

# A Partnership in Evaluation

*a case study  
in evaluation of a managerial  
training program*

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An employee development office of a major American organization sets the scene. The semi-annual course planning session is underway. Everyone's concerned with recent budget cuts and rumors of layoff. Cutbacks in training seem likely; the question looms large: Which training programs will stay, which will go? Arguments surface constantly about the effectiveness of a specific course. Everyone backs his favorite program; the decision making is difficult.

Such a meeting obviously necessitates information on the success of training programs. Besides training cutbacks, other occasions require such information, too. Any efforts to improve training effectiveness demand useful information about who should attend, who should instruct and who should best implement the program. Unfortunately, the need for training program evaluation, becomes apparent *after* the opportunity for it.

## Price for Failure

Much discussion in professional journals has stressed the value of evaluation. But too often, it just fails to happen. The price for such failure is either the confusing course planning session or a cutback in training because it never proved its worth.

To overcome this, the Employee Development Office of NASA - Manned Spacecraft Center and Kepner-Tregoe, Inc., management development firm, undertook a joint evaluation effort covering the results of 16 courses conducted for 300 Manned Spacecraft Managers spanning a five-year period. NASA wanted to know:

1. How effective the management development firm's course proved in meeting the needs of NASA-MS C executives.

2. To what extent this significant investment had paid off in better problem solving and decision making.
3. What levels and types of supervisors would most benefit from the program.

## Better Decisions

This information would enable the Employee Development Office to make better decisions about using the management development firm's course. In addition, this office along with management would be more prepared to discuss training effectiveness.

Several reasons motivated the management development firm's participation in the study. In 1958, Dr. Charles H. Kepner and Dr. Benjamin B. Tregoe developed a managerial training program that presented a series of concepts for logical, systematic problem solving and decision making. Since then almost 200,000 managers had received training directly by the management development firm or by qualified client instructors who taught managers right in their own organizations. Periodically, evaluations had been conducted to test concept validity and training program effectiveness. Program refinements were always being investigated and implemented. Consequently, the management development firm wanted to assess recent program changes and to provide answers to clients for maximizing the value of its course.

## Methodology

Once the objectives for the evaluation became jointly determined, a careful consideration of methodology followed. Control groups, pretests and inferential statistics formally offered an elaborate array of evaluation alternatives. While desirable, these traditional techniques proved impractical here. The participants had *already* been trained. Measuring

change accurately was impossible. The time and expense prohibited extensive testing. Therefore, another strategy was utilized:

1. Self-report questionnaires were designed that emphasized changes in behavior and job performance. Instructions summarized for each participant the management development firm's concepts and prepared him for the evaluation.
2. Multiple criteria were used, rather than depending on a single criterion. Trends reflected throughout the data were more significant than responses to any single question.
3. Statistical analyses were applied extensively to identify different employee background factors that influenced job application of the management development firm's concepts.
4. Rather than risk any sampling error, all course participants were asked to complete the questionnaires.

Specific information needed from the evaluation provided a framework for establishing a list of potential questions. This item pool was studied and the obviously biased questions were dropped. Then, executives of the Manned Spacecraft Center constructed and reviewed a preliminary questionnaire. A pilot test of the results survey was afterwards administered to eight past participants of the management development firm's course.

The final evaluation survey resulted from these discussions and tests: Three pages of survey instructions, an eight-page questionnaire including a background sheet to be completed by the participants, and an optional section for noting particular situations where the management

development firm's concepts had been applied, were sent to each of the 250 former participants who still remained with MSC.

Of the participants, 50 per cent made a satisfactory response to the survey, since to complete the questionnaire took 45 minutes. The management development firm and NASA Manned Spacecraft Center then jointly reviewed interpretations of the evaluation data to verify the conclusions.

### Overview of Results

Two general criteria were chosen to judge the effectiveness of the management development firm's course: (1) perceived value, and (2) extent of application to job situations. Responses on the first assessed the participant's judgment of the effect of his management development firm training on his job effectiveness and efficiency as well as on some particular training objectives. Job application of the management development firm's concepts occurs both in formal, systematic use to resolve a major job concern and/or in conscious, informal utilization of single concepts to improve a routine activity.

