
PROCESS ORIENTED EVALUATION - AN INTEGRATED APPROACH TO EVALUATION OF EXECUTIVE TRAINING

Dr. Ahmad Sardari

Abstract

This Paper attempts to advance the study of training evaluation methodology, particularly concerned with executive development programme. The intent of the paper is to present a specific methodology for evaluating training function by way of conceptualising various training issues in the form of a process model. The traditional evaluation models designed by several researchers are criticised as being content influential and oriented towards individual programmes. While considering training function as a broader system, it is conceived that such system consists of five interdependent and process influential subsystems, namely evaluation system, influencing system, participant system, measurement system and output system. It is argued that any evaluation task that is directed on a training function should make concerted efforts towards evaluation of effectiveness of each individual subsystem and the factors which influences the effectiveness of other subsystems.

Introduction

Possibly one of the most important issues in executive development is the manner in which the skills and abilities of executives is facilitated through training function. The major component in each function is the evaluation of training effectiveness. The purpose of such evaluation is to produce a new level of awareness within a training system, which in turn results in maintaining effectiveness in various training programmes. In this direction it can be conceived that the evaluation of a training programme or programmes is inevitable, however what is more important is that of the consideration of appropriateness of approaches adopted for such efforts. Admittedly it should be noted that an approach which could be very well suitable to one set of training programmes, cannot be possibly considered as universally adoptable to all types of training programmes. This issue becomes more critical particularly in case of a situation wherein the task of an evaluator lies on function as a whole, rather

than specifying the demands towards a particular programme.

This particular problem can very well be highlighted with the fact that most of the evaluation approaches are usually content oriented, rather than consists of any subjective element. In fact their scope and usefulness is restricted to the evaluation of a specific given training unit rather they have practical implications for designing such efforts which are centered on the evaluation of training function as a whole. Concomitant with this is the problem associated with inability of present approaches to provide green signals on the probabilities of failure of various training programmes. This is due to the reason that these approaches lies on survey strategies and least considerate to conceptualisation of various issues that are leading factors to effectiveness of a training programme.

Encompassed with these undermining problems to effective evaluation, it can be argued that a well planned and designed process system based on conceptualisation of various elements which are part of a training function, is desirable. Such a model could help the evaluator to assess the effectiveness of not only the training programmes that were already conducted, but would act as a monitoring systems to condition and enhance the probable effectiveness that is desired to be achieved in a training function. Hence the major stress of the methodology has been addressed on the content and process validity

of process oriented evaluation approach. However before highlighting the components such a model, it is appropriate to discuss the emerging approaches to training evaluation in term of its content and shortcomings.

Emerging approaches to Training evaluation

The content form and the various components of the emerging approaches to training evaluation rightly indicates the observation as, they are more efforted towards identifying the results of individual training programmes, more content influenced as the basis of evaluation is mainly done through feedback approach, and are relative to given goals of a programme rather than based on subjective criterion. It can be indicated that the emerging approaches have very little importance in evaluating the effectiveness of a training function, which usually consists of several individual training programmes. Similarly in the same discouraging manner, the scope of validity of present approaches are also limited in the sense that they do not helpful in predicting the probable effects of various interactive components and the process through which a training programme goes through.

Such presumptions could be possible to make on emerging approaches to training evaluation, as very few conceptual efforts are evident in designing evaluation programme. Whether it is an evaluation on a training function or a specific training programme,

from the point of view of an organization, evaluation needs to be considered as a programme rather than as a mere activity. Concerned with the same issue YORAM ZEIRA (1974) has advocated that effective evaluation of a management training system requires step by step analysis of the programme's process by an interdisciplinary staff. He suggested that every evaluation should be conducted at three stages, namely (1) during the training, (2) at the end of the training, (3) and on the job after the training.

Similarly Sah A. K. (1991) has suggested three stages at which evaluation should be done. These stages includes (1) pretraining evaluation - the content includes terminal review of learners, learning test, and appraisal of training inputs. (2) Evaluation during training - which includes training process and input evaluation, and (3) post training evaluation - consists measurement of - (a) reaction, (b) learning test (c) behavioural change and (d) impact/results.

