A Scale to Measure Performance of Village Resource Centres on Farming Activities in Karnataka

Shamna. A[1], K. Narayana Gowda[2], N.S. Shivalinge Gowda[3] and S.V. Suresha[4]

1. Scientist (Agril. Ext), Central Research Institute for Jute and Allied Fibres, Barrackpore, Kolkata
2. Vice-chancellor, UAS, Bangalore. 3. Prof. & IFFCO Chair, Dept. of Agril. Extension,
4. Coordinator, Bakery Training Unit, UAS, Bangalore.
Corresponding author e-mail: shamnaext@yahoo.co.in,

ABSTRACT

Carrying information on the latest agriculture, health and concerning issues to rural people is an important task in the process of development. Indian Space Research Organisation has taken the initiative of establishing village resource centres through out the country. Through this two way audio video interactive mode, farmers from remote areas can interact directly with the experts. The present study was conducted to develop a scale to measure the performance of Village resource Centres on farming activities. Karnataka state was selected for the study as maximum number of such centres are being established in Karnataka. The learning atmosphere in a village resource centre was studied through participant observation. Based on the components identified and vast review of literature items under scale was selected through judges opinion and discussion with sixty experts all over India. The needed scientific procedure was followed in the development of a scale to measure the performance of VRCs on the farming activities. The scale was administered using Likert's procedure and study revealed that the performance of VRC on farming activities in Karnataka was high. The scale developed for the purpose can be used in measuring similar modern method of interactive communication with needed modification.

Key words: *Information; Scale; Communication; Village Resource Centres;*

The greatest challenge faced by the Indian planners is, how to reach the rural people effectively to make them take advantage of the benefits of planned development programmes. Weakening of public extension system, particularly at the grass root level and unwillingness of many personnel to work in the rural areas is also an issue of concern in the recent years. If Indian villagers have suffered over the years, it is partly due to lack of timely information support system. The rural people of India need to be provided with the latest farm technology at a shortest span of time to be in profitable farm business.

Indian Space Research Organisation (ISRO) has successfully established Village Resource Centres (VRCs) across the country in collaboration with identified host organizations/ institutions to take first hand information to the grass root level people. The VRC is a totally interactive VSAT (Very Small Aperture Terminal) based network, where teaching, learning and interaction is done through personal computers networking. These nodes can be further extended using other technologies like Wi-Fi, Wireless and Optical Fibre. These extensions may serve as local clusters around the areas where the VRC is located.

Around 466 VRCs are set up in the country in association with Universities, NGOs, Trusts, State and Central agencies. In Karnataka alone there are 58 VRCs including seven Expert Centres and another 136 VRCs are in pipe line which is being planned to be established at Raitha Samparka Kendras and Krishi Vigyan Kendras.

The vision of Government of India and ISRO is to establish one VRC for each panchayat in the country by the end of the eleventh plan period and crores of money is being earmarked for the purpose. One of the major portfolios of VRCs is to provide information to the farmers who are the pillars of our nation, through tele agriculture, tele health, tele medicine and so on.

University of agricultural Sciences, Bangalore established the Expert Centre for providing Tele Agriculture Services to the farmers in Karnataka on 26th April 2007. The centre had successfully completed two years covering various programmes on improved technology on field crops, fruit crops, vegetables, flower crops, organic farming, integrated nutrient management, integrated pest management, fishery, poultry, harvest and post harvest technology, value addition, bio fertilisers and weather forecast which was found to be very useful to farmers at the receiving end. It is important to know how the farmers are satisfied with the programmes given by VRCs on farming activities. Being a unique innovative information support system designed and implemented for the first time in the country, it is appropriate to know how far the VRCs are useful to the farming community.

An appropriate and comprehensive device for measuring the Performance of VRCs on farming activities was very much needed for a quality research and analysis. As the concept of VRC is gaining momentum it has been visualized that this variable has significant importance in this study and also in future. Hence, it was decided to develop a scale to measure the Performance of VRCs on farming activities.

METHODOLOGY

Through participant observation, the learning situation in Village Resource Centres (VRCs) are analysed for a period of one year. The learning which occur through VRCs were very similar to a non formal education. One important factor observed is the role of the facilitator who is the connecting link between all the elements in a learning situation like Resource Person, Receiver, Subject matter, Teaching aids and Physical facilities. The facilitator facilitates learning by establishing a positive learning environment both physically as well as emotionally and thus he acts as a catalyst for learning. Hence it was decided to evolve a learning situation model which is suitable to the VRC situation i.e. non-formal type of education. This model is a slight modification of the learning situation model developed by *Leagans (1961)*. Learning situation with six elements like Facilitator, Resource person, Receiver, Subject matter, Physical facilities and Teaching aids is prominent in VRCs where the farmers / extension personnel receive information from experts in a lecture mode followed by interaction mode. The active functioning of all these elements in the functioning of VRCs are further ascertained by judges opinion and discussion with Sixty experts all over India.

In the present context, some statements were developed under the frame work of the identified learning situation elements to measure the performance of VRCs on farming activities. The operational definition of each of the elements of the learning situation is provided below.

