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COMPARATIVE STUDY OF TRAINING EFFECTIVENESS MEASUREMENT MODELS

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ABSTRACT

In the global, competitive digital environment it is crucial that an organization should set its objectives for the continual improvement. Organizations focused toward growth and development adopts a strategic and planned approach for the maintenance of human resource. Training is an indispensable way to keep organization competitive. Initiative taken and positive efforts produce improvement in the quality of manpower, which in turn is one of the most contributors to national economic growth. To improve organization's effectiveness training is the focal point. In order to implement right training methods, organization should be aware of the training methods and their effectiveness. Study explores the measurement methods of training evaluation which is very crucial for the training effectiveness. This study tries to give general overview of training effectiveness measurement models with critical appreciation.

INTRODUCTION

Training presents a prime opportunity to expand the knowledge base of all employees in an Organization. It is one of the important activities of human resource development. The human resource department is to improve the organization's effectiveness by providing employees with knowledge, skills and attitudes that will improve their current or future job performance. Training is required at every stage of work and for every person at work. With the fast changing technologies, concepts, values and environment, training plays a vital role. Besides, implementing the right training methods, training effectiveness measurement should be done according to the models.

MATERIALS AND METHODS

Literature review

Training

Having origin from the old French word, Trahiner, the verb "to train" means "to drag" or "to pull." Dictionary meaning could be witnessed as; to draw along; to allure; to cause; to grow in the desired manner; to prepare for performance by instruction and practice exercises. Training is the act of increasing the knowledge and skill of employees for doing particular job (Flippo, 1971). It is a learning experience in that it seeks a relatively permanent change in an individual that will improve his or her ability to perform on the job (DeCenzo and Robins, 1989).

Training is the process for providing required skills to the employee for doing the job effectively, skillfully and qualitatively. Training brings behavioral changes and it can be classified into: Change of skills; b) change of knowledge; and c) change of attitude. Change in skills may be measured by what a man produces. Behavioral change the trainer deals with concept or principle. Attitudinal change held that an individual's attitudes controls the ways he acts towards his environment (Thomaskutty, 2004). Hence, it could be referred as to learn is "to gain knowledge, skill, and ability".

Knowledge refers to the information we acquire and place into memory, how it is organized into the structure of what we already know and to our understanding of how and when it is used. Thus knowledge can be seen as three distinct types; declarative, procedural and strategic (Kraiger, Ford and Salas, 1993). Declarative knowledge or conceptual knowledge is static knowledge about facts, concepts, and principles that apply within a certain domain. Conceptual knowledge functions as additional information that problem solvers add to the problem and that they use to perform the solution. Procedural knowledge contains actions or manipulations that are valid within



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a domain. Procedural knowledge helps the problem solver make transitions from one problem state to another. Strategic knowledge helps employees to organize their problem-solving process by directing which stages they should go through to reach a solution. (Jong and Monika, 1996).

Skill is the ability to carry out the tasks and duties of a given job (ILO, 2004). A skill is a proficiency at doing something beyond just knowing what something is about. More specifically, skill is an ability and capacity acquired through deliberate, systematic, and sustained effort to smoothly and adaptively carryout complex activities or job functions involving ideas (cognitive skills), things (technical skills), and/or people (interpersonal skills)

(BD, 2017).

The concept of ability has been defined in differential psychology:

1. as a latent trait inferred from patterns of individual differences across tasks,
2. as level of performance on a particular task or class of tasks,
3. as a latent cognitive process inferred from within-subject patterns of performance across trials within a task, and
4. as an affordance - effectivity relaxation i.e., a joint property of the union of person and environment (Lohman, 1997).

Evaluating the effectiveness of training

Evaluation can be defined as a systematic process of measuring the effects of Training. There are a number of types of evaluation, varying in form, the data they yield, and the situation to which they can be effectively applied. Training Evaluation determines the value of Training through systematic process; this is assured through assessment of effectiveness of Training, learning, application of new knowledge and Skill in work practices. Measuring the training effectiveness should be an important asset for the organizations. There are some criteria for measuring the success of training; direct cost, indirect cost, efficiency, performance to schedule, reactions, learning, behavior change, performance change (Singh Narendra, 2011).

Evaluation should be used flexibly in meeting the needs of different parts of the organization. Data derived from an evaluation process can be used to measure the value added by a Training program, to analyze processes, to prove cause and effect and to acquire diagnostic data for organizational development. The effectiveness of management training influences the growth and development of individual's potential and the accomplishment of organizational goals. A management training programme can be considered effective in developing the required knowledge, skills and ability among personnel, only when the objectives, course contents, methods, and evaluation aspects are systematic and well- integrated.

Effectiveness Measurement Models

1. The Kirkpatrick's Four Level Approach

In order to classify areas of evaluation, the first one would be Kirkpatrick Four Levels of Evaluation. Donald Kirkpatrick, Professor Emeritus at the University of Wisconsin and past president of the American Society for Training and Development (ASTD), first published his Four Level Training Evaluation Model in 1959, in the US Training and Development Journal.

