RESEARCH NOTE

A Test to Measure Knowledge of Extension Personnel on Farmers' Group Dynamics

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ABSTRACT

After the extension reforms made through Agricultural Technology Management Agency (ATMA) the role of extension personnel changes from expert to facilitator. Under such situation extension personnel should be knowledgeable on group dynamics to facilitate the farmers' group. Non availability of test to measure the knowledge level of extension personnel on farmer's group dynamics demands a test. So an attempt was made to develop a test for the purpose. Item analysis was done to develop the test. The test consists of nine items and can be applied to extension personnel of agriculture and line departments.

Key Words: *Knowledge test; Extension personnel; Group dynamics; Facilitation;*

Group approach of extension is a way of disseminating information and technologies on agricultural and rural development through groups of farmers. It aims to develop local skills and empower local people to solve their own problem. Under extension reforms the group approach of extension is implemented through Agricultural Technology Management Agency (ATMA). After introduction of group approach of extension through ATMA, the role of extension personnel changes from expert to facilitator to facilitate farmers' group. Facilitation is a process of helping a group to accomplish its goals (*McNamara, 1997*). Facilitation suggests making thing easier. *Davis (2002)* described that facilitation refers to managing and maintaining a group process. The primary focus of a facilitator is on 'how' things are going in the group. The extension personnel as a facilitator should not know only the group members but also the ways in which they affect each other in the group. Most of the programme under ATMA is being done in groups through Farmers' Interest Group (FIGs), Self Help Groups (SHGs) and Community Interest Groups (CIGs) etc. Therefore, extension personnel must know the dynamics of the farmers' group to make it effective. So an understanding of group dynamics is essential for the extension personnel and they should acquire knowledge on group dynamic to facilitate farmers' group. In this context, it is important to measure the knowledge level of extension personnel on group dynamics. Therefore, an attempt has been made to develop a test to measure the knowledge of extension personnel on farmers' group dynamics.

METHODOLOGY

In the present study knowledge level of extension personnel on group dynamics refers to the level of knowledge possess by an individual on different characteristics of a group, the way group and its members act and react to changing circumstances. For that purpose a test was developed. A test is a set of questions, each of which has a correct answer, to which the people respond (*Roy and Mondal, 1999*).

The test was developed by following the process of item analysis. Initially after reviewing literatures 25 items were collected. Items were selected on the basis of their apparent lack of ambiguity, simplicity and representativeness. To assess the relative accuracy of the items, these were given to 10 judges. The raters were asked to evaluate each item according to how accurate or inaccurate they thought it was. Opposite each item was a 7- point scale anchored by the word

'accurate' or 'inaccurate'. If a rater felt quite strongly that an item was accurate (or inaccurate) he/ she was requested to check the extreme right (or left) space. A check measure the middle indicated a less strong rating. If the rater could not make a rating he/ she was instructed to draw a circle in the item's serial number.

After the ratings, each item was scored from 1 to 7 with the extreme 'accurate' space receiving a score of 7. Items were coded '0' when a rater was unable to rate them and those scores were not included in the analysis. A critical ratio was calculated for each item, using all scores from '1' to '7'.The critical ratio is expressed as

$$\text{Cr, t} = \frac{(\bar{x} - M_h)}{\sqrt{\frac{s^2}{N}}}$$

Where $\overline{X}$ is the observed mean

M_h is the hypothesised mean

$\sqrt{\frac{s^2}{N}}$ is the standard error of the mean

It follows t distribution with N-1 degree of freedom. Fifteen items were found to be significant and retained for item analysis.

The selected 15 items were administered to 40 extension personnel. They were requested to give answer for each item whether it is 'true' or 'false'. After a gap of 15 days 35 respondents returned the answer sheets. Scores of '0' and '1' were given to incorrect and correct answers respectively. The total score for each respondent was calculated. Afterwards, the total scores of all the respondents were arranged in descending order. As suggested by *Singh (2006)*, 27 per cent of top group were constituted as high group and 27 per cent of the bottom group as low group. In item analysis, the first step is to find out the difficulty value of the item or the index of difficulty of an item. Index of difficulty of an item is defined as the proportion or percentage of the individuals who answer the item correctly. The index of difficulty of an item was calculated on the basis of following formula,

$$P = \frac{R}{N}$$

Where,

P = the index of difficulty

R = the number of respondents who pass the item

N the total number of respondents who take the test.

