

Evaluating The Results Of Training

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Ed. Note: Also see "Evaluating Industrial Trainers," by these same authors, March 1958, *Journal of the ASTD*.

"We do not attempt to evaluate our Human Relations training program because it is next to impossible to do so and probably it is not essential." This startling remark was made by a training director at a recent industrial training conference. Furthermore, it is really interesting that this statement of position went unchallenged by the trainers in the audience, for, to quote the late E. L. Thorndike, "Whatever exists at all, exists in some amount and whatever exists in amount, can be measured."

Do industrial trainers feel that training should be accepted on faith alone since the results cannot readily be ascertained in quantitative terms? Apparently it is true that some industrial trainers believe it unwise to attempt to evaluate the elements of training since so many intangible and variable factors enter into every training situation. While this may be a comfortable point of view, it is also unsound. Developments in methods and techniques and the application of mathematical principles and processes are bringing evaluation to the point where it is becoming a more pre-

cise procedure. Its usefulness to training people is increasing and it is dangerous to ignore it. Therefore, it is a subject that should be of intense concern to clear-thinking training people.

Training in business, industry and government must justify its place. Anyone who has had experience in training sees this need quite clearly. In many instances the recognition of the training department, and the extent to which it is given a more prominent position in the organization, is dependent upon how well the results of such service are demonstrated and explained.

How to demonstrate that training does result in benefits to an organization, and how to show this in terms that are understandable (in the language of a particular business, industry, or organization) is a problem that confronts every trainer. Since not everyone is qualified or prepared to use evaluation processes, we find that comments such as the one quoted above are quite common. Usually, one of two courses of action are taken as the result of failure to under-

stand modern evaluation techniques clearly: (1) an individual may shy away from using these tools of training and rationalize his position by claiming that they were not needed; (2) or he may embrace them eagerly and enthusiastically because he hopes that they may give him the answers to all of his problems. In either case, he may fall far short of his aim of demonstrating that the training programs he prepares and conducts are producing the required results.

In business and industry, every function, every activity, every individual is scrutinized carefully, measured and weighed constantly, and compared with or contrasted to other functions, activities, or individuals. Training, which is a relatively recent addition to staff services, is subjected to much closer and sometimes prejudiced observation in business and industry because, to many persons, it seems to be out of place in such an environment. The principles and techniques of evaluation, if used correctly, can be relied upon to aid the training service to demonstrate its value to any organization in which it is established.

The performance of trainers, the effectiveness of training methods, the results of training programs, the validity of subject-matter content, and the other elements of training can be evaluated. The question of evaluation is no longer an academic one and the pressure of the demand is building up to a point where it can no longer be ignored. Every trainer should, therefore, give serious thought to the matter and prepare himself accordingly.

WHAT IS EVALUATION?

The term "evaluation" appears in the literature on training for almost as long a period as training has been recognized as a necessary or desirable function in business, industry, and government. Almost every issue of the *Journal of the ASTD* carries some reference to this topic. Likewise, many other periodicals and publications quite frequently contain articles and statements about training evaluation.

However, differences of opinion exist about the meaning and purposes of evaluation as well how it should be done. Let us look somewhat closely at the term and the process.

"Appraise," "evaluate," and "measure" are frequently used interchangeably and there is certainly a high degree of similarity of meaning among the three terms. Some hold that the definitions of "appraise" and "evaluate" imply the placing of qualitative value on some object or some person, while the term "measure" expresses quantitative value. Comparison of a previously determined standard or criterion with some object or with some individual is involved whatever the process is called.

Evaluation, therefore, may be said to be a process by which we try to determine the worth of what we do or what develops as the result of some action. Sometimes the worth is expressed in numerical terms, sometimes in less tangible interpretations, and sometimes in more or less vague judgments.

The process of evaluation includes a variety of techniques. These are designed to aid the training person to de-

termine objectively the value of his work or his programs and to state the results in terms that have common meaning. Dr. H. H. Remmers and his associates of the Division of Educational Reference at Purdue University have defined evaluation as an "attempt to apply the scientific approach to the problem of determining the effects of an activity which is called training." The "scientific approach" in this sense implies, in addition to objectivity, the application of step-by-step procedures or techniques to the placing of value on method, content, performance, and other elements of training.

While evaluation and measurement are used somewhat synonymously, we cannot always consider them to be exactly the same. Evaluation usually implies measurement, but measurement does not necessarily imply evaluation. Evaluation is the broader term. Measurement is helpful in dealing with tangible things or situations. We look upon skill and knowledge training as something which can be measured quite accurately while attitude development which is closely connected with emotional reactions of people may require judgment-type evaluations which cannot always be expressed in specific, concrete terms.

