Training Need Analysis of Faculty Members of SAMETIs

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Abstract

Training is a proactive, planned and continuous process of change and development for an individual and also organization as a whole. Through training, an individual can acquire new knowledge, improve skills, reorient and redesign his/her attitude for growth and efficiency together with the organizational effectiveness and development. Training helps in changing the internal dynamics of an individual to cope up with the changing scenario in the organization and society. Thus, Training is an essential part of any organization. Training Need analysis (TNA) is the first and foremost step in designing the training programs for targeted group of participants. TNA gives an opportunity to assess the training needs of the participants for whom the training is to be conducted. TNA helps to identify the specific themes or topics among several themes/topics in which the participants are interested to take training. The article analyzes the training needs of faculty members of State Agricultural Management and Extension Training Institutes (SAMETIs).Five competency areas viz, training related competencies, technical competencies, administrative competencies, HRM competencies and soft skills related competencies are identified to elicit the felt needs of SAMETI faculty members. A total of 64 faculty members from 19 SAMETIs participated in the study. Relative Importance Index (RII) procedure was employed to analyze the data. The study results indicate different combination of training needs that may directly be beneficial for the SAMETI faculty to train upon and in turn beneficial for the extension functionaries and farmers for whom SAMETIs organize training programs. Further, the findings may help the capacity building institutes in preparing the training calendars and themes to be included in the refresher trainings for the SAMETI faculty members.

Keywords: Agricultural Extension, Training need analysis, SAMETI, India.

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Introduction

The basic idea of training is to train a particular set of people in a specific skill or task or a process. Training makes the participants to equip themselves with particular skills which may increase their efficiency, accuracy and also accelerate their working pace. Training fills the gap between the present competencies and the required competencies which in turn gives the opportunity for the participants to do the same work or task or process with improved quality in less time. Training is a process of overhauling and improving the knowledge, skills of the employees so that their efficiency, effectiveness and competence get augmented. Training is beneficial both to the individual and the organization.

Training may be defined as a planned program designed to improve performance and to bring about measurable changes in knowledge, skills, attitude and social behavior of employees for doing a particular job. Now a days, training has an additional purpose of facilitating change and management training is basically equipping managers such knowledge, skills and techniques as are relevant to managerial tasks and functions (Pattanayak, 2018).

Fig-1: Conceptual framework of training cycle

Source: Online reference of Training and Development services: development-opportunities.co.uk

As can be seen from the above diagram, training cycle consists of four major aspects viz., Training Needs Analysis, Designing Training Program, Delivery of the Program and Evaluation and Validation. Training cycle starts with Training Need Analysis.

Before organizing any training program, a very important practical step to be undertaken is carrying out Training Need Assessment. The main purpose of a Training Needs Assessment is to identify performance requirements or needs within an organization in order to help direct resources to the areas of greatest need, those that closely relate to fulfilling the organizational goals and objectives, improving productivity and providing quality products and services. The Training Needs Assessment is the first step in establishment of a training and development program. It is used as the foundation for determining instructional objectives, the selection and design of instructional programs, the implementation of the programs and the evaluation of the training provided. These processes form a continuous cycle which always begins with a needs assessment. Needs assessment helps to identify present problems and future challenges to be met through training and development.

Agricultural Extension Reforms scheme in the country introduced new institutional arrangements and operational procedures to address the field constraints and make the agricultural extension more farmer-driven. Thus, Agricultural Technology Management Agency (ATMA) at district level and State Agricultural Management & Training Institute (SAMETI) at state level came into existence. SAMETIs play significant role in building the capacities of officers of State Agriculture and Allied Departments and Farmers. Since, extension functionaries play a crucial role in serving the end users of any technology, they must undergo refresher programs regularly to refresh and build their capacities. Faculty members of SAMETIs are primarily involved in conducting the capacity building programs for extension functionaries and hence, assessment of their capacities and making the faculty well-equipped with the emerging trends is imperative.

Need assessment helps to discover problems and identify future challenges to be dealt by means of appropriate training interventions (ICAR 2020).

The objective of the present study is to analyze training needs of the SAMETI faculty members across the country.

II. Methodology

The present study basically focuses on training need analysis of the faculty members of SAMETIs. Hence, a purposive sampling technique was employed to collect the data from the faculty members of SAMETIs situated across the country. The purposive sampling technique targets specific people to study and infer conclusions. The data were collected in 2019-20. Keeping in view, the resources and time, online mailed survey method was employed to collect the data. Out of 32 SAMETIs situated across the country, 64 faculty members from 19 SAMETIs responded to the survey.

A structured questionnaire was designed after several discussions with eminent persons who had experience of working in SAMETIs to make the questionnaire more relevant and to serve the purpose of the study. The questionnaires were distributed through e-mails to all the SAMETI faculty members to get their responses. Apart from personal profiles, the questionnaire contained statements with Likert scale in different competencies that are required by SAMETI faculty members. The present study employed a five-point Likert scale continuum to mark the importance of a competency (5- Extremely Important, 4- Very Important, 3- Important, 2- Somewhat Important, 1- Not at all Important)

Further, Relative Importance Index (RII) procedure was employed to analyze the data collected. The main purpose of using the RII is to establish relative importance given by the respondents over a set of required competencies in the context of the study. The Relative Importance Index (RII) was calculated using the formula adopted by Fagbenle et al., (2004). Although, majorly RII was used in construction industry, the procedure was also employed in assessing the competencies of project managers (Hashim et al., 2018), Ernest Kissi et al., 2015 used it in assessing the entrepreneurial learning competencies of built environment students, etc.

