Training evaluation in large manufacturing Industries

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As manufacturing industries became the backbone of Indian economy by providing abundant employability. Some Industries are becoming sick because of technical, financial, labor, loss of market and other problems. It is also clear that the Human Resources available at the Manufacturing Industries need to improve their skill set and talent to be considered as Human Capital. This is possible through continuous Training and Development. Hence the study was conducted to identify and understand the various training programmes conducted in large manufacturing industries of Chittoor District. Through extensive literature and the articles of Kirkpatrick as well as his book the researcher has taken four propositions; Measuring the thought and feeling of trainees was easy, needs less effort and cheaper hence majority of the companies are evaluating immediate reactions after training, Measuring level of knowledge and capabilities after training also was easy, needs less efforts and cheaper when compared to measuring behaviour and results hence majority of the companies are evaluating immediate learning after training, Measuring the extent of behaviour, capabilities improved and implementation/application of learning from training was difficult, requires more efforts and costlier when compared reactions and learning and vice versa with respect to results hence few companies only are evaluating behaviour, Measuring the effects on the business or environment resulting from the trainee's performance was difficult, require more efforts and costlier when compared to measuring reactions, learning and behaviour, hence very few companies are evaluating the results and all these four propositions are supported.

Keywords: Training and Development, performance, manufacturing industries, learning, behaviour.

1. Introduction

Kirkpatrick presented a training evaluation system, which probably known as best in training circles[1]. The author stated that greater part of HR practitioners did not have enough familiarity of Kirkpatrick's model of evaluation[2]. Recently it is analysed the 'Kirkpatrick's training evaluation' in organizations published over the past 40 to 50 years isolating the four propositions which they encapsulate in 'implementing Kirkpatrick's four level training evaluation model'[3,4,5,2]. This study reports a comparison between Kirkpatrick's analysis and the extant of literature and current training evaluation practices as revealed by the HR practitioners of large manufacturing companies of Chittoor District and HR academicians.

2. Evaluation Models

Since the introduction of[6] evaluation model, many other models have emerged, each reflecting the evaluation requirements of its time. The author[7] lists some existing models: goal-free evaluation[8]; scientific approach; illuminative evaluation[9]; utilization-focused evaluation[10]; fourth generation evaluation[11]; and realistic evaluation[12]. Although evaluation has been an important subject in management studies and research as it was related to the issues of efficiency,

effectiveness and impact[13], the author[7] argue that no one model of evaluation was complete and suitable for all situations. Each type has strengths and weaknesses. To evaluate effectively, there was a need for a better understanding of the nature of evaluation, its purpose, and other important relevant aspects such as organizational and participants' needs. In this paper, we present a four-phase evaluation system incorporating both organizational and participants' perspectives, resulting in a customized training program. In essence, the final design of the training program was created collaboratively involving:

(1) Designing the training initial program;
(2) Launching and evaluating the initial program;
(3) Designing quantitative measures based on feedback from phase 2; and
(4) Ongoing training and evaluation.

There was a mismatch between organizations desire to evaluate training and the extent and effectiveness of actual evaluation. There are a number of reasons for this including the inadequacy of current methods. This study has sought to briefly explain an alternative approach that sets out a systematic set of stages that can guide practitioners within the context of their own organization. It proposes a productivity-based framework to focus data collection and the utilization of a metric to present results. As Paul Bramley notes in his book Evaluating Training ultimately assessing the worth of a program ''is actually someone's opinion''[14]. A metric provides an ideal tool to allow stakeholders make informed judgments as to the value of a program, whether it has met its objectives and what its impact was. Most importantly the approach focuses on the bottom line and draws evaluators' attention to consider what the ultimate overall impact of learning was[15].

In 1959 the idea of Evaluating Training Programs had been developed by Donald Kirkpatrick and same has been defined and published in 1975 and revised and updated in 1998 in his book 'Evaluating Training Programs: The Four Levels'. Now Kirkpatrick's four-level model considered as an industry standard across the HR and training communities[16].