We recognize that training is always concerned with bringing about changes in people's behavior. We know also that it is difficult to separate the physical activity of people from their mental and emotional make-up. Therefore, the process of evaluation of training may not be as accurate or objective as is the measurement of the performance of a machine or an automatic production

line, but it is, nevertheless, a means of determining worth with which every training person should be familiar. Effective evaluation requires considerable intelligent and skillful usage as well as sound judgment in interpretation. Interpretation is an essential element of evaluation which cannot be emphasized too strongly. In fact, the ability to explain the data revealed by the evaluative procedure may mean the difference between continuing or discontinuing certain training activities.

WHAT DO WE EVALUATE?

What can and should be evaluated covers a multitude of subjects. The process of evaluation can be applied to every element in the three broad areas of training—skills, knowledge, attitudes.

It has been pointed out that it is possible to determine the value of tangible as well as intangible developments. Therefore, we must avoid over-emphasis in measuring the effectiveness of one area of training programs. For example, some training persons give major attention to human relations training, others concentrate on technical information training, while still others concern themselves with individual management appraisal and development, and so, excessive attention given to one area of training leads to one-sided effects which may produce many problems requiring training activity. The evaluation process, if properly administered, can reveal the need for training in areas not currently served. Recognition of such needs requires alertness of mind, breadth of understanding, and willingness to take action in fields not previously considered.

The areas which can be evaluated may be separated into the following categories:

Purposes and goals

1. Achieving change in point of view
2. Developing skills
3. Disseminating knowledge
4. Creating organizational atmosphere
5. Influencing relationships
6. Developing individuals

Practices, Performance, and Method

1. Trainer performance—ability to gain acceptance, understanding and use of methods, ability to develop content
2. Trainee performance—before and after
3. Validity of method—soundness of instructional procedures
4. Applicability of instructional aids
5. Speed or rate of learning—progress of trainees
6. Behavior of those with whom the trainees come in contact

Programs

1. Applicability of content to a particular need
2. Types of skills required
3. Kinds of knowledge sought

People

1. Aptitudes—learning ability
2. Attitudes—opinions, feelings, prejudices
3. Behavior—reactions to situations

Product

1. Quality—improvement or otherwise
2. Quantity—increase or decrease
3. Time—speed or rate of production
4. Cost—procedure of determining

BASIC PRINCIPLES OF EVALUATION

We have seen that evaluation may be used in a number of different ways, for different purposes, and it may be applied to a variety of training areas.

Following are some of the basic principles that ought to be observed:

A. Programs based upon specific needs can be most easily evaluated.

Training in waste and accident reduction, housekeeping, maintenance practices, manipulative skills, rate of production, quality improvement, cost reduction and the like can be more easily measured than the training which is designed to bring about attitude change.

B. It is difficult to evaluate long-range training programs.

It is wise to separate a program into short units each of which can then be evaluated right after completion.

C. It is desirable to establish control groups to make training evaluation significant.

These establish a basis for comparison. Comparisons often are more easily understood than abstract impressions or determinations.

D. Variables should be isolated and taken into consideration.

Provision should be made for controlling as many factors as possible so that the evaluation may be as accurate as possible. Control of factors in any evaluation situation involves attempting to control all variables except the object of the evaluation so

that the measurement process may be pointed directly at the condition, the goal, or the program which is under scrutiny. Factors such as age, sex, color, aptitude can probably be controlled more readily than many others. It is important, however, to recognize that the results of any training activity can be more easily identified if the evaluation is concentrated on a specific aspect when it is evident that irrelevant elements have been removed or have been taken into account.

E. *Evaluation requires clear-cut operational definition of the conditions, the methods, the programs, and the purposes of a training activity.*

Specificity is important, and generalization or a generalized approach to evaluation makes it very difficult to place any measurement of worth on the program or the results.

F. *Evaluation may be an informal activity.*

It is wrong to assume that the evaluation process must always be formally organized and expressed in mathematical terms. Opinions may be obtained and attitudes may be analyzed through personal contacts and interviews of a casual nature. The theme analysis approach may be used in this instance, whether information is obtained orally or in writing. The positive or negative responsiveness of people may often be determined through observation of their behavior.

G. *Provision should be made for evaluation during the planning stages of training programs.*

A clearer explanation and demonstration of the effectiveness of training can be made if every element in a program is considered in advance. Preparation for evaluation can be much more adequate and pertinent if it is incorporated into the planning of the entire training program.

H. *Evaluation should be continuous, systematic, and comprehensive.*

A training program may be evaluated while it is in operation as well as at its conclusion.

I. *Results of the evaluation should be expressed in terms that are understandable to those involved.*

It is true that the results of measurement are often most accurately expressed in mathematical terms or in the special language of statistics, but the interpretation of the data should be made in the terminology of the organization and the people who are most directly involved. The greatest value is achieved when those who are closely connected with a training program become fully aware of the meaning of the results. This can be done only when they understand.

CONCLUSION

Evaluation is important. Therefore, the procedures, the theory, and the techniques of evaluation must become a part of the training person's stock in trade. His ability to measure and interpret training performance and training results may mean the difference between gaining status for the training function and total elimination of this vital service.