While working on a major longitudinal study on training evaluation, Virmani B. R. and premila Seth (1985) have developed a model which portrays three stages of evaluation as (1) pretraining evaluation, (2) content and impact evaluation and (3) post evaluation. According to them the post evaluation should be concerned with sub sets of evaluation includes (a) Reaction evaluation (b) training evaluation, (c) job improvement plan, (d) on the job evaluation and (e) follow

up.

However Robin M. Hogarth (1979) has stated that the evaluation process can sub divided into four phase, as (1) structuring the problem, (2) determining the importance of dimensions of evaluation, (3) measuring alternatives on the dimensions, and (4) choice. Similarly Broven Ralph and James D. Somerville (1984) have developed a model consisting of four steps, namely

- (1) establishment of performance standards,
- (2) Actual performance measurement
- (3) comparison of actual performance with established standards and
- (4) evaluation of performance and determination of corrective actions required.

A very comprehensive and content oriented evaluation medel was developed by Deming S. Basil (1979) The model consists of 10 steps to evaluation, which were described as tasks to perform as (1) compute the cost of each training component in each training programme. (2) Assign a priority to each training programme according to its perceived value to the organization. (3) compute potential for saving, (4) Investigate programme with high p. s. factors to determine whether training seems to be having an impact on job performance. (5) Select the programmes to be evaluated first (6) Establish evaluation objective with the evaluators. (7) Estimate the cost of evaluation (8) monitor the evaluation process. (9) Study and discuss the evaluation report (10) Make decisions

based on the finding and recommendations.

In contrast to other researchers, Tracey (1974) has considered evaluation as a part of control by the training manager. He has suggested a seven step control system for training. These steps includes (1) Establishing standards, (2) measuring performance, (3)evaluating performance, (4) evaluating training and development system, (5) budget execution, (6) Review and analysis (6)correcting performance.

In a similar way Udai pareek (1978) has suggested a wider scope for training function evaluation. These areas includes the assessment of (1) pretraining factors (2) training events, (3) Training management, (4) Training process, (5) participant development (6) organization development and (7) post training factors. A four step model was suggested by Krikpatrick (1969). The model envisages that training evaluation should be undertaken on (1) evaluating reaction, (2)evaluating learning, (3) evaluating behaviour, (4) and evaluating results. A simplified framework for evaluation was suggested by Elbree and Howe (1977). The framework considered evaluation being conducted at three stages as (1) focus (2) planning and implementation of a training programme.

The analysis on the content scope and construct validity of the existing evaluation models clearly indicates that very little attention has been drawn on criterion