The four levels of Kirkpatrick's evaluation model essentially measure:
- Reaction of trainees – what they thought and felt about training;
- Learning – the resulting increase in knowledge or capability;
- Behaviour – extent of behaviour and capability improvement and implementation or application;
- Results – the effects on the business or environment resulting from the trainee's performance.

2. 1. Ease and difficulties in implementing Kirkpatrick's training evaluation model

1. Measuring the thought and feeling of trainees was easy, needs less effort and cheaper hence majority of the companies are evaluating immediate reactions after training.
2. Measuring level of knowledge and capabilities after training also was easy, needs less efforts and cheaper when compared to measuring behaviour and results hence majority of the companies are evaluating immediate learning after training.
3. Measuring the extent of behaviour, capabilities improved and implementation/application of learning from training was difficult, requires more efforts and costlier when compared reactions and learning and vice versa with respect to results hence few companies only are evaluating behaviour .

Measuring the effects on the business or environment resulting from the trainee's performance was difficult, require more efforts and costlier when compared to measuring reactions, learning and behaviour, hence very few companies are evaluating the results.

3. Method

Following the researchers[3,4,5,16], I selected respondents from HR practitioners and academicians that satisfied the following criteria:

1. Importance of Training evaluation: HR practitioners who were been in training and development and implementing and implemented training evaluation from minimum of 10 years and maximum of 50 years. HR Academicians and consultants who have experience in training and development and training evaluation.
2. Complexities associated with implementing training evaluation: Evaluating reactions after training were easier and cheaper when compared to evaluating learning, behaviour and results[3,4].

The HR managers of various large industries were approached and asked to direct me to colleagues and subordinates that were engaged in implementing training evaluation and satisfying our criteria to participate in the focus group discussions. A brief description of our research aims the experience the respondents had in training and development and implementation of training evaluation need to examine so that each research participant of FGD will fully understood the reason for focus group discussion. Then the researcher ensured that they were willing to be part in the FGD for about two hours. The respondents were chosen from a variety of industry sectors in order to obtain data that were not sector specific. Each FGD was ranged from minimum one and half hours to three hours. Each FGD was tape recorded with the respondent's agreement.

3. 1. Focus group discussion

Focus Groups were used to examine the 'effect', researcher will not be interested in what people thought but will be interested in *how* they thought and *why* they thought and many focus group studies rely on no more than 4 or 5 groups, and this may be a perfectly adequate number when working with particular population[17]. Conducting and collecting data through focus group method was not new. During 1920s it was first mentioned as market research technique[18,19]. In 1950s People's reactions to wartime propaganda was examined by the researcher[20]. In 1970s and 1980s group discussions were popularly used as data collection method[21,22,23,24]. Focus groups were used to explore people's views and experiences of contraception[25,26].

4. Findings

The tape recorded FGDs were first transcribed into ordinary word processing files. The transcripts were studied later and all clauses pertaining to Kirkpatrick four propositions were isolated. Three raters', working independently of each other, then compared these clauses with Kirkpatrick's 'ease and difficulty in implementing training evaluation' propositions. A pair wise comparison yielded inter-rater agreement of 85 per cent. Disagreements were resolved jointly between the three raters.

Each of Kirkpatrick's[3,4,5] 'ease and difficulty in implementing training evaluation' propositions was set out in full below, followed by our observations on their training evaluation practices.

Proposition 1

Measuring the reactions (thought and feeling) of trainees was easy, needs less effort and cheaper hence majority of the companies are evaluating immediate reactions after training. The reactions were collected on facilities, schedule, meals, case studies, exercises, audiovisuals aids and handouts and trainer etc. Getting immediate and honest responses, developing acceptable standards,

measuring reactions against standards and take appropriate action need to be done for the better evaluation of trainees' reactions[5].