The following summarizes the answers to the key questions of the evaluation:

#### 1. How effective was the course?

Eighty-five per cent of the NASA-MSC managers indicated the course proved valuable to them; 50 per cent reported a significant value. The program's particular effectiveness extended into such areas as making and evaluating recommendations, doing thorough analysis, planning and asking better questions. Also, in categories relevant to creativity, communicating with other people, motivation and training, 40 per cent of the managers found the course beneficial. Table 1 lists the frequency of the management development firm concept job application—both formal and informal use of the NASA managers.

The course presents four inter-related processes of problem solving: Situation Appraisal (to determine top priority issues), Problem Analysis (to find the cause of unexpected events), Decision

Table 1.

### NASA-MSC Managers' Reported Application of Management Development Firm Concepts to Job

	Informal but Conscious, Application		Formal Application of Major Job Concerns
Daily Use	15%	Many Times	7%
Weekly Use	45%	Several Times	37%
Monthly Use	19%	Once or Twice	34%
Several Times a Year	11%	None	22%
None	8%		
	100%		100%

Analysis (to determine the best possible action), and Potential Problem Analysis (to assure the success of an activity). The concepts most frequently utilized by Manned Spacecraft managers were Situational Appraisal and Decision Analysis.

### "Barriers" Cited

Asked about difficulties they faced when trying to apply the management development firm concepts on the job, almost 40 per cent of the managers felt that the most frequent barriers were "not enough time" and "other people not familiar with the management development firm concepts." Lack of employee confidence in their ability to apply the concepts was not seen as a frequent obstacle to job use of management development firm techniques.

Each barrier was correlated with the course effectiveness criteria to check if, in fact, the barrier influenced job application. None of the barriers obtained a statistically significant relationship to job application. That is, managers who complained about "not

enough time" still made as much application of concepts to the job as those managers who never mention the "time barrier." Apparently, not enough time and working with other people qualified more as excuses than as impediments.

### 2. What was the return on investment of the program?

Currently, no way exists to precisely measure investment return from a management development program. Approximations, however, may be all that is required. Many management decisions—e.g., personnel, marketing and public relations—do not need finite measurement to be evaluated.

In the case of training, a manager's opinion about his own changed performance and growth is valuable. In this situation the average increase in job performance attributed to the management development firm's course by NASA managers

was 10 per cent; significantly, not one manager reported a negative effect on performance. Table 2 outlines the manager's perception of amount of performance increase in two dimensions: Quality (achieving technically sound results) and efficiency (use of resources).

For comparison purposes, the cost of the management development firm's course - including participant salaries, facility and program expenses - equalled approximately five per cent of a manager's annual salary. Contrasting investment with pay-off yields a more than respectable 200 per cent the first year. And later data suggests continuing behavior change. Besides these perceptions of performance growth, 30 specific situations cited demonstrated the successful application of management development firm concepts to major job situations.

### 3. Which employee got most value from the course?

No single factor emerged clearly differentiating

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Table 2.

NASA-MSC Manager's Perceived Growth in Quality and Performance Efficiency Attributable to the Course

	Quality	Efficiency
Any decrease (1-20%)	0%	0%
No effect	13%	21%
1-5% Increase	11%	13%
6-10% Increase	19%	19%
11-15% Increase	37%	30%
16-20% Increase	4%	5%
Greater than 20% Increase	16%	12%
	100%	100%

employees into high or low course success groups; the program apparently held value for a wide range of employees. Certain environmental factors, such as type and level of job, and degree of boss and group support for using the management development firm did evidence some effect on the application of its techniques to the job. In contrast, age and type of work experience show *no* relationship with any of course effectiveness criteria. The data did suggest however, that more talented employees received greater course benefit.

4. *How is the value of the course maximized?*

The importance of such environmental factors as group support, type of job and type of boss - while not critical to course success at NASA - reflect the recent trend toward viewing management development in the organization context. Having a supportive boss and the type of job that requires real problem solving and decision making can only increase the value of any management development program. Selection criteria for any course should, naturally, relate specifically to a given program's objectives. However, the non-relationship of age or experience at NASA to course success should evaluate such cliches as "an old dog can't learn new tricks" - or "he doesn't have enough experience to profit from that course."