(i) *Facilitator:* Facilitator is a person who enhances learning by establishing and maintaining a positive learning environment. Facilitator maintains a direct relationship with the other elements in the learning situation like user, resource person, subject matter, teaching materials, and physical facilities.

(ii) *Receiver:* Users are persons who want and need to learn and get the ultimate benefit from the non formal education.

(iii) *Resource Person:* A Resource Person is a subject matter specialist specialized in a particular subject matter area who provides information to users and is confident in presenting the same and has clear cut and purposeful teaching objectives.

(vi) *Subject matter:* Subject matter is the content (topic) selected for learning which is useful to users and is discussed with them in a comprehensible way.

(v) *Teaching aids:* Comprised of appropriate instructional materials, equipments and aids suitable to the topic selected for non formal education.

(vi) *Physical facilities:* The presence of appropriate physical environment that facilitates learning.

Collection of items: The various items under each component have been formulated after thorough observation of the functioning of the Village Resource Centres and the programmes given through it. A vast review of literature of similar programmes was also carried out and as a result a list of 78 items was prepared which comes under different components. The items thus prepared were screened further for their appropriateness, simplicity, clarity and correctness based on procedure advocated by *Edwards (1957)* and finalized the list. Out of 78 items collected initially, 69 items were retained after editing.

Selection of judges to get opinion about the scale items: A total members' list of agricultural extension experts and rural development experts, who had an overview on Subject matter was sorted out. Thereafter, a list of 120 judges was prepared.

Judges' ratings / opinion: The judges' rating was primarily used to ascertain the aspects and items under various categories. The selected 69 statements were sent to 120 judges through self - addressed envelope, who were from various parts of the country. The judges were requested to evaluate these aspects on a three point continuum - *'Most Relevant' (MR), 'Relevant '(R)* and *'Less Relevant' (LR).* A score of three, two and one were given for MR, R and LR respectively. Out of 120 judges, 71 judges responded. Among them, those who fulfilled the following criteria were retained: [1] Completeness [2] Response within the time frame. Accordingly, eleven responses were rejected, which were not complete. Thus, the relevancy data furnished by 60 judges were taken into consideration for arriving at the selection of items for the scale.

Selection of items for the final scale: The responses obtained from judges were tabulated for each item under three categories and appropriate score was given for each item. The following procedure was followed for consolidating the scores given.

The ratings for each response by the judges were utilized for the calculation of 't' values under each item. The response to each statement was considered as a rating score and the scores were summed up for all statements.

From the total score, the frequency distribution of scores was considered, which was based on the responses to all statements. Then, 25 per cent of the subjects with the highest total score and 25 per cent of the subjects with the lowest total score were taken, which provided the criterion groups to evaluate the individual statement. The relevancy test (RT) was carried out using the formula:

$$RT = \frac{\left[(MR \times 3) + (R \times 2) + (LR \times 1)\right]}{69 \times 3}$$

where,

MR = Most Relevant

R = Relevant

LR = Least Relevant

If the value of RT was more than 0.75 per cent for a statement, it was accepted.

The 't' value for each item was worked out using the formula:

$$t = \frac{\bar{X}_H - \bar{X}_L}{\sqrt{\frac{\sum X^2 H - \left(\sum XH\right)^2 \times \sum X^2 L \left(\sum XL\right)^2}{n - (n-1)}}}$$

where,

$\bar{X}_H$ = the mean score on a given statement for the higher group

$\bar{X}_L$ = the mean score on a given statement for the lower group

n = the number of subjects in each group

t = sig. (>1.96)

t = NS (<1.96)

where,

$$\sum (X_H - \bar{X}_H) = \frac{\sum X^2 H - \left(\sum XH\right)^2}{n}$$

$$\sum (X_L - \bar{X}_L) = \frac{\sum X^2 L - \left(\sum XL\right)^2}{n}$$

The value of 't' is a measure of the extent to which a given item differentiates between the high and low groups. Based on the table value (1.96), any 't' value equal to or greater than 1.96 is considered as indicating the average response and which differentiates high and low groups statements significantly. So, the items / statements with 't' value of equal or greater than 1.96 were selected for the scale items. Thus, 60 out of 69 statements were selected for inclusion in the final scale on the basis of their 't' values (Table 1).

Reliability of the scale: Reliability, in its true sense, refers to precision of the scale constructed for any purpose. It is otherwise called the extent to which repeated measure produces the same results. In any social science research, newly constructed scale has to be tested for its reliability before it is used. In the present study, the reliability of performance of VRCs on farming activities scale was determined by Brown Prophecy Formula, which is otherwise called as split – half method.