The researcher found that in all of the respondents companies the reactions of trainees were evaluated after training. All other respondents companies were collecting the feedback immediately on facilities, schedule, meals, trainer etc. The respondents revealed that the reactions are collected immediately but they don't know about whether the response was honest or not? Except one company rest of the companies didn't develop acceptable standards and they were not measuring against standards but they didn't take appropriate action based on the feedback of trainees. One HR manager described the training evaluation and the evaluation of training reactions:

When we speak of training evaluation we also need to speak about the behaviour and attitude of the employees. People come and people go. How does the culture of the organization sustain for years to come. According to psychology the evolution of behaviours happen like this: Everyone has experiences, these experiences lead to beliefs, and Beliefs lead to values and the values lead to the formation of attitude and finally attitude leads to behaviour. People are the most valuable assets of the organization. We are calling them as the human capital. There are employees who had joined as engineers and rose to the level of CEOs in our company. Trainings like technical, leadership development, behavioral are conducted. Technical trainings are conducted basing on the technical up gradations that happen in the industry. We have an organizational initiative program to inculcate the values and leader behaviors to all the employees. Right from the operator to the highest CEO everyone will have to demonstrate certain leader behaviors which we have experienced and think would lead to the success of the organization. We have engaged an external organization who came and conducted various focus group discussions with our employees and then designed a module which was customized to various grades of employees. To give more importance to these leader behaviours we made them a part of PMS. Employees will not only be assessed on the achievement of the OATs but also on the leader behaviours.

We do various levels of Kirk Patrick model of evaluation basing on the type of training programs. For example if it was a refresher program we do only Reaction part. In our company, we have developed an online tool basing on the Kirk Patrick model of evaluation. We have been doing the Reaction part which was level 1 since many years. We have our own customized feedback form, which the participants of the training program will give his/her feedback on the trainer and program. This will be on various parameters like trainer facilitation skills, query handling, subject knowledge etc. and on the program if the module was in line with their requirements, food & venue ambience, duration of the program etc.

The first part of Kirkpatrick training evaluation proposition 'majority of the firms measuring the reactions (thought and feeling) of trainees was easy, needs less effort and cheaper hence majority of the companies are evaluating immediate reactions after training' was supported by the researcher's findings. We have no direct evidence with which to assess whether the companies are collecting the reactions immediately, or the responses are honest. But all the respondents companies were evaluating the reactions.

Proposition 2

Measuring level of knowledge and capabilities after training also was easy, needs less efforts and cheaper when compared to measuring behaviour and results but more difficult and time-consuming than the measurement of reaction, hence majority of the companies are evaluating immediate learning after training. The trainer can teach three things in training programs; knowledge skills and attitude hence; measuring learning will determine what knowledge was

learned? What skills were developed or improved? And what attitudes were changed? The measurement of learning was more difficult and time-consuming than the measurement of reaction (Kirkpatrick, 1998). The evaluation of learning will be more effective if the organizations use control group if practical, evaluating knowledge, skills and attitudes both before and after the program, using or conducting test and using the results of the evaluation to take appropriate action.

The researcher also found that the almost all the companies are taking the scores of pre-test and post-test of training programs. But except one company's respondents' rest of the respondents are not using the results of the evaluation to take the appropriate action. The HR manager of the company described the learning evaluation:

For safety programs we follow both Reaction and Learning levels in evaluation and we also have the evaluation of Level 2 which was the learning part. Now as per Kirk Patrick model we measure the learning before and immediately after the program. We do this by conducting a Pre & Posttest for all the programs both behavioral and technical also. This will be mostly objective questionnaire and in few cases a combination of objective and descriptive also. Pre & Posttest measure the knowledge part of the participant as to how much he has learned the content of the program. The questionnaire that was developed will be in line with the training module that was developed. The same questions will be given with some jumbling as the post test. We immediately conduct the posttest since this was only a measurement of learning and not the applicability of the learning. Now we ensure that the trainer also covers the concept related to the questions that are covered in the pretest. For effectively measuring the effectiveness at this level 2 of Kirk Patrick's model we ensure that the training module was not developed in a generic way but customized as per our requirements. We calculate each participant learning percentage for that particular training program.
We use the formula like:

$$\text{Learning \%} = \frac{(\text{Post test score \%} - \text{Pretest score \%})}{(100 - \text{Pretest score \%})} \times 100$$

Why we calculate against (100 – Pretest score %), because the learner has only a scope of improvement to the remaining per cent what he has obtained in the Pretest. For example if a batch of 25 participants have attended program on "Communication Skills" we calculate the group learning% also. This will give me the improvement or effectiveness with respect to level 2 of Kirk Patrick model. We invest almost an amount of INR 2500 on each participant for a 2 days training program when conducted in an outside hotel. The admin of L&D will enter both the Reaction part and the Learning scores in the online effectiveness measurement tool.

