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# EVALUATION OF TRAINING IN ORGANIZATIONS: A PROPOSAL FOR AN INTEGRATED MODEL

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**ABSTRACT**

Purpose – Training is a key strategy for human resources development and in achieving organisational objectives. Organisations and public authorities invest large amounts of resources in training, but rarely have the data to show the results of that investment. Only a few organizations evaluate training in depth due to the difficulty involved and the lack of valid instruments and viable models. The purpose of this paper is to present an evaluation model that has been successfully applied that integrates all training dimensions and effects. The model analyses satisfaction, learning, pedagogical aspects, transfer, impact and profitability of training.

**KEYWORDS** Training and Development, pedagogical System,

## INTRODUCTION

Training and development has positive impact on the individual, the organization and the nation (Smith, 1992). Human resource evaluation is defined as "systematic collection of descriptive and judgmental information necessary to make effective training decisions related to the selection, adoption, value, and modification of various instructional activities" (DeSimone *et al*, 2003). This definition makes several important points:

***First,*** when conducting an evaluation, both descriptive and judgmental information may be collected. And these both are needed in human resource development (HRD) evaluation. Some of the judgments are made by those involved in the program, and others are made by those not involved in the program.

***Second***, evaluation also involves the systematic collection of information according to a predetermined plan or method to ensure that the information is appropriate and useful.

***Finally***, evaluation is conducted to help managers, employees, and HRD professionals make informed decisions about particular programs and methods. For example, if part or a program is ineffective, it may need to be changed or discarded. Or, if a certain program valuable, it may be replicated in other parts of the organization. Evaluation begins with a clear identification of the purpose or results expected from the training programs. By focusing on the purpose and results evaluators are guides to the reasons that the training program has been developed and the changes and improvements in learner performance that should result from training. It would be expected that training programs

are based on important organizational goals and improvement efforts. However, that connection must be directly guiding training efforts if training results are to be linked to organizational measures (Burrow and Berardinelli, 2003).

Evaluation can serve a number of purposes within the organization. According to Philips (1983), evaluation can help to do the following:

- Determine whether a program is accomplishing its objectives.
- Identify the strengths and weaknesses of HRD programs
- Determine the cost-benefit ratio of an HRD program
- Decide who should participate in future HRD programs.
- Identify which participants benefited the most or least from the program
- Reinforce major points to be made to the participants.
- Gather data to assist in marketing future programs.
- Determine if the program was appropriate.
- Establish a database to assist management in making decisions

This paper aims to offer a training evaluation model, thereby helping the training professional to design and implement rigorous and coherent training evaluation processes that enable the entire training function to be optimized.

## THE CONCEPT OF EVALUATION

Training evaluation involves scrutinizing the program both before and after the program is completed. Figure 1 emphasizes that training evaluation be considered by managers and trainers before training has actually occurred. The evaluation process should begin with determining training needs. Needs assessment helps identify what

knowledge, skills, behaviour, or other learned capabilities are needed. Once the learned capabilities are identified, the next step in the process is to identify specific, measurable training objectives to guide the program. The more specific and measurable these objectives are, the easier it is to identify relevant outcomes for the evaluation. Analysis of the work environment to determine transfer of training is also useful for determining how training content will be used on the job. Based on the learning objectives and analysis of transfer of training, outcome measures are designed to assess the extent to which learning and transfer have occurred.

Once the outcomes are identified, the next step is to determine an evaluation strategy. Factors such as expertise, how quickly the information is needed, change potential, and the organizational culture should be considered in choosing a design. Planning and executing the evaluation involves previewing the program (formative evaluation) as well as collecting training outcomes according to the evaluation design. The results of the evaluation are used to modify, market, or gain additional support for the program. Finally is the examination of each aspect of the evaluation process, starting with the development of outcome measures.

**Figure 1.** The Evaluation Process *(according to Grove and Ostroff, 1991)*



## HOW TO PREPARE A PLAN FOR EVALUATING TRAINING
There are several models of training evaluation that organise the process, provide guidelines for the content and outline the phases of its implementation. Some of them are based on contributions from the classic master of evaluation, Donald Kirkpatrick and his model consists of **four levels** of evaluation.