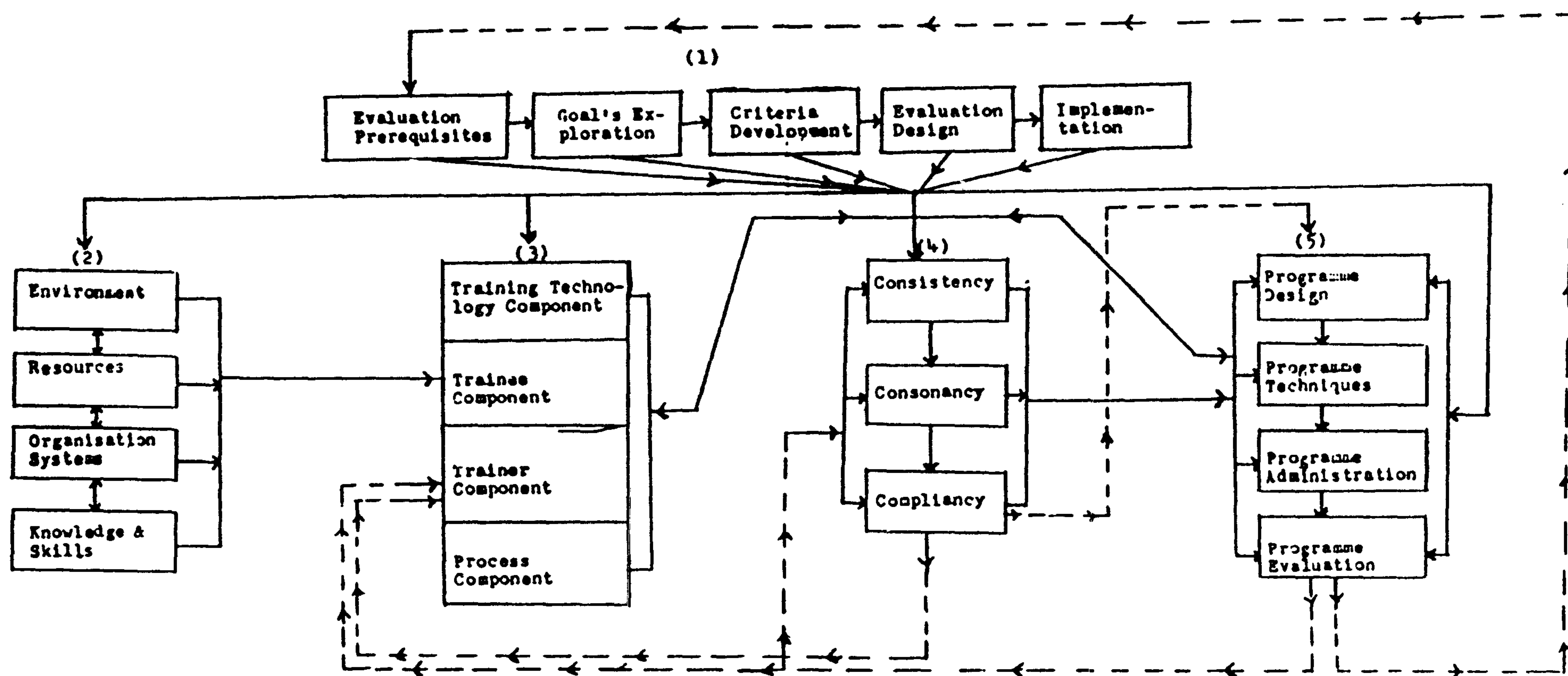
measures and conceptual issues of training programmes. It is further evident that most of these models were not drawn on the basis of standardised research methodologies rather than created specially for the evaluation of training effectiveness. However, Natrajan (1980) has developed various criterion measures for effective evaluation of training programmes.

A methodology for evaluation of training function

Through the critical assesment on the emerging models of evaluation it can be very well clear that most of the research efforts in the field of training evaluation were concentrated on the content scope of evaluation procedure rather than efforded towards the development of conceptual designs. However, it is inevitable for achieving desired effectiveness in training programmes, that various issues associated with a training function needs to be effectively conceptualised and the adopted approach of evaluation should maintain the high level of consistency with the appropriatness of such approaches.

In consistant with this presumption an evaluator can take a cognigant view on the methodological issues which are conceptualised in the form of a model, and presented in Fig. 1. The model, which is the resultant view on the integrated aspects of a training function considers training function as a broader system, which is influenced by

A Systems View on an Integrated Process Model of Executive Training Evaluation



1: Evaluation System

2: Influencing System

3: Participant System

4: Measurement System

5: Output System

several interrelated subsystems. The central focus of the model is the integration of evaluation process as an unavoidable element of a training function. According to this model, a training function may consist of 5 subsystems, such as (1) evaluation system (2) influencing system (3) participant system (4) measurement system, (5) output system. At this outset of the methodology it is conceived that the ultimate effectiveness of training would undoubtedly depend on the individual process and activity effectiveness of each subsystem. And also on the simultaneous interaction, through the degree of appropriateness each system has with each other in the process of a training function.

In any training function, in particular towards its effectiveness, dependence on influencing system is common. This is to say in conceptual terms that the status quo position of every training function is exclusively determined by influencing system, which consists of elements such as environment, resources, organization systems, and knowledge and skills. While environment and organizational systems necessitate a need for undertaking training activities, the resources and knowledge and skills provide required inputs for conducting such activities. Otherwise Without the influence of these elements a training function would not exist in any organization. Other things being normal,

when the evaluator has to make evaluation of a training programme, it is of paramount importance that the elements of the influencing system needs to be assessed in relation with other subsystems with the provided criterion measures.

