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KNOWLEDGE OF EXTENSION TEACHING METHODS AMONG EXTENSION PERSONNEL IN DEPARTMENT OF AGRICULTURE

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ABSTRACT

The study was conducted in Dharwad and Gadag districts of Karnataka. Ex-post facto research design was employed for study. Agriculture Officers and Assistant Agriculture Officers working in Department of Agriculture were selected as the respondents for the present investigation. The total sample size for the study constitute 90 extension personnel. Findings of the study revealed that more than three fourth of the extension personnel had good knowledge regarding the purpose of all selected extension teaching methods. Majority of extension personnel (51.11 %) had high knowledge about the selected extension teaching whereas, 32.22 per cent had medium knowledge level and 16.67 per cent had low knowledge level. Out of eleven independent variables studied, two variables namely, educational qualification and achievement motivation were positively and significantly correlated with the knowledge of extension teaching methods by extension personnel at one per cent level of significance while, years of experience, job involvement and job satisfaction were positively and significantly correlated at five per cent significant level. Other independent variables including age, gender, participation in training, perceived workload and self confidence did not show any significant relationship with knowledge of extension teaching methods by extension personnel.

Keywords: *knowledge, extension personnel, extension teaching methods*

INTRODUCTION

Agricultural extension organizations are assigned the most crucial responsibility of educating and disseminating the recent agricultural technologies among the farmers using different extension teaching approaches like individual, group and mass contact methods (Khan and Akram, 2012). The combination of two or more extension teaching methods is much more effective to create attention, arouse interest and convince the people to take action for their satisfaction (Gupta, 2012 and Vaghela et al., 2019). Extension agents should be trained in modern teaching methods so that he can use suitable teaching methods to the farmers (Kumbhar *et al*., 2015). The type and size of the audience, teaching objective, subject matter, extension organization's stage of development, size of extension staff, availability of communication media, relative cost of the method and the extension worker's familiarity and proficiency with a variety of extension teaching methods are all the factors to be considered while, selecting extension teaching methods (Reddy, 2006). Extension personnel act as a dynamic link between farmers and research personnel (Pratik and Vinaya, 2022). Primarily, an extension agent must know "what methods are available to him", in the second place, he should know, "when to use a given method" and finally "he should become efficient in using each method". Knowledge of extension personnel about the diverse extension teaching methods is a crucial factor that decides the appropriate selection of extension teaching methods which help to initiate the thought process of the people who are taking the information whereas the inappropriate selection of extension teaching methods can hinder the line of thought of the learners. Therefore, it is important for extension personnel to consider the range of extension teaching methods and to choose the precise method to meet the needs of the program. Keeping this in view, the present investigation was carried out with the objective to analyse the knowledge of extension teaching methods by extension personnel of department of Agriculture

OBJECTIVE

To analyse the knowledge of extension teaching methods among extension personnel in department of agriculture

METHODOLOGY

The present study was conducted during the year 2021-22 in Dharwad and Gadag districts of Karnataka. *Ex-post facto* research design was used for the study. The sample for the present investigation constitute Agriculture Officers (AOs) and Assistant Agriculture Officers (AAOs) working in the Department of Agriculture. From Dharwad district 30 AOs and 15 AAOs were selected randomly. Similarly, from Gadag district 30 AOs and 15 AAOs were selected randomly. Thus, the total sample size constitute 90 respondents. In light of the objectives of the study, knowledge of extension teaching methods was the dependent variable and variables like age, gender, educational qualification, years of experience, participation in training, job involvement, job satisfaction, achievement motivation, perceived workload and self confidence were studied as independent variables. A well structured and pre-tested interview schedule was employed to collect the data through personal interview method. The data collected were tabulated and analysed using appropriate statistical tools like frequency, percentage, mean, standard deviation and correlation.

Based on the in-depth review of literature, a list of 59 statements on objectives/purposes of the selected extension teaching methods were identified. To arrive at important statements for inclusion in the study, the relevancy of statements were worked out.

The list of statements on objectives/purposes of extension teaching methods were administered to 40 judges comprising extension specialists of State Agricultural Universities and scientists working in various ICAR institutes of India.