### First Level: Reactions
The first level is the reaction level in which the **reactions** of the trainees are understood to mean the way in which they perceive and subjectively evaluate the relevance and quality of the training. It attempts to answer questions regarding the participants' perceptions - Did they like it? Was the material relevant to their work? This type of evaluation is often called a "smileysheet." According to Kirkpatrick, every program should at least be evaluated at this level to provide for the improvement of a training program. At this level, evaluation measures the satisfaction of the people who followed the training. In conjunction with that, positive reactions are of critical importance in creating sufficient learning motivation.

In this sense, the participants' reactions have important consequences for learning (level two). Although a positive reaction does not guarantee learning, a negative reaction almost certainly reduces its possibility.

### Second Level: Learning
Learning can be described as the extent to which the attitudes of the participants change, their knowledge increases or their skills are broadened as a consequence of the training. This is a second level of evaluation of learning behavior whereby evaluation is intended to measure the progress made in terms of knowledge, skills or attitudes. In other words, evaluation tests the participants to see whether new skills have been acquired. At this point, evaluation can relate to the method used to transfer the knowledge, skills and attitudes. To assess the amount of learning that has occurred due to a training program, level two evaluations often use tests conducted before training (pretest) and after training (post test). Assessing at this level moves the evaluation beyond learner satisfaction and attempts to assess the extent students have advanced in skills, knowledge, or attitude. Measurement at this level is more difficult and

laborious than level one. Methods range from formal to informal testing to team assessment and self-assessment. If possible, participants take the test or assessment before the training (pretest) and after training (post test) to determine the amount of learning that has occurred.

**Third Level: Behavior**

A third evaluation level is that of changes in job **behavior** or performance. This involves studying the change in job behavior which takes place as a result of the training. Evaluating at this level attempts to answer the question - Are the newly acquired skills, knowledge, or attitude being used in the everyday environment of the learner? At this point, evaluation sees whether tasks are performed differently before and after the training. In order for positive reactions and learning effects actually to lead to changed job behavior, the transfer of acquired skills to the work situation must especially be ensured. The quality of this transfer is strongly dependent on the support the participant receives after the training, especially from his immediate supervisor or coach (Kirkpatrick, 1998). From a study by Bergenhenegouwen (1997), which explain the low effectiveness of training courses, are found in this area in which immediate bosses who have more of a discouraging effect, who themselves do not set a satisfactory example or provide insufficient supervision. For many trainers this level represents the truest assessment of a program's effectiveness. However, measuring at this level is difficult as it is often impossible to predict when the change in behavior will occur, and thus requires important decisions in terms of when to evaluate, how often to evaluate, and how to evaluate.

**Fourth Level: Results**

Level four evaluation attempts to assess training in terms of organizational **results**. At this point, evaluation checks how the results are evaluated at the end of the training initiatives. An evaluation of the results therefore measures the progress made at organizational level. Frequently thought of as the bottom line, this level measures the success of the program in terms that managers and executives can understand - increased production, improved quality, decreased costs, reduced frequency of accidents, increased sales, and even higher profits or return on investment (Level 5 -ROI). From a business and organizational perspective, this is the overall reason for a training program, yet level four results are not typically addressed. Determining results in financial terms is difficult to measure, and is hard to link directly with training.

According to Kirkpatrick (1998), the subject of evaluation or the level at which evaluation takes place is dependent on the phase during which the evaluation takes place. In Kirkpatrick's four level model, each successive evaluation level is built on information provided by the lower level. Assessing Training Needs often entails using the four-level model developed by Donald Kirkpatrick (1994). According to this model, evaluation should always begin with level one, and then, as time and budget allows, should move sequentially through levels two, three, and four. Information from each prior level serves as a base for the next level's evaluation. Thus, each successive level represents a more precise measure of the effectiveness of the training program, but at the same time requires a more rigorous and time-consuming analysis.