Participant system constitutes another most distinguishable subsystem of a training function, where in four components, are associated in it. These are (1) training technology components, (2) trainee component, (3) trainer component and (4) process component. These components are interrelated and have certain level of influence on other components of a training system. It can be stated rightly that the relative appropriateness of these components in the process and content of a training programme leads to effectiveness in a training function. Hence it is desirable that the various components of this subsystem should be evaluated as part of a comprehensive evaluation activity.

The other notable subsystem can be that of measurement system, which provides measurement criteria for evaluation of a training function. As stated earlier the effectiveness of a training function ultimately to a larger extent depends on the degree of effectiveness in interaction maintained among various subsystems of a training function. Similarly the level of appropriateness and consistency among various elements in terms of process and content also influences training

effectiveness. In such situations it is desirable to make evaluation from the point of view of criterion measures, as these acts as guiding principle in evaluation efforts. Three sets of criterion measures are proposed in this direction which includes the measurement on level of (1) consistency (2) consonancy and (3) compliancy. It can be suggested that the elements of measurement of evaluation of a training function should take into consideration these criteria as measures, and evaluation designs should be based on these measures.

In the present conceptualisation, the output system has different connotation, and need not be viewed as the results of a training programme. In the context of the methodological considerations, the output system refers to operational process of a training activity. This process which is in the nature of cyclical, consists of activities such as programme design, programme techniques, programme administration and programme evaluation. A presumption can be made so as to the task of evaluation that the process of evaluation should not be restricted to any one subsystem or element of a subsystem. However efforts should be directed to cover wide range of issue in a comprehensive evaluation. With such comprehensive evaluation it could be possible to have greater data and awareness on the effectiveness of not only the training programmes which were conducted, but also such process would be of

greate importance in making efforts to enhance the effectiveness of a training programme which is slated for operationalisation. Further more the process evaluation would also be useful in evaluating a training function, which consists of several sets of individual programmes aimed at different individual with differentiated objectives.

Towards an Integrated Model

The process oriented evaluation approach to training effectiveness measurement envisages that at least five key steps are to be performed before an evaluation is undertaken. These includes:

1) The evaluator must identify the actual users of the evaluation study. The actual users are those who desire to use the results of an evaluation for making decisions or taking coverate set of actions.

2) Alongwith this, it is also desirable that certain effectiveness goals need be identified. The goals must be of desirable in nature and consists of certain positive values.

3) As a next step the specific training programme components to be evaluated need to be identified. The selected programme components should be capable of and held accountable for achieving the desired goals.

4) Similarly a set of criteria are to be subjectively choosen by the users. The criteria should be based on issue which the users will judge the extent to which effectiveness goals are attained as a result of the programme

components being evaluated.

5) And finally a decision must be made to use the scientific method to design and implement measurement procedure that determine the extent to which the effectiveness goals are attained by the selected programme components.

In essence the evaluation of any training programme requires that the evaluators place themselves in a larger training context than the one often implied by the narrow definition of research, which is to measure, analyse and report results of study disigned on the basis of the evaluators own value judgements and not on the basis of any conceptual model or frame work. However, evaluation of a training programme requires a process that responds to the concerns of various components of a training system, makes explicite the multiple and conflicting values underlying the objectives of training and facilitates training among users by having them become a part of the model building and applied research process. For this to achieve it can be suggested that the evaluation activity should be process oriented, and in the form of an applied problem solving process. As this approach attempts to make decision makers goals, criteria, and concerns explicit, it will be possible to develop explicit value judgements on the various process and technical aspects of a training programme, before it is conducted.

The process oriented evaluation approach consists of six phases of activities, which are

often recycle and overlap with each other. The primary objectives of this approach can be that of suggesting a set of task phases and activities that as to guide a evaluator/or research in dealing with matters of values and facts while designing and implementing an evaluation of a training function and (2) maintain a balanced concern for the technical quality and social acceptance of effective definitions, measures and explanations that are developed. The process oriented evaluation approach relies heavily on the evaluation - action research and the activities within each phase of the process consists as below.

Phase 1: Evaluation Prerequisites

At the outset the researcher and the training organization of the study should establish their working contract and clarify their role by answering the following questions.

