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Training Evaluation Models for Farmer Training Programmes

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Abstract

Training has been an effective means to attain knowledge, skill and abilities adding to human efficiency and effectiveness. Ensuring effective training means knowing whether investment of time, energy and resources are being spent effectively or not. Active play of diverse resources makes it imperative to evaluate the effectiveness of the training. The paper attempts to explain the important models of training evaluation which can be adopted by practitioners for evaluating farmer trainings. These approaches can be used as a base to assess farmer training interventions and also help to revise and design an intervention which is effective and free from impediments.

Keywords: Effective training, farmer training, training evaluation models, training

1. Introduction

Agricultural development is attributed to three systems that are (Kishore, 1986) Knowledge Generating System (KGS), Transfer of Technology System (TOT) and the Knowledge Consuming System (KCS). Transfer of fast emerging agricultural technologies is a challenge that India comes across in order to sustain the increase in farm productivity and economic viability of farming. Variety of extension programmes are implemented for creating awareness, educating and motivating the farmers, farmwomen and rural youth to adopt and manage the new agricultural technology in the fields or homes (Singh et al., 2010). However, according to Baldwin et al. (2009) successful transfer of learning to workplace is often limited. The complexity of the technology transfer process leaves beneficiaries such as small and marginal farmers behind who alas have to resort to conventional processes (Chandra et al., 2018). Therefore, assessment of training would help in revising programmes to meet large number of goals and objectives (Mann, 1996). A successful training can be promised by using systematic approach to measure and evaluate (Dahiya and Jha, 2011). The aim of the paper is to throw light on important approaches of training evaluation consequently widening the scope for practitioners in availing these techniques in farmer trainings.

Training is an imperative constituent of development of human capabilities and also acts as a catalyst for socio-economic development. A planned deliberate process adds to human efficiency and effectiveness. Similarly, farmer trainings are targeted towards improving farmer's efficiency in farming (Sajeev et al., 2012). Training is attainment of best way of utilising knowledge and skill. Individuals require specific skill, knowledge and attitude to avoid and overcome problems making training need specific where (Proctor and Thornton, 1961) need is the difference between what is and what ought to be (Leagan, 1971). According to Marsden and Peter (1998) training aims to provide appropriate tools both conceptual and technical to improve efficiency, to make individuals aware of the changes in their respective field and broaden ways of thinking and implementing social development programmes.

2. Impact of Training on Farmers

Training has been reported by numerous studies to transform farmers for better. Studies have conveyed positive effect on farmers as a result of training. Farmers have gained knowledge and skill through interventions which they have further applied to their farms. Noor and Dola (2011) listed six areas in which farmers were benefited starting at the top with increase in work quality followed by increase in farm product, cost saving, time savings, increased income and lastly increase in networking. Farmers tend to consider themselves as better farm managers along with improved motivational efforts, attitude towards farming and their self-efficacy and had developed skill, knowledge and abilities that could now be transferred to the field. Similar results were found by Sarker and Itohara (2009) showing gain in knowledge and

skill, increased crop production, improvements in income, family well-being and overall improvement in the livelihood, whereas the programme effectiveness in raising capacity to face adverse situation was reported by 18 % farmers. Development of skill, knowledge and abilities are few positive result of training intervention which is not just farmer's improvement but also economic development of the country (Sharma et al., 2017).

3. Training Evaluation

Training evaluation is the most integral part of any intervention with an aim to determine the effectiveness. The basic idea behind the evaluation is improvement of the training programme. It is a process of gathering information relevant to judge the intervention or to make change which makes it a critical exercise as training outcomes can be tangible and intangible. Evaluation defined by Williams (1976) is assessment of value or worth. Harper and Bell (1982) defined evaluation as planned collection, collation and analysis of information to make judgements about the worth. According to Kirkpatrick (1996), training evaluation is to determine the effectiveness of the intervention. Goldstein (1993) outlines evaluation as the "systematic collection of descriptive and judgmental information necessary to make effective decisions related to selection, adoption, value and modification of various instructional activities".

The aim of training evaluation is to extend feedback to the parties involved for improvement and to assess the skill level (Sims, 1993). The idea behind the assessment is to know the effectiveness and to justify the resources being spent on training. Therefore, proper audit of the effectiveness is important. Training evaluation frameworks can be broadly classified under goal-based and systems-based approaches. Under the goal-based approach the best known model is (Kirkpatrick, 1959; Kirkpatrick and Kirkpatrick, 2006). For systems evaluation approach, the well-known models are Context, Input, Process, Product (CIPP) model; Training Validation System (TVS) approach (Fitz-Enz, 1994) and Input, Process, Output, Outcome (IPO) model (Bushnell, 1990; Eseryel, 2002).

4. Models of Training Evaluation

4.1. Kirkpatrick model

Introduced in the year 1959 by Donald Kirk Patrick.The model is very popular which measures the outcome in four levels that should result from a highly effective training programme. The model is a four phased assessment of areas such as reaction, learning, behaviour and results (Kirkpatrick, 1977). Each phase has its own importance and interpretation. The reaction evaluates how participants feel about the programme they attended. Topno (2012) reaction is the first level that measures the participant's reaction towards the overall programme, his reactions or attitudes towards specific components of the programme such as the topics, contents, methodology, instructor etc. The second level is attempts to distinguish between what is already known and what is actually learnt during the training. Learning outcomes can be change in knowledge, skill or attitude or multiple learning outcomes, therefore the evaluation has to be based upon what objectives does the training serve. In totality, learning assesses the extent to which the trainees learned the information and skills. The next on the list of levels is behaviour which measures the extent to which participants applied their learning and changed their behaviour, this level aims to evaluate the change in work behaviour as a result of training. The last level measures the extent to which the results have been affected by the programme and the benefits of the training programmes.