**Table - 1: Human resource training evaluation models/frameworks (DeSimone *et al*, 2003)**

| Model/ Framework | Training Evaluation Criteria |
|---|---|
| 1. Kirkpatrick (1994) | Four levels: Reaction, Learning, Job Behaviour, and Results |
| 2. CIPP (Galvin, 1993) | Four levels: Context, Input,Process, and Product |
| 3. CIRO (Warr et al., 1970) | Context, Input, Reaction, and Outcome |
| 4. Brinkerhoff (1987) | Six stages: Goal Setting, Program Design, Program Implementation, Immediate Outcomes, Intermediate or Usage Outcomes, and Impacts and Worth |
| 5. Systems approach (Bushnell,1990) | Four sets of activities: Inputs,Process, Outputs, and Outcomes |
| 6. Kraiger, Ford and Salas (1993) | A classification scheme that specifies three categories of learning outcomes (cognitive, skill – based, affective) suggested by the literature and proposes evaluation measures appropriate for each category of outcomes |
| 7. Kaufman and Keller (1994) | Five levels: Enabling and Reaction, Acquisition, Application, Organizational Outputs, and Societal Outcomes |
| 8. Holton (1996) | Identifies five categories of variables and the relationships among them: Secondary Influences, Motivation Elements, Environmental Elements, Outcomes, Ability/Enabling Elements |
| 9. Phillips (1996) | Five levels: Reaction and Planned Action, Learning, Applied Learning on the Job, Business results,Return on Investment |

## LEVELS OF TRAINING EVALUATION

### Level 1: Participant satisfaction
The first level of evaluation is to ascertain the participants' opinions on the training received and their level of satisfaction in this regard. The aspects that usually make up this level of the evaluation, and on which the participants' opinions are sought are as follows:

- The appropriateness of training regarding their needs and expectations;
- Achieving the goals set by the training;
- Quality of content – its suitability, level, depth, interest, ratio between theory and
  practice;
- The quality of the methods and techniques used – suitability, variety, enjoyment;
- The quality of pedagogical resources – documents, audiovisual materials,
  projection equipment;
- The trainer – his/her knowledge and skills at a pedagogical level, communication,
  steering the groups;
- The group climate and level of participation;
- The quality of other resources that come into play, such as classrooms and spaces, services (e.g. coffee, lunch), timetables, information received;
- The scope of applying what has been learned to the workplace; and their suggestions and proposals for improvement.

Virtually all organisations evaluate this level, which is usually carried out through a questionnaire that participants complete just after the training has ended. However, the satisfaction of participants can also be assessed during training, with the intention of introducing improvements during the process as a result of participants' opinions. One can also use other evaluation instruments both during and at the end of training, such as:

- Informal or spontaneous evaluation, through group questioning or by questioning some of the participants individually about their satisfaction regarding the above-mentioned aspects.
- Collective assessment, applying group techniques that organise the participants in small discussion groups to think about one or more of the items outlined above. The assessment can be conducted by the trainer or by a person from the training department, and allows the gathering of consensus views on the level of satisfaction with training.
- participant observation by the trainer, which can lead to the development of a report that is delivered to the training department.
- Interviews conducted by the training department with some participants selected at random and/or the trainer.

The evaluation of this level has several limitations that should be discussed.

*Firstly*, one should emphasise the great sensitivity of the results to the climate created during training; thus, one can have a very high level of satisfaction with inadequate training activities that are nevertheless led by a trainer with great social and communication skills, and vice versa.

*Secondly*, this level of evaluation provides the participant's view of the training, but does not report on the actual learning by the participant or on the application of such learning in the workplace, and even less about the impact that all this will have on the organisation. Therefore, this level of assessment should be followed by the next levels as, by itself, it provides useful, but insufficient, information on the results of training.

Thus, organisations that only assess participant satisfaction, of which unfortunately there are still many, do not in fact evaluate training but merely reflect the opinion of its more immediate clients. The usefulness of this will depend on how the information collected is put to use and how it is linked with the results from the other evaluation levels.

