



EFFECTIVENESS OF INDUCTION TRAINING PROGRAMME ON KNOWLEDGE LEVELS OF MULTI PURPOSE EXTENSION OFFICERS (MPEOs) IN ANANTAPUR DISTRICT OF ANDHRA PRADESH

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ABSTRACT

Krishi Vigyan Kendras - KVKs (Farm Science Centres) have been established by the Indian Council of Agricultural Research. The trust areas of KVKs are refinement and demonstration of technologies, and training of farmers and extension functionaries. Imparting need based trainings in agriculture and allied fields for the extension functionaries is one of its mandates. The study was undertaken to do a formative (outcome) evaluation of the Multi Purpose Extension Functionaries (MPEOs) recruited in the month of July, 2015 in Anantapur district of Andhra Pradesh by DoA (Department of Agriculture) for whom 3 days induction training programme was imparted at KVK, Kalyandurg. One-group pre and post evaluation design was employed for conducting a formative evaluation. The knowledge tests were administered to 95 MPEOs, before and after the training programme. The results showed that there was a significant knowledge gain in terms of participants qualification wise, agricultural division wise, subjects like crop production, plant protection and allied departments including horticulture, veterinary and home science. The pre-training mean knowledge score of the trainees was 31.35, which increased to 39.46 after the training. There was an increase of 8.11 in the mean knowledge score, which is significant at the level $p < 0.01$. Majority of the respondents were 'satisfied' regarding its usefulness in enhancing knowledge, appropriateness of the content and its relevancy, stimulation of inquisitiveness, arousal of curiosity and interest.

KEY WORDS: Induction training, KVK, Effectiveness, Knowledge, Agriculture and allied information, 't' and 'z' tests.

INTRODUCTION

Andhra Pradesh state is envisaging a double digit growth in real terms and identified nearly 40 growth engines spreading across Agriculture, Industry and Services sectors of the economy, which together account for 80% of the total Gross State Domestic Product. Given the long term growth agenda, the state needs to put in greater efforts at a cutting edge level to achieve a higher growth rate in the coming years. By keeping this target, the government has recently abolished Adarsha Rythus system and replaced it with well organized agriculture extension network with qualified personnel for Multi Purpose Extension System. With one Multipurpose Extension Officer for every 1000 hectares of cultivable area with a total of 6354 Multipurpose Extension Officers for net cropped area of 63.54 lakh hectares on contract basis under the control of ATMA in each district and also to form a Rythu Mithra Group for every 100 hectares to fulfill the following objectives

- To facilitate the effective extension reach to the farming community.
- To address the immediate needs of the farmers during the season in case of unfavorable seasonal conditions.

➤ Sensitize the farmers on measures to be taken up to enhance the productivity Levels.

They were also assigned about 16 duties and responsibilities accordingly. As a part of this Anantapur district was allotted 1013 MPEOs and in first phase 340 MPEOs were recruited in the district. Three day induction training programme to 95 newly recruited MPEOs was organized at Smt. Lakshmi Devi Krishi Vigyan Kendra, Kalyandurg jointly by Department of Agriculture, Anantapur and KVK Kalyandurg working under Acharya N.G.Ranga Agricultural University. There were four categories of trainees viz. B.Sc. (Ag.), Diploma in Agriculture, Diploma in Horticulture and B.Sc. (BZC) among MPEOs. A pre and post training evaluation was carried out to analyze the raise in knowledge levels among different categories of trainees.

MATERIALS & METHODS

Krishi Vigyan Kendra, Kalyandurg, has conducted 3 days induction training programme between 01.07.2015 to 03.07.2015 to the MPEOs of three agricultural divisions namely Kalyandurg, Rayadurg and Uravakonda located in KVK operational area. Exploratory research design was used for this study. The details are given in Table.1

TABLE 1: Particulars of MPEOs

S.No.	Division	No.of MPEOs
1	Kalyandurg	36
2	Uravakonda	39
3	Rayadurg	20
Total	3	95

Among the 95 MPEOs, there were 5 trainees holding B.Sc.(Ag.) qualification, 57 candidates possessed diploma in agriculture, 10 trainees diploma in horticulture and 23 members B.Sc. (BZC) presented in Table 2.