The judges were requested to examine the statements for relevancy and to include additional statements, if necessary. They were asked to evaluate the statements critically and indicate the relevancy of each statements on a three point continuum ranging from more relevant (MR), relevant (R) and not relevant (NR) with the weightages of 3, 2 and 1, respectively. The judges were also requested to make necessary modification and addition or deletion of statements if they desired so. Out of 40 judges 25 responded in time. From the data so gathered Relevancy Percentage (RP), Relevancy Weightage (RW) and Mean Relevancy score (MRS) were worked out for 59 statements by using the following formulae.

Using these three criteria the statements on purpose of selected extension teaching methods were screened for their relevancy. Accordingly, statements having relevancy percentage of more than 75.00 per cent, relevancy weightage of more than 0.75 and mean relevancy score of more than 2.68 were considered for the final selection of statements. By this process, 49 statements were retained and 20 statements were added for the newly selected extension teaching methods after relevancy test. Thus, total 69 statements were finally selected for the study.

RESULTS AND DISCUSSION

Knowledge of extension teaching methods possessed by extension personnel

The results in Table 1 depicts the knowledge of extension teaching methods possessed by extension personnel.

Knowledge of individual contact methods possessed by extension personnel

A careful examination of the results in Table 1 with respect to the knowledge of individual contact methods reveals that a large majority of extension personnel had knowledge that the purpose of farm and home visit is to obtain and/or give firsthand information of farm and home (96.67 %), to solve specific problems and to build up close relationship with the farmer (95.56 %) and to teach skills and to change the attitude of farmer/home maker (95.56 %). Further, large majority of extension personnel also had knowledge that the purpose of farmer's call/phone call is to get quick solution to problems related to farm and home (97.78 %), to get quick information on newly developed improved technologies (96.67 %) and to ensure timely supply of inputs and services (85.56 %). The results also revealed that large majority of extension personnel had knowledge that purpose of Short Message Service (SMS) is to send messages related to agro advisory, weather, market and other agriculture related information timely and quickly (95.56 %).

Knowledge of group contact methods possessed by extension personnel

The data presented in Table 1 on the knowledge of group contact methods indicates that cent percentage of extension personnel (100.00 %) had knowledge that the purpose of result demonstration is to show the results and applicability of a newly recommended practice in farmer's own situation followed by 95.56 per cent of them had knowledge that the purpose of result demonstration is also to motivate groups of people to adopt a new practice by showing its superior results. In addition, most of the extension personnel knew that the purpose of method demonstration is to show how to carry out an entirely new practice or an old practice in a better way and to teach skills (93.33 %) and to show the local applicability of practice (88.89 %). Further, large majority of extension personnel also had knowledge that the purpose of group meeting is to create a favourable climate for discussion and better understanding of the problem by pooling knowledge and experience of a number of persons (100.00 %), to prepare people for other methods of extension work (92.22 %) and to find reaction of the people to certain activities (96.67 %).

Table 1: Knowledge of extension teaching methods possessed by extension personnel (n=90)

Sr. No.	Extension teaching methods	Purpose of extension teaching methods	Yes	
			f	%
1	**Individual contact methods**			
	i. Farm and Home Visit	To obtain and/or give firsthand information of farm and home	87	96.67
		To solve specific problems and to build up close relationship with the farmer	86	95.56
		To teach skills and to change the attitude of farmer/home maker	86	95.56
	ii. Farmer's call/ Phone call	To get quick solution to problems related to farm and home	88	97.78
		To ensure timely supply of inputs and services.	77	85.56
		To get quick information on newly developed improved technologies	87	96.67
	iii. Short Message Service (SMS)	To send messages related to agro advisory, weather, market and other agriculture related information timely and quickly	86	95.56
2	**Group contact methods**			
	i. Result demonstration	To show the results and applicability of a newly recommended practice in farmer's own situation	90	100.00
		To motivate groups of people to adopt a new practice by showing its superior results	86	95.56
	ii. Method demonstration	To show how to carry out an entirely new practice or an old practice in a better way and to teach skills	84	93.33
		To show the local applicability of practice	80	88.89
	iii. Group meeting	To create a favourable climate for discussion and better understanding of the problem by pooling knowledge and experience of a number of persons	90	100.00
		To prepare people for other methods of extension work	83	92.22
		To find reaction of the people to certain activities	87	96.67
	iv. Training	To impart need based skills to a small group of farmers	90	100.00
		To motivate people to adopt new practices	90	100.00
		To update the audience about latest technologies	85	94.44
	v. Field day/ Farmers' day	To convince the participants about the practical applicability of the practice in their own situations	86	95.56
		To reinforce previous learning about the practice.	84	93.33
		To convince the participants by comparing the demonstration results with check plot results	90	100.00
	vi. Study tours/ Exposure visits	To show the accomplishments of other villagers, progressive farmers, universities etc	90	100.00
		To induce the spirit of healthy competition by showing the accomplishments in other villages, progressive farmers field etc	87	96.67
		To impress the group about the feasibility and utility of practice/ technology	87	96.67
	vii. Lecture method	To teach large group of farmers where the individuals have some common background of information and experiences	86	95.56
		To cover large quantity of information in a given time	82	91.11
	viii. Seminar	To present the subject in-depth under the guidance of the experts	85	94.44
		The members of the audience discuss the subject to which answers are not available	84	93.33
	ix . Farmers Field School (FFS)	To provide training in agricultural techniques and develop skills to empower farmers	82	91.11
		To provide skills in crop cultivation and resource management using sustainable agricultural production methods such as IPM	82	91.11
	x. Workshop	To provide short term intensive learning	84	93.33
		To teach new skills to groups of farmers	90	100.00