### Level 2: Learning achieved by the participant
The second level of evaluation focuses on identifying what participants have learnt by the end of the training. Evaluation at this level presupposes the existence of operational and measurable training objectives, which act as an evaluation reference. In other words, as a norm from which to value the learning achieved. But one must also bear in mind that training can generate unexpected learning, which as a result is not reflected in the proposed goals. The evaluation system should be designed to allow this unforeseen learning to be collected, which is sometimes of great value to the organisation and the individuals. The evaluation of learning takes place primarily in **three** stages:

(1) At the beginning of training in order to determine the entrance level of the participants. This diagnostic evaluation, if done in advance, allows the entire design of training activities to be tailored to meet the real needs of participants, thereby increasing the effectiveness of the training.
(2) During training, in order to detect the pace of learning of participants and introduce improvements to help them reach the expected level of learning.
(3) At the end of training in order to assess the results achieved by the participants, namely the learning achieved thanks to the training.

The evaluation of learning is essential as it detects the immediate results of training and allows for further evaluation regarding the transfer of training to the workplace, which is what really interests the organisation. In fact, if we do not know what participants have learned, we cannot expect them to transfer anything to their workplace.

### Level 3: Pedagogical appropriateness
This level is focused on determining the level of internal coherence of the training process from a pedagogical point

of view. In other words, it investigates the pedagogical appropriateness in both the design and delivery of training in order to achieve the training objectives most effectively and efficiently. This evaluation level is specific to the model under consideration here and provides a clear pedagogical orientation, differentiating it from other evaluation models. Thus, the elements that are evaluated at this level are those that relate to the design and implementation of the training and its suitability for the target group. They are as follows:

- **Training objectives**
  Their relevance is analysed according to the need or needs expected to be met, their suitability at the level of the target group, their relevance, and the quality of their design and writing.
- **Content –**
  Its relevance is determined in relation to the objectives, its relevance, appropriateness of its selection, its level of precision and structuring, and the balance between theoretical and practical content.
- **Methodology –**
  Its relevance is determined in relation to the objectives and content selected, the relevance of the methods and techniques prioritised, the presence and usefulness of practical methods, and the quality of application of the methodology.
- **Human resources –**
  The teaching skills of trainers are evaluated, both in terms of knowledge and practical experience as well as pedagogical skill and group management.
- **Material and functional resources –**
  Their appropriateness, relevance, and spatial quality are analysed, as well as furniture, pedagogical resources, timetables, and other material aspects related to training. From the range of instruments that can be used to evaluate this level, we have selected those used most frequently and those that provide the most significant findings regarding the pedagogical coherence of training. They are as follows:
  - **Participants' questionnaire –** The training department can develop a questionnaire to gather the participants' views on the pedagogical coherence of the elements mentioned above, which can be carried out at the end of the training. Rather than developing a specific questionnaire, several items regarding this level of evaluation may be introduced into the questionnaire on satisfaction, which is aimed at the participants. Nevertheless, it should be noted that the information obtained through these items only provides the participants' opinions on pedagogical appropriateness, and must therefore be compared with results obtained though the use of other instruments.
  - **Trainer interview –** The training department conducts an interview with the trainer to ascertain the pedagogical appropriateness of the design and the delivery of the training. The interview collects information on all the elements outlined above, and

therefore takes place at several points: at the beginning of training to oversee and adapt the design, during training to monitor its implementation, and after training to assess the adequacy of the process undertaken. The interview provides very useful information and helps detect imbalances in order to improve the training.
- **Observation –** Observation is conducted during the delivery of the training, and may be one of two types depending on the agent carrying it out. On the one hand, the trainer can conduct participant observation of the development of training activities as well as of his/her own performance. The information obtained can be drawn up in a report to be discussed in the final interview with the training department mentioned earlier. On the other hand, the training department can conduct a systematic observation of the development of training, using a recording system – for example checklist, video – and then subsequently analyse the information gathered. This type of observation, given its cost and difficulty, is usually reserved for those training activities that, for specific reasons, require a thorough assessment of their pedagogical appropriateness.
- **Self-evaluation –** The trainer conducts a self-evaluation of the development of training and his/her performance, which is reflected in a semi-structured document that is subsequently analysed by the training department.