TABLE 2: Distribution of respondents according to their qualification

S.No.	Qualification/ discipline	No. of MPEOs
1	B.Sc. (Ag.)	5
2	Diploma in Agriculture	57
3	Diploma in Horticulture	10
4	B.Sc.(BZC)	23
Total	4	95

Operational definitions of variables

Gain in knowledge

English and English (1961) defined knowledge as a body of understanding information possessed by an individual. In the present study gain in knowledge was measured in terms of the difference between before and after training knowledge scores of the trainees. It was measured in terms of correct responses given by the trainees by way of recall on a knowledge test administered to them before and after the organization of each selected vocational training course.

Research design

One-group pre and post evaluation research design was employed to study the reactions and knowledge gain of the trainees attending the three days vocational training programme.

Tools of data collection

The respondents were classified on the basis of cumulative square root frequency method for the existing knowledge level (pre exposure of induction training). The respondents were exposed to the 3 days induction training programme at KVK in the aspects of crop production, crop protection, horticulture, animal husbandry and home science. The post-exposure data was collected immediately after completion of the induction training programme from the respondents. Knowledge was measured at two stages *viz* .pre and post exposure with the help of a well-structured interview schedule consisting of 54 questions relevant to the subject matter content taught in the training programme. The knowledge test consists of objective type of test items. The scores assigned were 1 and 0 to correct and wrong/no reply respectively and then the total score for each respondent was calculated by summing of his/her scores for all the items and difference between the score determined knowledge gain. The gain or lose of knowledge was measured in terms of division wise, qualification wise, subject wise and division cum subject wise of respondents between pre and post trainings.

Statistical analysis

The data were analysed by paired 't'-test and "z'-test, two samples for mean depend upon on sample size to find out

the statistical significance of the observed difference between pre-test and post-test training knowledge scores of MPEO in multifaceted angles that is qualification wise, division wise, subject wise and division cum subject wise. The calculated value of 't' was tested at five percent and one percent levels of significance. The trainees might have been sensitized due to administering of knowledge test before training (pre-test). There is interaction between the treatment and the pre-test (Campbell & Stanley, 1966) but it is not a threat to internal validity.

RESULTS & DISCUSSION

The empirical results have been discussed under the sub-sections: Effectiveness of training on knowledge levels of MPEOs qualification wise, agricultural division wise, subject wise and agricultural division cum subject wise. The knowledge aspects of the agriculture and allied areas were assessed among the MPEOs through induction training programme for three days. The knowledge of the subjects immediately after training was assessed to find out the knowledge gain. The gain in knowledge in different aspects of agriculture and allied subjects was taken as an indicator for the effectiveness of the induction training in knowledge gain. The data presented in the Table 3 pertains to the gain in knowledge of the respondents with respect to their qualifications. The pre and post training knowledge scores of participants of B.Sc. (Ag.), Diploma in Agriculture, Diploma in horticulture and B.Sc. (ZBC), qualifications were, 32.33 and 38.33, 32.03 and 40.38, 30.75 and 40.37, 29.69 and 36.65 respectively. In order to test the effectiveness of the induction training statistically, 'z' or 't' tests were applied based on the sample size to find out, whether there is any significant difference existed between the pre-exposure and post-exposure knowledge. The 't' and 'z'-values of difference between pre and post training mean knowledge score of all the participants were significant ($p < 0.01$) except participants of B.Sc. (Ag.) qualification for which the significance was found at 95 percent ($p < 0.05$) level of probability. Pre-training mean knowledge score ranged between 29.69 and 32.33.

TABLE 3: Qualification wise effectiveness of training on knowledge levels of MPEOs

S. No	Components	No. of Trainees	Mean Knowledge score		Mean difference	'Z'-Cal. Value	't' - cal value
			Pre training	Post training			
Qualification wise trainees knowledge gain							
1	B.Sc.(Ag.)	n=05	32.33	38.33	6.0	--	2.93*
2	Diploma in Agril.	n=57	32.03	40.38	8.35	9.11**	--
3	Diploma in horticulture	n=10	30.75	40.37	9.62	--	5.43**
4	B.Sc.(BZC)	n=23	29.69	36.65	6.96	--	4.43**
Overall knowledge gain of trainees							
5	Overall Knowledge	n=95	31.35	39.46	8.11	11.24**	--

**significant at 0.01 level of probability
 **0.01 'z' -critical value - 1.95
 **0.01 't' -critical value (n=10) - 2.26

*significant at 0.05 level of probability
 **0.01 't' - critical value (n=23) - 2.50
 *0.05 't' - critical value (n=05) - 2.77

Before training they had comparatively less knowledge but after training, significant gain in level of knowledge was achieved in all the aspects of agriculture and allied disciplines. The post training mean knowledge scores on different subjects ranged between 36.65 and 40.38. These findings are in concordance with the findings of Shankara *et al.* (2014) who was also found significant improvement in knowledge levels of extension functionaries (Bhuchetana facilitators) on various aspects of agriculture aspects in Tiptur, Tumkur districts of Karnataka state. Overall knowledge gain was also observed significant ($p < 0.01$) in the study of Singh *et al.* (2010) on evaluation of the agricultural vocational training programmes conducted by the Krishi Vigyan Kendras (Farm Science Centres) in Indian Punjab.