The determination of the index of discrimination, also known as the item validity index is another important aspect in item analysis. *Bean (1953)* defined this index as the degree to which the single item separates the superior from the inferior individuals in the trait or group of traits being measured. *Marshall and Hales (1972)* suggested a very simple and quick method of determining the index of discrimination. They have called this index as Net D index of discrimination. They have defined Net D as an unbiased index of absolute difference in the number of discriminations made between the upper group and the lower group- it is proportional to the net discrimination made by the item between the groups. This method is directly based upon the difference between the proportion of correct answer of the top 27 per cent and bottom 27 per cent individuals (*Singh, 2006*).The formula for calculating index of discrimination (Net D) for the present study was

$$\text{V} = \frac{R_u - R_L}{N_U}$$

Where

V = the Net D

R_U = the number of the individual giving correct answer in the upper group.

R_L = the number of the individual giving correct answer in the lower group

N_U = the number of examinees in the upper group (which is equal to the lower group)

After calculating index of difficulty and index of discrimination finally 9 items were selected for the knowledge test. The item with index of difficulty ranges from 0.3 to 0.7 and index of discrimination was 0.2 and above were selected for the knowledge test.

Reliability of the scale : Reliability is the accuracy or precision of a measuring instrument (*Kerlinger, 2004*). The reliability of the test was calculated by Kudar- Richardson formula (K-R_{20}) and it was found as 0.71. The value is acceptable for the test.

Validity of the scale: Validity of the test in terms of content validity was judged. Content validity is the representativeness or sampling adequacy of the content the substance, the matter, the topics- of a measuring instrument (*Kerlinger, 2004*).Content validity of the test was found satisfactory since it was based on various literatures and subjected to judges rating.

RESULTS AND DISCUSSION

After the extension reforms through ATMA, extension personnel are involving in organising and facilitating farmer's groups like SHGs, FIGs and CIGs etc. Therefore building the capacity of extension personnel as facilitator is urgently needed to make the reforms effective. For that purpose we need research based information for developing facilitators. The Policy Frame Work for Agricultural Extension also mentions that a long term training plan should be developed by each state based on a thorough skill gap analysis. A massive campaign will need to be launched for skill up gradation and capacity building of extension personnel as facilitators. Knowledge on group dynamics is essential prerequisite for facilitators. In this case the present test (Table 1) can help the policy makers, training institutes etc to find out the existing level of knowledge of extension personnel on farmer's group dynamics. Based on the test results strategy could be chalked out for providing such knowledge to extension personnel to make them better facilitators.

CONCLUSION

Under ATMA, grass root level extension personnel are responsible for organising and facilitating farmer's groups like SHGs, FIGs and CIGs etc. Therefore, building the capacity of extension personnel as facilitator is urgently needed to make the reforms effective. The Policy Frame Work for Agricultural Extension also mentions that a long term training plan should be developed by each state based on a thorough skill gap analysis. A massive campaign will need to be launched for skill up gradation and capacity building of extension personnel as facilitators. In this regards present test can be used by the policy makers, trainers etc. to design need based training on group dynamics to make them facilitators.

Table 1. Item selected for knowledge test of extension personnel on farmers' group dynamics

S. No.	Item	Correct Response	Index of Difficulty	Index of Discrimination
1	Addressing members by their preferred name decreased participation.	False	0.7	0.6
2	A group member is more productive when he feels that he has access to relevant information of the group.	True	0.6	0.3
3	Informal communication between members is not important in achieving group consensus.	False	0.7	0.4
4	Leader's subject matter knowledge is not important to make a group effective.	False	0.3	0.2
5	Members who understand the basic purpose of the group . participate more	True	0.7	0.6
6	Standard of the farmers' group may be varying according . to the activities	False	0.3	0.2
7	Every farmer's group should know clearly about the roles . of each member	True	0.7	0.7
8	It is not necessary to evaluate its performance regularly by the group.	False	0.7	0.7
9	In farmers' group, communication of personal feelings does not occur openly.	False	0.6	0.7

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