These would be the main options for evaluating the pedagogical appropriateness of training. When drawing up its evaluation plan, each organisation should select the evaluation items, agents, timing and tools, depending on its needs and actual possibilities. This level of evaluation provides very useful information for the training department; it guarantees the adaptation of the training design to meet the needs of the organisation; it allows for the introduction of improvements during the training process and optimises subsequent applications.

**Level 4: Transfer**
This level is focused on detecting changes that take place in the workplace as a result of training. At Level 2 the learning achieved by the participants is identified, but what really matters to the organisation is not the learning itself, but rather the transfer of learning to the workplace, that is, how it translates into changes in the working behaviour of people. Thus, evaluating transfer means detecting whether the skills acquired through training are applied in the workplace and whether this is sustained over time.

Even though transfer is what all training activities should pursue, achieving this goal is not always guaranteed and is sometimes not easy. There are several models that analyse transfer factors. Here we focus on those factors that depend on the training department and determine the possibility of evaluating the results. Training should be geared towards the transfer of the learning that it generates,

and this should be reflected in both the design and the implementation and monitoring of training. Thus, training must begin with a detailed knowledge of the organisation's needs and must be established within the operational objectives. These objectives will allow a subsequent evaluation of the changes experienced in people's working behaviour: if we do not know the situation from the start, or the objectives, we cannot objectively determine the changes that have occurred. Furthermore, training needs to be implemented following a methodology that facilitates and enables transfer, in other words, a methodology which is practical, implementable, close to the reality of the job, and which includes strategies to guide and ensure subsequent transfer. Finally, training has to look at mechanisms for monitoring and maintaining transfer, mechanisms that should run parallel to the evaluation. In this way, the orientation of the training design towards transfer is the first requirement necessary for the achievement of transfer of training. But this also requires the active involvement of other key agents in addition to the trainer, such as the participant and his/her superiors and colleagues. These play a crucial role in both facilitating transfer as well as in its evaluation, ensuring the application of lessons learned, eliminating potential barriers and collecting information that will make the evaluation possible.

The evaluation of transfer thus involves several persons who all play a crucial role in its execution:

- Trainers and training specialists design the evaluation system and drive and oversee its implementation. For this reason they should obtain the cooperation of other agents and negotiate their level of involvement in the evaluation of transfer.
- The participants also play an important role through self-evaluating their transfer and assessing the potential barriers in their environment
- The participant's supervisor or line manager is a key player as he/she knows the daily performance of co-workers in detail and can assess whether changes have been achieved through the training.
- The participants' colleagues and even customers can act as important agents at this stage of evaluation.

### Level 5: Impact

The impact of training is understood to mean the effect of certain training activities on an organisation, in terms of responding to the needs of training, problem-solving and contributing to the scope of the strategic objectives that the organisation has identified. Thus, the impact consists of changes due to learning attained through training and how the transfer of this learning into the workplace affects the department or area of the trained person as well as the organisation as a whole.

The impact of training is thus conceived as the effects that training generates in the organisation, as a result of the use of the skills that participants have acquired through training. There are two types of effects:

(1) qualitative or not translatable into economic terms; and

(2) quantitative and translatable into monetary value.

The impact assessment focuses on identifying the results and benefits that training brings to the organisation. We understand benefit to mean the increase in levels of usefulness or welfare associated with the increasing quantity of training acquired. The calculation of the benefits concentrates on measuring the effects of training by establishing impact indicators. An impact indicator is a unit of measurement to identify the concrete and tangible effects of training in the organisation (qualitative and quantitative). These indicators make it possible to identify, monitor developments and measure the actual impact that the training has generated in the organization during a period of time.

Impact indicators may be expressed in various terms: they can be expressed in quantities (numbers of purchases or numbers of products), as indices (of quality or of satisfaction), as periods (of delivery or of service provision) and as effects (materials used, human resources involved, etc.).

There are two types of indicators:

(1) economic, or hard indicators; and

(2) qualitative, or soft indicators.

Their characteristics are substantially different, if not conflicting. Hard indicators are:

- easy to measure and quantify;
- easy to translate into monetary value;
- objective;
- common in corporate data;
-  highly credible to management; and
- barely present in training.