- 1) What are the reasons for conducting training evaluation study?
- 2) How will the results of the study be used?
- 3) What training components or issues are to be evaluated?
- 4) Who should conduct the evaluation study?
- 5) To what extent is there a commitment to using the methods and knowledge of science to design and conduct the study?

Answers to these questions are crucial for determining whether an evaluation study is

worth while, what the feature of the working relationship between the evaluator and the users will be and how the process and content of the evaluation will be tailored to specific user needs. In varying degrees the decision to undertake a training evaluation represents a significant commitment of resources and human energy on the part of the evaluator and the users involved in the process, and all the employees affected by training. It should also be recognised that the involvement of users in the evaluation process may heighten their expectation that the study itself will increase training effectiveness in terms of the ways they define it. Further more individuals within complex organizations have multiple, conflicting and sometimes dishonest personal motivations as users for an evaluation study.

Phase 2: Goal Exploration

In this phase the evaluator conducts a series of meetings and discussions with users to obtain their perception on effectiveness goals for the training components being evaluated. These effectiveness goals are value judgements or standards for the training function that the trainees have in their conscious or sub conscious mind. Generally these values have two attributes namely, content or what is wanted and intensity or how much it is wanted or desired. An individual values for a training programme ranked or to its intensity would represent him or her goal priorities; and the training effectiveness goal

priorities would be the sum of intensity ratings for each goal.

In essence it can be assumed that the users can and will articulate in an operational form some of their value judgements about effectiveness goals when asked to do so: particularly when users are provided a process to make repeated estimations of their value judgements in a non threatening manner. The goal exploration phase concludes with an evaluation session in which user representatives review the unique sets and priority ranking of effectiveness from each group, confront disagreements and agree to proceed to the next phase with an explicit awareness of the goals on which there is consensus and conflict among users.

Phase 3: Criteria Development

In this phase the evaluators obtain the value judgement of users on the criteria they will use to assess the extent to which each goal priority is attained. Whereas goals are desired end states, criteria are operational dimensions or continually representing the degree to which goals are met. The process of criteria requires making of three normative decisions. (1) Select concrete observable characteristics of dimensions that are to be measured and used as indication of goal attainment (2) specify standards or cut off points on the dimensions, and (3) in the usual case of multiple criteria determine the weight of importance to be assigned to the dimensions

to understand hierarchical relations among the criteria and to develop an aggregate or composite measurers of goal attainment.

The data obtained in the criteria development phase do not automatically become useful for developing operational measures of effectiveness. A necessary intermediate task between the generation of criteria and the development of effectiveness indicators is a content analysis of the qualitative data. In this direction three search and two screening decision rules could guide evaluators in choosing measurable effectiveness criteria.

Search for criteria of each goal priority that are observable over wide variations in the training components being evaluated. Criteria on which there are few or no variations are of limited use for comparative evaluation because they do not discriminate between the training components being evaluated.

2) Search for criteria of each goal priority that seem to capture or explain a large number of related criteria. It is impossible to measure all criteria that may be considered relevant indicators of goal attainment.

3) Search for criteria that are easiest to measure in a reliable and valid way and lowest in measurement cost.

4) Classify criteria in to those that are consider means and ends to training effectiveness, that is determine whether each criteria is a dependent variable in its own right or an independent or moderating variable (a

mean) that is believed to influence some more technical outcomes.

In the consideration of the above issues, it should be noted that if the over all definition of training effectiveness is the degree to which the goals and criteria judged to be ends are attained, a direct assessment of effectiveness is possible by operationalising and measuring only the ends criteria. Although it is tempting to simply measure all key criteria and empirically establish the pattern of means ends relationships among the criteria, it is important to recognise that the classification of criteria as means or ends to, not a methodological, but a value question that requires careful consideration of which goals the evaluator considers ends or outcomes. The classical example is the conflicting empirical on whether - job satisfaction cause performance or the latter causes the former, or whether both are ends in their own right. Ultimately the question must be resolved by what outcomes users want to include as measures of training effectiveness.