Kirkpatrick model is now nearly 59 years old. Its elegant simplicity has caused it to be the most widely used methods of evaluation training programs. Almost organizations that conduct evaluations use the Kirkpatrick model.

Table 1: Kirkpatrick Four Levels of Evaluation

Advanced level of evaluation	Level 4: Results	Did the change in behavior positively affect the organization?
	Level 3: Behavior	Did the participants change their behavior based on what was learned in the program?



Basic level of evaluation	Level 2: Learning	What skills, knowledge, or attitudes have change? By how much?
	Level 1: Reaction	Were the participants pleased? What do they plan to do with what they learned?

The first level of evaluation (the reaction level) can provide invaluable data on problems that have arisen during the training program and, sometimes, an insight into the causes if the program is less than fully effective. The reaction and learning levels are relatively easy to organize but they do not provide any significant indicators of the final test of a training program. He defined Knowledge as “I know it”, Skill as “I can do it right now” and Attitude as “I believe this will be worthwhile to do on the job” (Kirkpatrick P, 2017).

Accordingly, Kirkpatrick inserts two further levels. The performance level tries to measure job performance through a range of evaluation tools over a period of time. Closely allied to this is the results level that seeks to measure the effect that the training program on the overall performance of the organization. The power of the Kirkpatrick model, therefore, lies in its potential as a diagnostic tool in monitoring progress in overall reform objectives.

Critical Appreciation of Model

Kirkpatrick's Four-Level Training Evaluation Model is popular and widely used; there are a number of considerations that need to be taken into account when using the model. One issue is that it can be time-consuming and expensive to use levels 3 or 4 of the model, so it's not practical for all organizations and situations. This is especially the case for organizations that don't have a dedicated training or human resource department. The model also assumes that each level's importance is greater than the last level, and that all levels are linked. For instance, it implies that Reaction is less important, ultimately, than Results, and that reactions must be positive for learning to take place. In practice, this may not be the case.

Most importantly, organizations change in many ways, and behaviors and results change depending on these, as well as on training. For example, measurable improvements in areas like retention and productivity could result from the arrival of a new Team Lead or from a new computer system, rather than from training. Kirkpatrick's model evaluate training in a "scientific" way, however, so many variables can be changing in dynamic organizations that analysis at level 4 can be limited in usefulness.

2. Kaufman's Five Level of Evaluation approach

It is named as “Kirkpatrick Plus”. Some researchers, recognizing some shortcomings of Kirkpatrick's four level approaches, have attempted to modify and add to this basic framework. It is articulated by Kaufman, Keller, and Watkins in 1995, this evaluation framework connects performance to expectations.

Table 2: Kaufman's Five Level of Evaluation

Level	Evaluation	Focus
5	Societal Outcomes	Societal and client responsiveness, consequences and payoffs.
4	Organizational	Organizational contributions and payoffs.
3	Application	Individual and small group (product) utilization within the organization
2	Acquisition	Individual and small group mastery and competency
1b	Reaction	Methods', means' and processes' acceptability and efficiency
1a	Enabling	Availability and quality of human, financial, and physical resources input

Level 1: Resources and processes; Level 1 is divided into two levels, 1a and 1b. Level 1a focuses the evaluation lens on inputs, such as the availability and quality of materials needed to support a learning effort. Level 1b considers processes. What's their quality? Are they efficient? Are learners satisfied with them? Compared to Kirkpatrick's Level 1 (Reaction), Kaufman's Level 1 focuses not only on learner satisfaction, but on the organizational factors that can impact learner satisfaction. Level 2: Acquisition; this level is focused on individual



and small group payoffs, called “micro” benefits. Are the objectives or desired outcomes of the learning intervention met? It’s pretty analogous to Kirkpatrick’s Level 2 evaluation (Learning), but Kaufman notes that the learning intervention may not necessarily be training. Level 3: Application; it is a micro analysis, examining individual and small group impacts. The relevant inquiry here is whether newly acquired knowledge and skills are being applied on the job. Level 3 also is quite similar to Kirkpatrick’s Level 3 Behavior/ Performance). Level 4: Organizational payoffs; here, the analysis examines macro benefits. What are the benefits from an organizational standpoint? Level 4 is analogous to Kirkpatrick’s Level 4 (Results). Level 5: Societal contributions; Kaufman considers this a mega analysis. How is the organization contributing to its clients and society? Is it responsive to client/societal needs? This moves evaluation beyond the organization, and examines the extent to which the performance improvement program has enhanced society and environment surrounding the organization (Kaufman, Keller & Walkins, 1995).

Comparison with Kirkpatrick Model

The “Kirkpatrick Plus” framework doesn’t stray that far from Kirkpatrick’s Evaluation Model. While measuring organizational payoff’s an important part of an evaluation, it will be not be judicious to consider only effects of a learning intervention from all the other variables that impact ROI. The organization’s commitment to success, by providing necessary resources, processes, and other supports should be subject to as much scrutiny as the learner’s performance. Issues of health, continued profits, pollution, safety, and well-being are central. The basis for mega-level concerns is an ideal vision, which is a measurable statement of the kind of world required for the health, safety, and well being of sustainable world. Level 5 has no analog in Kirkpatrick’s Evaluation Model.