Proposition 3

Measuring the extent of behaviour, capabilities improved and implementation / application of learning from training was difficult, requires more efforts and costlier when compared reactions and learning and vice versa with respect to results hence few companies only evaluating the behaviour . Evaluating behaviour attempts to evaluate the change in job behaviour occurred due to attending the training program. It is more complicated and difficult to answer than the evaluating reactions and learning. It is impossible to predict when a change in behaviour will occur because it may occur immediately if he or she gets an opportunity to apply the learning, change in behaviour may occur at any time after the first opportunity, or it may never occur. The reaction and learning evaluation can and should take place immediately. When the firm evaluates behaviour, the firms need to decide: when to evaluate, how often to evaluate and how to evaluate. This makes it more time-consuming and difficult to do than evaluating reaction and learning. To evaluate behaviour

companies need to use control group if practical, allow time for behaviour change to take place, conducting survey or interview one or more for immediate supervisors, their subordinates and others who often observe their behaviour, repeating the evaluation at appropriate times and considering cost versus benefits[5].

The researcher also found that the implementing behaviour evaluation was so complex when compared to the evaluation of reactions and learning and majority of the companies are not evaluating the behaviour of trainees after training programs. The HR manager of Amarraja group described the behaviour evaluation in their company:

Coming to Level 3 of Kirk Patrick model, once an employee comes back from the training program how does his superior assess his "Behavior" part i.e. did the learner apply the learning on the job or not. For this to happen we have to compulsorily do the competency mapping for every employee. For every competency we define minimum two outcomes. These are the learning outcomes. The outcomes will be shared with the trainer which helps the trainer to develop the content in line with the requirements. After the competencies and the respective outcomes for each competency which in turn was linked to the position has been mapped, the respective superiors will have to do the training need identification. Out of the mapped competencies, the superior will identify few training needs which are of priority for that employee. While doing the TNI, the superior should define Business result expected and the target. Learning outcomes are those which the participant was expected to learn by the end of the training program. Business result expected was one which the employee has to apply on the job and accomplish or complete within 30 days to 90 days after the program. Target set was something quantifiable. The fourth stage which was "Results" was measured generally between 6 months to 1 year. After the participant has applied the learning and achieved the business result, how that impacted the business results will set by the department, function or by the organization (For example the Balanced Score Card).

At level 3, the participant has to make a self assessment of his Behavior or application of learning and then the superior will assess him based on some criteria taking into consideration the business result that has been defined when identifying the training need. For external programs that come as a training need in between, we will map them into the effectiveness model.

The HR manager of Saint Gobin revealed that 'We nominate our employees for some external programs where more investment was needed. For such programs we evaluate reaction, learning and behavior part. The employees after coming back from the training are given some projects with specifications of achievements/targets along with deadlines. Hence we will evaluate whether the participants were able to apply the learning back on the job which evaluates the Behavior part. We also calculate return on investment for such programs. Before the program was sponsored Finance team will track the expenses and all necessary approvals will be documented.' Now after a period of six months or so, once the participant/learner applies the learning, we measure the savings from the project that has been given.

Proposition 4

Measuring the effects on the business or environment resulting from the trainee's performance was difficult, require more efforts, time-consuming and costlier when compared to measuring reactions, learning and behaviour, hence very few companies are evaluating the results. The most important and most difficult part of training evaluation process was evaluating the final results occurred because of attending the training program. The company should concentrate in measuring the improvement in quality, profits, productivity, reduction in waste/scrap, improvement in quality of life, better teamwork, improved interpersonal communications and human relations, reduction in costs, improved sales, improved marketing research, return on investment etc.[5]

This was found by the researcher that not even one company evaluating the results after training. The HR manger of a company revealed that 'their company was in evaluating the behaviour and they will evaluate the results in the next year, and he also revealed that they had tie up with Kirkpatrick's institution to implement the process and they are in the process.'

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