Sr. No.	Extension teaching methods	Purpose of extension teaching methods	Yes	
			f	%
3	**Mass contact methods**			
	i. Farm publications			
	a) Leaflet	To provide specific information on a single idea	90	100.00
		It is generally printed as and when needed and distributed free of cost	81	90.00
	b) Folder	Folder deals with more than one idea and gives all essential information in a proper sequence	85	94.44
		It is printed as and when needed and generally distributed free of cost	83	92.22
	c) Pamphlet	To disseminate comprehensive information in greater deal about a particular topic	84	93.33
		Message is presented in complete form at greater length compared to a folder	85	94.44
	ii. Newspaper	To create general awareness about the improved cultivation practices among the farmers	90	100.00
		To publish news on extension activities and success stories of the farmers	82	91.11
		To give emergency and timely information on weather and pest and disease outbreak etc	82	91.11
	iii. Radio	To create general awareness about the improved cultivation practices among the farmers	87	96.67
		To stimulate the participation of farmers on other extension activities like krishi mela, exhibition etc	86	95.56
		To give emergency and timely information on weather, pest and disease outbreak etc	82	91.11
	iv. Television	To create general awareness about the improved cultivation practices among the farmers	87	96.67
		To show rural people in general, and the farmers in particular, what to do, how to do and with what results	83	92.22
		To give emergency and timely information on weather and pest and disease outbreak etc	84	93.33
	v. Campaign	To create mass awareness about an important problem or felt need of the community	83	92.22
		To induce emotional participation of community as a whole for the adoption of new practice	83	92.22
	vi. Exhibition	To influence people to adopt better practice by arousing interest	85	94.44
		To acquaint people with better standards by teaching facts/showing the processes	85	94.44
		To facilitate information on large number of technologies at a single place	82	91.11
	vii. Krishi mela/ Kisan mela	To convince/show the farmers about the applicability of the improved practices in the field situations	82	91.11
		To remove the doubts, superstitions and unfavourable attitude about new practice	85	94.44
		To provide an opportunity to farmers to interact directly with scientist	83	92.22
		To show case the technologies developed by the host institute and create good will	90	100.00
	viii. Posters	To catch/arrest the attention of the hurriedly passing person towards an idea /subject.	83	92.22
		To quickly communicate message to a large number of people dispersed widely and in remote areas	85	94.44
	ix. Charts	To communicate difficult or dull subject matters in interesting and effective ways	84	93.33
		To help in analyzing a problem/situation or comparing the changes	85	94.44
	x. Models	To communicate reliable idea of the original object when it is impossible to expose the audience to the real life situation	87	96.67

Sr. No.	Extension teaching methods	Purpose of extension teaching methods	Yes	
			f	%
	xi. Mobile applications	To provide latest agricultural information about trends, equipment, technologies and methods being used	85	94.44
	xii. Agriculture portals	To provide information and services relevant to agriculture	86	95.56
4	Social media			
	i. WhatsApp	To share audio, video, photographs related to agriculture technologies	89	98.89
		To share the knowledge about different production practices and government schemes	89	98.89
		To give solutions to specific problems of farmers	89	98.89
	ii. YouTube	To upload and share online videos related to agricultural production technologies and practices	84	93.33
		To upload and share videos and photographs related to agricultural production technologies and practices	82	91.11
	iii. Facebook	To share information related to improved cultivation practices, government schemes and other services through facebook posts	83	92.22
		To share audio, video, photographs related to agriculture technologies	89	98.89