Overall knowledge gain

The pre-training mean knowledge score of the trainees of different qualifications was 31.35, which increased to 39.46 after the training. There was an increase of 8.11 in the mean knowledge score, which is significant at the level $p < 0.01$ (Table 3).

Division wise pre and post training knowledge gain among MPEOs

Besides observing the significant gain in knowledge among qualification wise of participants, the difference was also analyzed between agricultural divisions since the participants were from three agricultural divisions and whose details are presented in Table.4

TABLE 4: Division wise pre and post evaluation knowledge gain among MPEOs

S.no	Components	No. of Trainees	Mean Knowledge score		Mean difference	'Z'-cal. Value	't' – cal value
			Pre training	Post training			
Agricultural division wise trainees knowledge gain							
1	Uravakonda	n=39	32.92	38.97	6.05	6.22**	--
2	Rayadurg	n=20	31.45	40.05	8.6	--	5.19**
3	Kalyandurg	n=36	29.63	39.66	10.03	8.02**	--

**significant at 0.01 level of probability **0.01 'z' -critical value - 1.95 **0.01 't' -critical value - 2.52

In addition to participants qualification wise knowledge gain before and after induction training, agricultural division wise was also tested. Pre and post training mean knowledge scores of participants of Uravakonda, Rayadurg and Kalyandurg agricultural divisions were 32.92 and 38.97, 31.45 and 40.05 and 29.63 and 39.66 in

subjects like crop production, crop protection, horticulture, veterinary and home science respectively. The 't' and 'z'-values of difference between pre and post training mean knowledge score of participants of all three divisions were found significant ($p < 0.01$).

GRAPH 1: Graphical representation of pre and post training changes in knowledge levels of the MPEOs



The graph clearly shows that before training their knowledge scores were between minimum 20 to maximum 40. Whereas after training their knowledge scores were enhanced from minimum 30 to maximum 52 in the

agriculture and allied subjects. This reveals that there was a significant effect of induction training on the knowledge levels of MPEOs among all the trainees.

TABLE 5: Subject wise pre and post knowledge gain among MPEOs

S.No	Subject	No. of Trainees	Total score	Mean Knowledge score		Mean difference	'Z'-cal Value
				Pre training	Post training		
1	Crop production	n=95	17	10.39	13.63	3.24	11.45**
2	crop protection	n=95	11	6.61	8.64	2.03	8.33**
3	Allied subjects	n=95	26	14.47	17.43	2.96	6.97**

**significant at 0.01 level of probability **0.01 'z' - critical value - 1.95

As a part of testing the knowledge gain in multiple angles, subject wise has also been tested to see the significant difference of knowledge gain among the participants. In this context the pre and post knowledge levels on crop production, crop protection and allied subjects (horticulture, animal husbandry and home science) were also tested and subjected them to statistical analysis. Pre and post training mean knowledge scores of participants in crop production, plant protection and allied subjects were 10.39 and 13.63, 6.61 and 8.64, 14.47 and 17.43 respectively. The 'z'-values of difference between pre and

post training mean knowledge score of participants of all three subjects were found significant ($p < 0.01$) statistically. This is in conformity with the study of Singh *et al.* (2010) wherein they found that the 't'-values of difference between pre- and post-training mean knowledge scores of all the practices of bee keeping were significant ($p < 0.05$). In practices such as breeding of honey bees and bee enemies they had comparatively little pre-training knowledge but after training significant gain in level of knowledge was achieved in all the practices.