Results from each of the 16 classes provided course administration information. Over the 16 classes, a slight positive trend appeared

between recency of class and reported results; i.e., the learning betrayed a small "decay" effect. Since NASA had not undertaken any formal refresher program, the slight fall off in application over time was hardly surprising.

An additional variable that influenced course success was the location and intensity of the program. The management development firm's program can be presented either as an intensive five-day program with the manager living in a motel devoting full time to the course or as a program where participants meet at a plant facility but, at night, return home. The Manned Spacecraft Center had tried both options; those classes that were taught in an intensive live-in atmosphere achieved approximately 20 per cent better results than the other lower-cost alternative.

#### **Instructor's Role**

Another important finding concerned the instructor's role in course success. The NASA program had used several of the management development firm's instructors. As anticipated, instructors differed somewhat in their effectiveness. Another consistent disclosure was that the second time the same instructor taught at NASA, he improved significantly upon his initial course. Presumably, acquiring greater familiarity with client needs increased the instructor's course success. This evidence supports the current emphasis toward using the management development firm to prepare an internal employee to train a large

number of managers. The NASA experience with the management development firm training suggests a fair degree of payoff from conducting a standard program. That payoff, though, can be extended considerably by making that standard program part of an integrated effort. A sound change strategy built around the social forces of boss and peer interaction, supportive course administration, and the use of a client instructor are all vital to maximizing the payoff of the management development firm's programs.

#### **Reflections and Critique**

Evaluating any training program is, at best, a difficult task. The combined efforts of management development firm and Manned Spacecraft Center successfully obtained a meaningful evaluation of the course's impact on NASA managers over a five-year period. Despite the complexity of such an undertaking, worthwhile results emerge with the investment of manpower, time, and money.

This project taught several lessons about evaluation. The temptation to copy a questionnaire and send it to participants, while strong, can lead to misguided efforts. Carefully thinking through the results desired from the evaluation orients all effort toward meaningful objectives. By focusing on the decisions to be made following the evaluation and the information needed to direct those decisions, evaluation objectives and strategy can be more specific and useful.

#### **Adaptation Essential**

This research utilized one evaluation strategy - a self-report questionnaire after the course -

necessitated by the situation's pragmatic needs. But a wide variety of techniques exist for measuring training effectiveness. Intelligent adaptation of these alternative methodologies is essential. Sometimes control groups with pre- and post-tests are imperative; other occasions exist that permit less rigorous techniques. Evaluation of training need not be postponed because of weaknesses in evaluation methodology.

Naturally, the present evaluation methodology cannot deliver incontestable, finite measurement. Behavioral scientists will argue endlessly over validity, reliability, and experimental error in any evaluation design. But most decisions made about the use and improvement of training require responsible accuracy, not accounting precision. In the final analysis,

some good information proves better than the assumptions made without real data available.

### Professional Relationship

Most important, a crucial factor in evaluation studies of this type, is the existence of a professional relationship between the Employee Development Office and the management development firm. Both share objectives for the training to show positive results. Therefore, an intensive methodology review to avoid bias, along with an honest, critical testing of data and interpretations remains essential. This relationship between the client and the seller of management development programs can then lead to improved and more effective training programs.

Hopefully, the day will come

when the semi-annual course planning sessions will outgrow the acrimonious debates that now so characterize them. Instead, data on training program effectiveness will be objectively assessed. Improvements in a specific course will be discussed intelligently, knowledgeably. The comparative values of different programs can be evaluated in terms of employee and organization development strategies. The discussions may still be heated; after all, resources will always be limited. But the influence of course evaluation information should shed light on what now exists as a murky region - the relationship of management training to improved job performance and organizational success.

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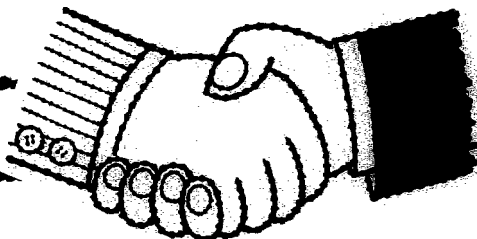
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