f = Frequency, % = Percentage

The results in Table 1 also implies that cent percentage of extension personnel (100.00 %) knew that the purpose of training is to impart need based skills to a small group of farmers and to motivate people to adopt new practices. Whereas, 94.44 per cent had knowledge that training is also used to update the audience about latest technologies. Cent percentage of the extension personnel (100.00 %) knew that the Field day/Farmers' day is to convince the participants by comparing the demonstration results with check plot results (100.00 %) while, most of them knew that the Field day/Farmers' day is conducted to convince the participants about the practical applicability of the practice in their own situations (95.59 %) and to reinforce previous learning about the practice (93.33 %). Whereas, large majority of them also had knowledge that Study tours/Exposure visits is to show the accomplishments of other villagers, progressive farmers, universities etc (100.00 %), to induce the spirit of healthy competition by showing the accomplishments in other villages, progressive farmers field etc (96.67 %) and to impress the group about the feasibility and utility of practice/ technology (96.67 %).

A careful observation of data furnished in Table 1 also reveals that more than ninety per cent of extension personnel had knowledge that the purpose of lecture method is to teach large group of farmers where the individuals have some common background information and experiences (95.56 %) and to cover large quantity of information in a given time (91.11 %), seminar is used to present the subject in-depth under the guidance of the experts (94.44 %) and the members of the audience discuss the subject to which answers are not available (93.33 %), Farmers Field School (FFS) is used to provide training in agricultural techniques and develop skills to empower farmers (91.11 %) and to provide skills in crop cultivation and resource management using sustainable agricultural production methods such as IPM (91.11 %) and workshop is used to teach new skills to groups of farmers (100.00 %) and to provide short term intensive learning (93.33 %).

Knowledge of mass contact methods possessed by extension personnel

The perusal of data presented in Table 1 relates to knowledge of mass contact methods shows that a large majority of extension personnel had knowledge about the farm publications. The purpose of leaflet is to provide specific information on a single idea (100.00 %) and it is generally printed as and when needed and distributed free of cost (90.00 %). Whereas, folder deals with more than one idea and gives all essential information in a proper sequence (94.44 %) and it is also printed as and when needed and generally distributed free of cost (92.22 %). Further, in pamphlet message is presented in complete form at greater length compared to a folder (94.44 %) and is used to disseminate comprehensive information in greater deal about a particular topic (93.33 %).

The results also revealed that most of the extension personnel had knowledge that to create general awareness about the improved cultivation practices among the farmers

newspaper (100.00 %), radio (96.67 %) and television (96.67 %) could be used. In addition, majority of them had knowledge that television (93.33 %), newspaper (91.11 %) and radio (91.11 %) can also be used to give emergency and timely information on weather and pest and disease outbreak etc. Further, 95.56 per cent, 92.22 per cent and 91.11 per cent, of them had known that radio could also be used to stimulate the participation of farmers on other extension activities like krishi mela, exhibition etc , television could also used to show rural people in general, and the farmers in particular, what to do, how to do and with what results and newspaper could also used to publish news on extension activities and success stories of the farmers, respectively.

A careful examination of Table 1 also shows that an equal percentage of extension personnel (92.22 %) had knowledge that the purpose of campaign is to create mass awareness about an important problem or felt need of the community and to induce emotional participation of community as a whole for the adoption of new practice. While, a large majority of them had known that exhibition is conducted to influence people to adopt better practice by arousing interest (94.44 %), to acquaint people with better standards by teaching facts/showing the processes (94.44 %) and to facilitate information on large number of technologies at a single place (91.11 %). In addition, cent percentage of them had knowledge that Krishi mela/Kisan mela is conducted to show case the technologies developed by the host institute and create good will (100.00 %) while most of them had known that Krishi mela is also conducted to remove the doubts, superstitions and unfavourable attitude about new practice (94.44 %), provide an opportunity to farmers to interact directly with scientist (92.22 %) and to convince/ show the farmers about the applicability of the improved practices in the field situations (91.11 %).