### Level 6: Profitability

The translation of training impact into economic terms enables a profitability index to be obtained, expressed by the return in monetary benefits generated by the investment made in training. Two procedures are followed for this purpose:

(1) calculation of the costs involved; and

(2) calculation of the profitability.

### Calculating costs.

Cost calculation is the first step towards undertaking a training impact assessment, and focuses on identifying the costs involved in the training processes carried out by an organisation. There are different types and classifications of costs. Those most commonly used in the field of training for organisations are as follows:

- direct costs – trainers, materials, spaces, per diems, etc.;
- indirect costs – management, design, administration, communication, additional materials, participants' salaries, etc.; and
- overheads – general services of the organisation, such as utilities, cleaning, depreciation, etc.

All these costs are generally classified into fixed and variable costs, a process that is very useful when preparing

the training budget, and also useful when calculating the overall costs of various training activities. This calculation makes it possible to obtain the total costs and therefore the investment made in training, amounts to be used subsequently to calculate profitability. The calculation of costs is the simplest of the calculations involved in evaluating profitability as it merely involves collecting the data available in the organisation – usually found in the budgets and economic information relating to training – and adding it together in the required categories.

## CALCULATING PROFITABILITY
Once the impact in terms of benefits (evaluation Level 5) and the cost of training have been obtained, profitability can be determined. Two procedures may be highlighted here:
(1) the cost-benefit analysis; and
(2) return on investment.
Both aim to obtain a profitability figure and are therefore based on the costs and benefits involved in the training.
The cost-benefit analysis seeks the net benefit of the training, for which purpose it compares the costs with the benefits using the following formula:

Total benefit - total costs = net benefit:

However, the return on investment, explained at length by Phillips (1994), calculates profitability by indicating the net profit gained on the investment made, in other words, by looking for a profitability index. The formula applied is as follows:

$$ROI = net\ benefits/cost* 100$$

As can be seen, both methods for calculating profitability are based on a comparison of costs and benefits, and although they follow different processes they aim to identify the profitability derived from the training activities conducted. This is a purely economic calculation, and therefore it leaves aside the qualitative impact, the importance of which was discussed above. Therefore, these results should be added to the non-economic results obtained from the benefits calculation. Nevertheless, the calculation of profitability alone is enormously helpful in making decisions about the levels of investment in training and provides data that are highly valued by the managing bodies of organisations.

## Strategies to improve the evaluation of training in organisations

- Evaluation means comparing results with a previously defined reference. This reference is the situation that is expected to be achieved due to the training and is often expressed in the form of objectives. Therefore, the objectives must be well defined, observable and measurable.
- The evaluation plan should be based on a detailed analysis of the existing material and functional possibilities for its implementation. Thus, the available information should be considered, as well as the tools

and resources at hand, the time required and the approximate costs involved. Ultimately, the evaluation plan must be feasible and realistic.
- The evaluation plan must be accepted by everyone involved in the evaluation, from participants to managers. If the agents do not accept the proposed plan it will be a failure – participation in evaluation is a guarantee for success. Therefore, it is better to design a simple evaluation plan agreed upon by all rather than a complex plan that does not receive support from the organisation.
  - Ensure that training is the main cause of the results obtained, and isolate the possible effects of other factors in the organisation. It is advisable not to be too over-confident if good results are obtained and analyze the real contribution of training to the success
  - Do not attempt to evaluate everything but aim systematically to evaluate training that is strategic for the organisation or that plays an important role.
  - Distribute the evaluation results to the training clients and establish mechanisms for their use, in order to optimise the training and enhance its contribution towards obtaining the organisation's goals. The distribution and use of the results is what really gives meaning and value to the evaluation of training, enhancing the active involvement of all concerned.

## CONCLUSION
The Evaluation of any training program me has certain aims to fulfill. These are concerned with the determination of change in the organizational behavior and the change needed in the organizational structure. Hence evaluation of any training program must inform us whether the training programme has been able to deliver the goals and objectives in terms of cost incurred and benefits achieved .The analysis of the information is the concluding part of any evaluation programme. The analysis of data should be summarized and then compared with the data of other training programmes similar nature. On the basis of these comparisons, problems and strength should be identified which would help the trainer in his future training programmes.

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