The significance of this model in farmer training is evident from the past research (Rahmat et al., 2019; Elkashef, 2019; Bimpeh, 2012; Diab, 2015). In the first stage of the evaluation for farmer training areas such as relevance of the programme, content and their satisfaction can be assessed (Martin, 1999). The second level can evaluate the learning's of farmer from training such as good agricultural practices. Behaviour level can be used to indicate farmer's positive change in behaviour as a result of adoption of skills and innovations (Leeuwis, 2004). The result stage would assess the quality and quantity improvement in goods (Amedezro and Youdeowei, 2005) improvement in production (Martin, 1999) and improved yield and financial savings leading to increased livelihood (Williams, 2013).

4.2. CIRO

CIRO proposed in the year 1970 by Warr et al. (1970) evaluates training on aspects such as context, input, reaction and outcomes. It considers measurement both before and after the training has been carried out (Tennant et al., 2002). The context evaluation is correct alignment of training objectives with training needs. Input evaluation deals with the design and delivery of training activity. Reaction level aims to gain information on the quality of their experience of training and lastly the outcome focuses on the gain from the training. The outcomes can be evaluated in levels such as immediate, intermediate and ultimate evaluation. Immediate evaluation is where change in knowledge, skill and ability is measured before the individual returns to his work. Intermediate evaluation is change in work performance and how the transfer took place (Santos and Stuart, 2003). Lastly, the ultimate evaluation measures the overall result of the training. CIRO model can be used in farmer trainings by analysing the training needs which can pertain to areas that farmers lack in. Areas of training material or teaching aids can be covered in the input stage (Sseguya, 2018). The reaction of farmer training intervention can be on areas such as content of the program (Martin, 1999), approach used, which will help improve the intervention. The last level can assess gain in

knowledge, skill and ability immediately after training, change in performance on farm which would be application phase and ultimate evaluation in terms of productivity and income improvement which takes a longer duration to assess.

4.3. Return on investment model

Phillips (1996) proposed another level to Kirkpatrick's four level of evaluation which was the return on investment produced by training. This model communicates the worth of training in monetary value. It communicates the Kirkpatrick's fourth level data that is the results into monetary values (James and Roffe, 2000). There are various ways of presentation associated to this model but the most usual form is the cost: benefit ratio. This model can be used in a way where the total cost involved in the training can be compared with the monetary benefit farmers had from training. The down side to this evaluation is its difficulty level and expense involved, as the assessment of return on investment can be covered in the Kirkpatrick fourth level 'Result'. The first four levels of the model can be used in case of farmer training but the difficulty lies in the last stage of this model. The assessment under this model can be difficult when the evaluator is dealing with benefits in terms of change in motivational level or change in farmer's attitude.

4.4. Training validation system approach (Fitz- Enz, 1994)

The model consists of four stages of evaluation which are situation, intervention, impact and value. The first stage collects pre-training data to ascertain the current levels of performance within the organisation and define a desirable level of future performance. The second in the process is intervention wherein the reason for existence of gap is identified and to assess whether training is the solution to the problem. The third stage assesses the impact of the intervention. The difference between the pre and post training data is the impact of training. The last stage of evaluation is value which measures difference in quality, productivity, service or sales all of which can be expressed in terms of money. When using this model to evaluate the farmer trainings, agrarians can be pre-tested for their level of knowledge, skill and abilities to determine their training needs. According to Martin (1999) farmer's participation is linked to their training needs. Consequently assessment should be done on whether training would bring about a change that is required. In the third stage farmers can be tested for change after training and compare it with pre training data and lastly value can be measured in terms of results in quality and quantity improvement (Amedezro and Youdeowei, 2005).

4.5. Input process output model

This model was proposed by Bushnell in the year 1990. This model is a comprehensive view on evaluation. The first stage in this model is input which evaluates the system performance indicators such as trainee qualification, availability of materials, appropriateness of training and more. The second stage is the process which assesses the planning, design, development and delivery of training interventions. The last and the final stage of this model is the output in which gathers data on improvements from the training intervention. This model can be used in farmer training evaluation with ease as similar aspects from each stage have been covered in past farmer trainings such as material or teaching aids (Sseguya, 2018), education of trainee (Khan et al., 2017), transfer design **(**Muthoni and Miiro, 2016), appropriate aid (Williams, 2013), gain in knowledge and skill, increased crop production, improvements in income, family well-being and overall improvement in the livelihood (Sarker, 2009).

5. Conclusion

Training evaluation determines the extent of fulfillment of objectives and identifies scope of improvement. Although there are various models of training evaluation practitioners can resort to, but from the above discussion it is evident that Kirkpatrick model is one of widely accepted and easy to use models. Therefore, it is concluded that Kirkpatrick model of assessment can be used in farmer trainings based on its merits to evaluate, revise and design an intervention which is effective and free from impediments.

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