The scale was administered to 30 respondents in the non – sample area. The scale was divided into two halves based on odd and even numbered statements and the two sets of scores obtained from the same

Table 1. Statements to measure the Performance of VRCs on farming activities

S.No.	Statements
A. Facilitator	
1.	Facilitator was present well ahead of the time.
2.	Facilitator ensured the start of programme on time.
3.	An overview of the program was given by facilitator.
4.	Resource person was not introduced by the facilitator before the start of the programme.
5.	Introduction of the subject motivated me to actively participate in the programme.
6.	Difficulties that one encounters for active participation during the programme were not attended by facilitator.
7.	Facilitator supplemented relevant points at an opportune time.
8.	Impact points on the topic were summarized by facilitator.
9.	Due acknowledgement to the resource persons was extended
10.	Facilitators close the programme on time.
11.	Facilitator takes stock of relevant points for future consideration.
B. Reciever	
12.	The information given through VRC was very useful for the farming activities under taken by me.
13.	The information received through VRCs were timely
14.	The information presented helped me to take right decisions.
15.	The information given through VRCs were not persuasive.
16.	The answers provided for questions were satisfactory.
17.	On the spot solution was provided to specimen or sample shown.
18.	Time allotted for question and answer session was not sufficient.
19.	The timing was convenient for me to attend the programme.
20.	The farming programmes through VRCs helped me to gain more knowledge about my farming and allied activities.
21.	The VRC programme on specific farming activities helped me to adopt the same with confidence.
22.	The Programmes through VRCs helped to improve profit margin from my farming activities.
23.	The number of programmes on farming activities conducted by VRCs is not satisfactory.
24.	I am completely satisfied with the topics related to farming which I received through VRCs.
C. Resource Person	
25.	Expert was present on time
26.	Expert has ensured the required teaching materials well in advance.
27.	The Expert was quite confident in presenting the subject matter.
28.	Expert had clear cut and purposeful teaching objectives.
29.	The communication of the Resource Person(s) was clear.
30.	The Resource Person was not interested about the learner and subject matter.
31.	Resource person had creative thinking in attracting and holding the interest of farmers.
32.	Expert had not used suitable teaching aids.
33.	Resource Person was skillful in using teaching aid.
34.	Resource Person was able to relate the subject matter with suitable example by matching local requirement.
35.	Expert interacted with farmers informally.
36.	Resource Person encourages the participation of the people.
37.	Resource Person could manage the time effectively.
38.	Presentation was in pace with audience composition.
39.	Expert covered complete information in relation to the topic earmarked.
D. Subject matter	
40.	Subject matter chosen was timely.
41.	Message was easy to understand.
42.	Technical words were translated to local language
43.	Subject matter was logically organised.
44.	All relevant photos, live specimens were matching with subject matter.
45.	Subject matter was not pertinent to farmers' needs.
46.	General information provided was attracting audience attention.
E. Teaching Aids	
47.	Teaching aids used were appropriate to the topic .
48.	The photos and objects shown in the Programme were visible and clear.
49.	The photos were presented with proper size.
50.	Overcrowded appearance in the visual discouraged the viewer.
51.	Live specimens were shown during presentation.
52.	Teaching aids used created more interest in me to participate in the programme.
53.	More than one teaching aid was used.
F. Physical facilities	
54.	Seating arrangement was comfortable.
55.	Visibility was ensured to all.
56.	Equipment in the VRC are in good working condition.
57.	Equipment are not user friendly.
58.	Good ventilation and lighting were provided.
59.	Cleanliness was well attended.
60.	We could attend the programme with full concentration as there was no physical barrier/disturbances/noises.

respondents were correlated. This was calculated by the following formula:

$$\frac{r_1}{II}\frac{1}{2} = \frac{\sum xy - (\sum x)(\sum y)}{\sqrt{[N\sum x^2 - (\sum x)^2][N\sum y^2 - (\sum y)^2}}$$

where,

x = odd score

y = even score.

The reliability test value was calculated as 0.8862 and the scale is found to be reliable as the reliability value was more than 0.75.

Validity of the scale: In the present study, content validity of the scale was established in two ways. Firstly, the scale items selected for inclusion in the scale was based on extensive discussion with experts, review of literature. Secondly, the opinion of the judges was obtained to find out whether the components and items suggested were suitable for inclusion in the scale or not.

Administering of the scale: The scale for measuring the performance of village resource centres on farming activities was administered based on *Likert (1932)* procedure. Each item in the scale was provided with a five point continuum and the response categories were: 'Strongly Agree', 'Agree', 'Undecided', 'Disagree' and 'Strongly Disagree'. The considered item was scored in the above said pattern, which will receive 5,4,3,2, and 1 score, respectively. The cumulative score of each respondent for all the statements was considered as the total performance score of the Village Resource Centre as perceived by individual farmer. The minimum possible score was 60, whereas the maximum possible score was 300. The performance of VRCs on farming activities were measured using the scale developed. The data was collected from 200 farmers from ten Village Resource Centres across Karnataka state. The minimum score indicated by the respondents was 245 and the maximum score was 278. The mean score was found to be 260.8 and the mean score in percentage was 86.9. This indicated that the performance of VRCs on farming activities was high.

CONCLUSION

The VRCs are promoted in the recent years (2004 onwards), the number runs to 466 across the country as on Dec 1st 2008. The Government of India plans to establish one VRC for each panchayat in the country in view of aforesaid importance. In order to provide a sound footing to the establishment as well as functioning of VRCs in the country, the scale developed will be useful for measuring performance of VRCs across the country. Findings of the present study would be of immense importance in improving the effectiveness of the system.

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