3. CIRO (Context, Input, Reaction, Outcome) Approach

The CIRO four level approaches was developed by Warr, Bird and Rackham (1970). Adopting the CIRO approach to evaluation gives Organization a model to follow when conducting training evaluation.

Table 3: CIRO Four Level of Evaluation

Level	Evaluation	Focus
1	C	Context or environment within which the training took place
2	I	Inputs to the training event
3	R	Reactions to the training event
4	O	Outcomes

As the name suggests, a context evaluation seeks to measure the context within which a training program takes place. It scrutinizes the way performance needs were identified, learning objectives were established, and the way the objectives link to and support the necessary competencies. Training objectives may be at three levels: The ultimate objective: The particular organizational deficiency that the training program will eliminate. The intermediate objectives: The changes to the employees work behaviors necessary if the ultimate objective is to be achieved. The immediate objectives: The new knowledge, skills or attitudes that employees need to acquire in order to change their behavior and so achieve the intermediate objectives. In addition, it ought to consider how these components of the program reflect the culture and structure of the organization. Input evaluation tries to measure a number of inputs to a Training program, with a view to assisting managers in the process of identifying those which will be most cost-effective. Accuracy of the inputs is crucial to the success of the training initiative (Warr, Bird & Rackham, 1970). If, for example, the wrong types of learners were chosen to attend a Webinar based program, this would be a waste of time and money for the organization. As in the Kirkpatrick model, the reaction evaluation tries to measure how the trainee officers reacted to the program. Against what was intended by the program, this type of evaluation draws on the subjective opinions of participants about the Training and how it might be improved. Finally, the outcome evaluation should measure the training outcomes against the benchmark of the programs ‘objectives (Janakiram, 2011).

Comparison with Kirkpatrick Model

The key difference in CIRO and Kirkpatrick’s models is that CIRO focuses on measurements taken before and after the training has been carried out. One criticism of this model is that it does not take into account behavior. It is, therefore, more suited to management focused training programs rather than those designed for people working



at lower levels in the organization. The four levels of outcome evaluation that has strong parallels with the Kirkpatrick model:

1. the learning outcomes of trainees i.e. changes in their knowledge and skills,
2. the outcomes in the workplace i.e. changes in actual job performance,
3. outcomes for the relevant areas of the organization i.e. departments or specialist units, and finally,
4. the outcomes for the organization as a whole.

In addition to evaluating the context, inputs, reactions and outcomes to training and development, Organization must continuously measure the costs. A cost/benefit analysis is usually conducted prior to committing to any training initiatives. Costs must be monitored to ensure that they don't scale over budget.

4. Phillip's Five Level Return on Investment Approach

The return on investment model is based on the Kirkpatrick's evaluation model. Phillips added an additional step of ROI, which provides a monetary valuation of the training impact. Return on Investment (ROI) is a measure of the monetary benefits obtained by an organization over a specified time period in return for a given investment in a training program. It assumes conversion of qualitative issue into quantitative measures. ROI can be used both to justify a planned investment and to evaluate the extent to which desired return was achieved (Phillips Jack, 1997).

Table 4: Five Level ROI Approach

Level	Evaluation	Focus
1	Reaction & Planned Action	Measures participant's reaction to the program and out- lines specific plans for implementation
2	Learning	Measures skills, knowledge, or attitude changes
3	Job Applications	Measure change in behavior on the job and specific application of the training material
4	Business Results	Measures business impact of the program
5	Return on Investment	Measures the monetary value of the results and cost for the program, usually expressed as a percentage

Critical Appreciation of the Model

ROI Model cannot measure all the aspects of training success: whether the learners liked the training or not, the numbers of learners participating in the training, the extents to which learner's personal objectives were accomplished. ROI adds the fifth level to the Kirkpatrick for some reason.

There are some pros and cons of calculating ROI of a training program. The costs of training are known and expressed in monetary terms, but the benefits are often soft, subjective, and difficult to quantify and convert into the monetary terms. Costs are known up front, before training, but benefits may accrue slowly over time. But on the other hand, course objectives and content will become more lean, relevant, and behavioral with focus on monetary results rather than on the acquisition of information. And by calculating ROI on the courses where it is possible, it is more apt to be trusted on the ones cannot evaluate at four levels.

CONCLUSION

Effective training enhances the knowledge, skills, attitudes and behavior of people and hence their performance resulting in competitive organization. Training is a substantial organizational investment getting a satisfactory return on investment means linking the training function and activities to the company's overall business activity. The investment in people, both in developing and maintaining the appropriate skills, is vital part of the organization's strategy for the future. The improved performance of individuals leads directly to profit. If an organization wants highly motivated, up to date, creative and productive workforce, they need to start and build a strategy for the future. This strategy has to recognize that corporate performance is totally dependent upon the performance of the organization's people. This leads to a clear commitment to invest in these people through training.



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A training program is not complete until the organization has evaluated training results. A key to obtaining consistent success with training programs is to have a systematic approach to measurement and evaluation. Recognition of right training methods and training effectiveness measurement techniques are crucial for the organization's training success in the competitive digital, global and dynamic environment.

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