Phase 4: Evaluation Design

Once the goals and criteria are developed, the next step involves the development of a set of effectiveness measures. In case of an on going training programme, many of the effectiveness measures that directly reflect criteria may readily be available in existing feedback system. However although feedback reporting is omnipresent in every training

programme, almost every instance of feedback has something wrong with it. A so called objective measure of effectiveness in a feedback system is a subjective measure once removed. Thus a search for effectiveness measures from existing process orientation requires the same amount of careful investigation as would be required to designing and testing a new system for measuring training effectiveness.

Similarly the development of a conceptual model is also important for identifying and distinguishing which factors and which training components influence training effectiveness. The evaluator can identify which training components are held accountable for each effectiveness measure and which subsystem of a training function, as environmental factors are beyond the control of training programmes being evaluated. The latter are attributable to actors and factors external to the training system under evaluation and should be measured but controlled for training effectiveness.

Once this is done the evaluator proceed to develop the operational research design for measuring and explaining training effectiveness. The process involves the technical tasks described in most research methodology tests for developing a good research design, including selection procedures, sample size, measurement and procedures for data collection, analysis and feedback.

Phase 5: Evaluation Implementation

Once the conceptual model, hypothesis and measures have been developed, the process oriented evaluation approach demands a method that the evaluator shift from a development to a systematised mode in phase 5 to measure the variables of interest in a highly consistent and standardised way across all observations. However no set of measurement instruments, no matter how well developed will capture all the unanticipated factors encountered during data collection that are considered relevant to or important extensions of the conceptual model. In addition to this it is essential to establish a standardised set of measurement instruments and data collection procedures, schedules and controls in advance of data collection. Once the data collection system is implemented, the evaluation can deal with the exceptions and have the freedom to pursue and probe new ideas and unanticipated directions encountered during the period of data collection.

Conclusion

The approach, process oriented evaluation described in the preceding sections for conducting an evaluation of training effectiveness may appear to be too structured and is required so much of involvement in each evaluation phase that the process envisages. Admittedly the process does not provide speedy solutions and deviates

considerably from most published studies or conventional notions of what is involved in conducting training function evaluation.

The process can be viewed as a realistic attempt to address 1) the multiplicity of various value judgements held by different participants in a training systems on what the effectiveness goals and criteria of any particular training component should be and 2) the lack of knowledge of the interdependencies within and between hierarchies of goals and components in any training system. The solution proposed by the preceding oriented evaluation approach is to portray evaluation as a participative form of social learning, which incorporates various value judgements of effectiveness and their conceptual models of what causes or produces training effectiveness. Specifically the proposed approach to training function evaluation is believed to facilitate learning, technical quality and use of study results in four important ways.

First, the proposed process model divides the entire evaluation effort into an adoptive but structured set of task stages that are similar to the basic phases of creative decision making or problem solving. The evaluation process begins with extended explorations of value judgements on effectiveness goals and criteria in phases 2 and 3 before jumping to more factual matters of evaluation design, implementation and analysis in phases 4 and 5. In this sense the evaluation process

distinguishes and addresses matters of values and facts regarding training function effectiveness. Of course no one evaluation phase deals solely with matters of values or facts. It is more correct to say that each phase includes varying degrees of factual and value laden tasks.

Second, in this approach evaluation should be viewed as a continuous process of incremental action, review and adaptation over time and not as a discreet, One shot go no/go decision. Emphasis is placed on taking and assessing small, tentative and consecutive steps in evaluation, with each step subject to review, modification and reiteration of the basis of experience and knowledge gained during the evaluation period.

Third the proposed evaluation process emphasising the content of not only one subsystem of a training function, but also necessitates a due consideration of various subsystems in terms of their interrelationships among each other.

Finally the proposed process evaluation approach attempts to address the pluralistic nature of evaluation of training activities. In most training functions there are multiple evaluations and monitoring efforts occurring simultaneously, each with limited scope and content. This implies that at any given point in time no one evaluation has sufficient knowledge and scope to conduct a definitive evaluation of training effectiveness. However coordinated evaluation efforts can be

enhanced over time by involving other evaluation units in formulating flexible working evaluation design and by diffusing findings to other evaluation units.

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