TABLE 6: Division cum Subject wise pre and post knowledge gain among MPEOs

Sn.	Subject	No. of Trainees	Total score	Mean Knowledge score		Mean difference	'Z'-cal Value	't'- cal value
				Pre training	Post training			
Uravakonda Division								
1	Crop production	n=39	17	11.23	13.68	2.45	6.51**	-
2	Crop protection	n=39	11	7.13	8.63	1.5	3.76**	-
3	Allied subjects	n=39	26	14.57	16.76	2.19	3.73**	-
Rayadurg Division								
1	Crop production	n=20	17	10.35	13.45	3.10	-	4.97**
2	Crop protection	n=20	11	6.5	8.85	2.35	-	5.10**
3	Allied subjects	n=20	26	14.65	17.55	2.90	-	4.44**
Kalyandurg Division								
1	Crop production	n=36	17	9.52	13.61	4.09	12.50*	-
2	Crop protection	n=36	11	6.02	8.52	2.5	6.28**	-
3	Allied subjects	n=36	26	14.13	18.02	3.89	5.16**	-

**significant at 0.01 level of probability **0.01 'z' - critical value - 1.95, **0.01 't' - critical value - 2.09

In order to further strengthen the results of this study the significance of knowledge gain was tested in terms of agriculture division cum subject wise among the participants. In this analysis the significant knowledge gain was found in pre and post induction training programmes in aspects of crop productions, crop protection and allied subjects among the trainees in all the three agricultural divisions of Rayadurg, Uravakonda and Kalyandurg. In order to test the effectiveness of the induction training statistically, 'z' or 't' tests were applied based on the sample size to find out, whether there existed any significant difference between the pre-exposure and post-exposure knowledge. The 't' and 'z'-values of difference between pre and post training mean knowledge

score of all the agricultural divisions along with subject wise were significant ($p < 0.01$).

Feedback on induction training programme

Feedback is inevitable in any transfer of technology mechanism to take corrective measures, so that the same can be run successfully for long term. The feedback regarding various aspects of the induction training was collected in three quantum (High, medium and low with 3, 2 and 1 scores) from the participants to assess the practical utility of the induction training in executing their responsibilities in day to day professional life. The statement wise analysis of feedback on the induction training was furnished in Table 7.

TABLE 7: Feedback of MPEOs on induction training programme

S.No.	Feedback characteristic	Weighted mean score (%)	Rank
1	Usefulness in enhancing knowledge	81.86	I
2	Relevancy and appropriateness of the content	79.52	II
3	Stimulation of inquisitiveness and curiosity	75.37	III
4	Rational and practical presentation	71.58	IV
5	Appropriateness of the information to the field condition	68.10	V
6	Credibility of the information	66.94	VI
7	Improved self confidence	65.25	VII
8	Easy to understand and augmented learning experience	62.58	VIII

Majority of the respondents were 'satisfied' regarding usefulness in enhancing knowledge (81.86%), Relevancy and appropriateness of the content (79.52%), stimulation of inquisitiveness and curiosity (75.37%), rational and practical presentation (71.58%), appropriateness of the information to the field condition (68.10%), Credibility of the information (66.94%), Improved self confidence (65.25%) and Easy to understand and augmented learning experience (62.58%). Shankara *et al.* (2014) in their study also found that majority of the trainees expressed that they got more information on mandates of bhuchetana programme was coincides with the relevancy and appropriateness (79.52%) of the content in this study. This implies that the trainers of Krishi Vigyan Kendra and from other institutes were well versed with information and had collected enormous information to train the trainees more effectively. Usefulness, relevancy, improved self confidence and suitability of the content was also found in the study of Meena *et al.* (2014) in their study on effectiveness of multimedia digital video disk on knowledge gain of improved dairy farming practices in Haryana.

CONCLUSION

The above findings clearly indicate that the KVK is realising the objectives of the training programmes to extension functionaries in terms of achieving desired outcomes. The study focuses on testing the effectiveness of induction training on disseminating the information about agriculture and allied disciplines. With the changing environment trend in various agricultural sectors, information and knowledge has increasingly become an important factor of production. The effective dissemination of information on crop production, crop protection, veterinary, horticulture and home science is essential to expand the reach of demand driven services as well as to improve the quality of service delivery. The

induction training was proved effective in transmitting the relevant information as the overall mean knowledge gain with regard to agriculture and allied areas was 8.11. The significance at 1 percent level of significance between the pre and post knowledge were highly significant ('z' - 11.24**). The result of feedback shows that majority of the respondents were satisfied 'regarding usefulness in enhancing knowledge, suitability of the information to the field situation, improves self-confidence, arousal of curiosity and interest, relevancy and appropriateness of the content, completeness, credibility, simplicity and logical presentation of information.

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