It is also clear from Table 1 that majority of the respondents had known that the purpose of poster is to quickly communicate message to a large number of people dispersed widely and in remote areas (94.44 %) and to catch/ arrest the attention of the hurriedly passing person towards an idea /subject (92.22 %). Charts are used to help in analyzing a problem/situation or comparing the changes (94.44 %) and to communicate difficult or dull subject matters in interesting and effective ways (93.33 %). Models are used to communicate reliable idea of the original object when it is impossible to expose the audience to the real life situation (96.67 %). Further, 94.44 per cent of them had known that the purpose of mobile applications is to provide latest agricultural information about trends, equipment, technologies and methods being used and 95.56 per cent had known that the purpose of agriculture portals is to provide information and services relevant to agriculture.

Knowledge of social media possessed by extension personnel

The perusal of Table 1 indicates that large majority of extension personnel had knowledge that the purpose of WhatsApp is to share audio, video, photographs related to agriculture technologies (98.89 %), to share the knowledge about different production practices and government schemes (98.89 %) and to give solutions to specific problems of farmers (98.89 %). Whereas, 93.33 per cent and 91.11 per cent of them had knowledge that YouTube is used to upload and share online videos related to agricultural production technologies and practices and upload and share videos and photographs related to agricultural production technologies and practices, respectively. Further, large majority of extension personnel had knowledge that the purpose of Facebook is to share audio, video, photographs related to agriculture technologies (98.89 %) and to share information related to improved cultivation practices, government schemes and other services through Facebook posts (92.22 %).

The results in Table 1 also clearly reveals that more than seventy five per cent of extension personnel had knowledge regarding the purpose of all selected extension teaching methods.

Distribution of extension personnel according to the knowledge of extension teaching methods

Table 2: Distribution of extension personnel according to their knowledge of extension teaching methods

(n = 90)

Sr. No.	Category	Frequency	Percentage
1	Low knowledge (<131.11)	15	16.67
2	Medium knowledge (131.11 to 137.53)	29	32.22
3	High Knowledge (>137.53)	46	51.11
Mean: 134.32			S.D: 7.55

The results presented in Table 2 depicts that more than half of the extension personnel (51.11%) had high knowledge about extension teaching methods whereas, nearly one third of them (32.22%) had medium knowledge. A meagre percentage of them (16.67 %) had low knowledge about extension teaching

methods. The possible reasons for the above findings might be that majority of Agriculture Officers and Assistant Agriculture Officers in State Department of Agriculture were Post Graduates and Graduates in Agriculture/Home Science and therefore, had undergone theoretical and practical exposure on extension teaching methods during their degree programmes. In addition, extension personnel might have used different individual, group and mass contact methods as well as social media for disseminating information and new technologies to the farming community. Therefore, through the use of different methods in real life practical situations might have improved the knowledge of Agriculture Officers and Assistant Agriculture Officers on extension teaching methods.

Relationship between independent variables of extension personnel with their knowledge of extension teaching methods by extension personnel

Table 3: Relationship between independent variables of extension personnel with their knowledge of extension teaching methods (n=90)

Variable code	Variables	'r'
X_1	**Age**	0.002
X_2	**Gender**	0.162
X_3	**Educational qualification**	0.279**
X_4	**Years of experience**	0.239*
X_5	**Participation in training**	0.054
X_6	**Job involvement**	0.211*
X_7	**Job satisfaction**	0.263*
X_8	**Achievement motivation**	0.272**
X_9	**Perceived workload**	0.038
X_{10}	**Self confidence**	0.041

** = Significant at 1 per cent level of probability

* = Significant at 5 per cent level of probability

The data depicted in Table 3 clearly states that out of eleven independent variables studied, two variables namely, educational qualification and achievement motivation were positively and significantly correlated at one per cent significant level with the extent of knowledge of extension teaching methods whereas, years of experience, job involvement and job satisfaction were positively and significantly correlated at five per cent significant level. The remaining variables which did not show significant relationship with the extent of knowledge of extension teaching methods were age, gender, participation in training, perceived workload and self confidence.

CONCLUSION

Knowledge of extension personnel about the different extension teaching methods plays a critical role in appropriate selection and effective use of extension teaching methods. The study revealed that more than three fourth of the extension personnel had good knowledge regarding the purpose of all selected extension teaching methods. Majority of extension personnel belonged to high to medium knowledge level of extension teaching methods. The independent variables namely, educational qualification, years of experience, job involvement, job satisfaction and achievement motivation were positively and significantly correlated with the knowledge of extension teaching methods. Further, new technically advanced methods has to be devised for quick and efficient delivery of extension services to the farming community.

CONFLICT OF INTEREST

This is to declare that there is "No conflict of interest" among researcher.

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