication. Twenty-seven percent of the supervisors and 38% of the participants felt that the advance information provided them concerning the course was insufficient. How, then, could they arrive at a sound decision concerning the objectives of the course or its value? Fortunately, in this case the course happened to be a good one; but will this always be true? Would it not strengthen the overall training effort if course announcements were screened for adequacy of information before they were passed along to agency training officers and supervisors? A brief memorandum calling attention to this point might well be appended to the announcement; on the basis of the adequacy of information the course might be recommended or not recommended for consideration. Would this be desirable?

Another facet of the communication problem appears in the fact that in approximately one-half of the cases no discussion between supervisor and employee occurred prior to the latter's participation in the Kepner-Tregoe course. Of course--as our own data show--prior discussion with one's supervisor is not an essential condition of learning. Nevertheless, some communication between employee and supervisor would seem to be desirable from the standpoint of attention to training needs, a wise selection of training programs, and the integration of training with operations. Is it indicative of cooperative planning by supervisor and employee when a participant writes, "I have no idea what my supervisor's ideas are"?

It was suggested in the second chapter that the systematic use of an evaluation procedure such as this, should lead eventually to better results from the training effort. The evaluation technique described in this report is now being extended to two other training programs: Seminars in Executive Development (SED) and the newly inaugurated Seminar in Middle Management (SIMM), both of which are interagency programs. In the case of SIMM, the proposed evaluation is mentioned in the brochure announcing the program.

Although it is desirable, it is not always necessary to make as detailed an analysis of results as was done in this case. The full-scale treatment of evaluation data was offered here to show how it can be done. But careful examination of the questionnaire responses alone, without formal content analysis or coding, can yield significant information about the effectiveness of the overall training effort. The main aim is to provide for specific plans oriented to individual development needs measured against defined management objectives, to provide for shared understanding of training purposes, to focus on specific behavioral effects of training and upon the use of such performance evidence in evaluating training--in short, to create situational conditions facilitating the effective utilization of training received.

To realize the potential benefits of evaluation, however, it is necessary that the procedure be carried out methodically and on a continuing basis. This means, among other things, insisting upon complete returns from both participants and their supervisors on all questionnaires. Unless this requirement is observed, the entire effort becomes pointless. If management itself treats the evaluation casually, others will do so too. The result can be an altogether unwarranted complacency regarding the effectiveness of the entire training and management development program.

A P P E N D I X A

TRAINING RESEARCH QUESTIONNAIRE

INSTRUCTIONS FOR PARTICIPANTS

A considerable number of people in the Department have taken or soon will participate in the Kepner-Tregoe training program in Management Problem Analysis and Decision-Making. In order to find out what values this training may have for our employees, it is necessary to obtain some information before as well as after you have attended the course.

In answering the accompanying questions, please be as specific as possible. When you have completed the course, you may be asked some more questions about it. We also plan to follow up from time to time in the future to check on long-range benefits from the program.

The most valuable information is your frank reactions based upon your personal expectations, needs, experience and applications. So, work independently--do not consult anyone else in answering this questionnaire. Feel free to react favorably or unfavorably.

Two blank sheets are provided for your responses (feel free to use additional sheets if you need them). Please number your answers to correspond with the questions.

Thank you.

Questions for Participants Prior to Training

1. What do you think are the specific objectives of the course?
2. How does this seem to fit into your own career plans?
3. On the basis of information available to you now, in what particular ways do you expect to apply this training in your future work? Give examples.
4. Have you discussed points 1, 2, and 3 with your supervisor? If Yes, do you feel that he shares the same expectations as you do? If not, how do your expectations and his differ as you see it?
5. Looking back over your work during the past six months or so, has anything happened to bring home to you a need for this kind of training? Give actual examples.
6. Is there any other advance information you think should have been provided about the course?
7. Who participated in deciding that you were to attend?
8. Other comments.

TRAINING RESEARCH QUESTIONNAIRE

INSTRUCTIONS FOR SUPERVISORS

A considerable number of people in the Department have taken or soon will participate in the Kepner-Tregoe training program in Management Problem Analysis and Decision-Making. In order to find out what values this training may have for our employees, it is necessary to obtain some information before as well as after they have attended the course.

Please answer the accompanying questions for each of your employees who is about to take the course. In giving your answers, please be as specific as possible. When your employee(s) have completed the course, you may be asked some more questions. We also plan to follow up from time to time in the future to check on any long-range benefits from the program.

The most valuable information is your frank reactions based upon your personal experience with your employees, including your needs and expectations concerning them. So work independently--do not consult anyone else in answering this questionnaire. Feel free to react favorably or unfavorably.

Two blank sheets are provided for your responses (feel free to use additional sheets if you need them). Please number your answers to correspond with the questions.

Thank you.

Questions for Participants' Supervisors Prior to Training

1. What do you think are the specific objectives of the course?
2. How does this fit into your Agency Training and Development Program for this participant?
3. On the basis of information available to you now, in what particular ways do you expect this employee to apply the training in his future work? Give examples.
4. Have you discussed points 1, 2, and 3 with the employee? If Yes, do you feel that he shares the same expectations as you do? If not, how do your expectations and his differ as you see it?
5. Looking back over his work during the past six months or so, has anything happened to bring home to you his need for this kind of training? Give actual examples.
6. Is there any other advance information you think should have been provided about the course?
7. Who participated in decid ng that this employee was to attend?
8. Other comments.

TRAINING RESEARCH QUESTIONNAIRE

INSTRUCTIONS FOR PARTICIPANTS

Now that you have completed the Kepner-Tregoe course in "Management Problem Analysis and Decision-Making," we would like to have your frank reactions on certain points. As explained in the pre-training questionnaire which you filled out earlier, we also plan to follow up in the future in order to check on long-term effects of the program.

Feel free to react favorably or unfavorably or to agree or disagree with anyone else's point of view. What we want are <u>your</u> reactions, based upon your own personal experience. In answering these questions, please be as specific as possible.

As before, two blank sheets are provided for your responses (do not hesitate to use additional sheets if you need them). Please number your answers to correspond with the questions.

Thank you again.

Questions for Participants after Training

1. In what ways, if any, have your ideas changed as to the objectives of the course?
2. a. Give examples of situations in your own work in which the concepts and methods taught in this course would be applicable.
   b. Give examples of situations in which they would not be applicable.
3. a. Can you recall any situations during the past six months or so that you might have handled differently if you had already taken the course?
   b. If yes, in what ways do you think that the outcome might have been different? Give specific examples.
4. What plans do you have for discussing this course with your supervisor?
5. Other comments.

TRAINING RESEARCH QUESTIONNAIRE

INSTRUCTIONS FOR SUPERVISORS

Now that your employee has completed the Kepner-Tregoe course in "Management Problem Analysis and Decision-Making," we would like you to answer two more questions. As explained in the pre-training questionnaire which you filled out, we also plan to follow up in the future in order to check on long-term effects of the program.

Please answer the questions below for each employee who has just finished the course. You probably will want to talk to the employee before you start. However feel free to react favorably or unfavorably or to agree or disagree with anyone else's point of view. What we want are your reactions, based upon your own experience and observations. In giving your answers, please be as specific as possible.

As before, two blank sheets are provided for your responses (do not hesitate to use additional sheets if you need them). Please number your answers to correspond with the questions.

Thank you again.

Questions

1. In what ways, if any, have your ideas changed as to the objectives of the course?
2. In what ways do you plan to follow up on this employee's use of what he learned in the course?
3. Other comments.