$$RII = \frac{5*(n5) + 4*(n4) + 3*(n3) + 2*(n2) + 1*(n1)}{5*(n1+n2+n3+n4+n5)}$$

Where: n1, n2, n3, n4 and n5 = the number of respondents who selected

n1= number of respondents who selected "Not at all Important"

n2= number of respondents who selected "Somewhat Important"

n3= number of respondents who selected "Important"

n4= number of respondents who selected "Very Important"

n5=number of respondents who selected "Extremely Important"

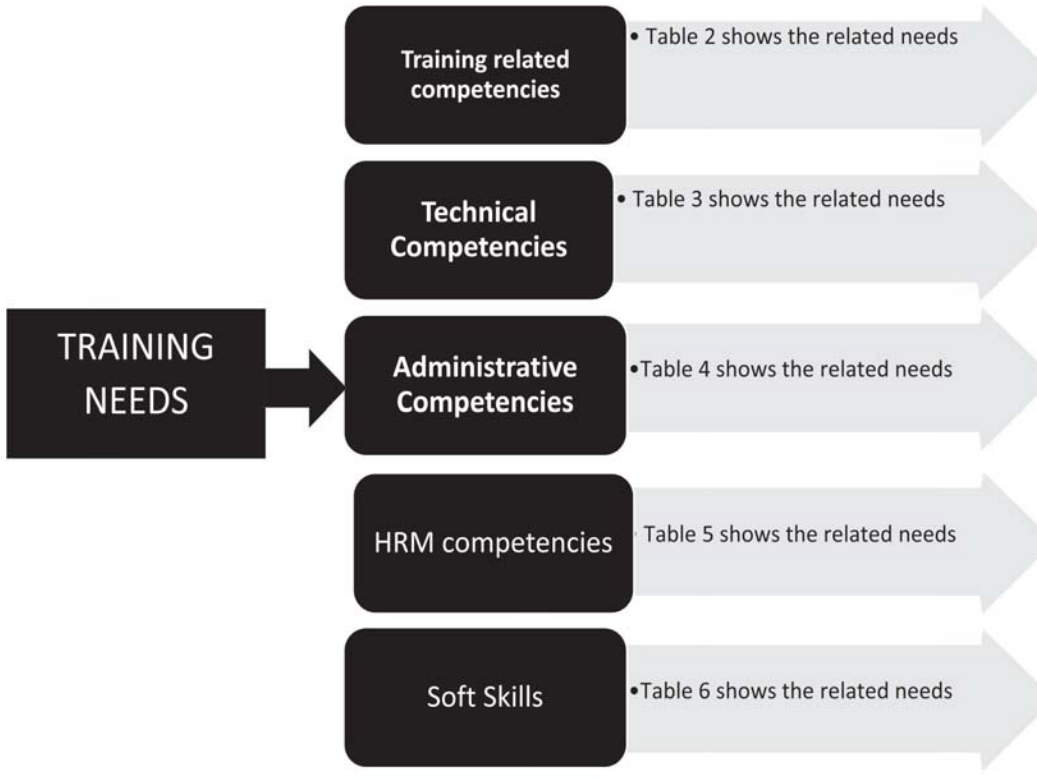

Fig. 2: Analytical Framework: Training need analysis variables identified for SAMETI Faculty

III. Results and Discussion

Table 1: Profile of the Respondents

Gender-wise distribution	Number	Percentage
Male	41	64.06
Female	23	35.94
Total	64	100.00
Age Distribution		
20-30	3	4.69
31-40	12	18.75
41-50	16	25.00
51-60	24	37.50
>60	9	14.06
Total	64	100.00
Education-wise Distribution		
PhD	16	25.00
M.Sc	23	35.94
M.V.Sc	3	4.69
M.Tech/ME	4	6.25
B.V.Sc	1	1.56
B.Tech	1	1.56
MBA	3	4.69
MCA	1	1.56
B.Sc	12	18.75
Total	64	100.00

From table 1, it is evident that majority of the respondents were men with 64.06 percent and remaining 35.94 were women. In case of age distribution, higher representation (37.50%) were from 51-60 age group ,followed by25 percent from 41-50 age group; as SAMETIs re-employ retired professionals also, 14.06 percent are from above 60 years

of age, 18.75percent were from 31-40 age group and only 4.69percent belonged to 20-30 years of age group. In case of education, 35.94 percent of the respondents were from M.Sc. background while 25percent were Ph.D. Degree holders and 18.75percent were from B.Sc. background and few were from M.V.Sc, M.Tech, MBA and MCA background.

Training needs of Faculty members of SAMETIs

The study elicited the training needs that are perceived by the SAMETI faculty members in terms of five different competencies viz, training related activities, technical/core subjects, administrative skills, human resource management and soft skills.

Training related competencies

From table 2, it is evident that course designing is extremely important as perceived by the SAMETI faculty members. The Relative Importance Index (RII) is about 0.92 for course designing and stood with first rank. The other aspects like module designing with an RII of 0.88 (II), training material designing (0.87), conducting sessions (0.85), managing the entire training program and session planning got an RII of 0.83 each and finally arranging logistics for the entire training program got an RII of 0.82.

Table 2: Ranking of Training Related Needs of SAMETI faculty members

S.No	Training Related Needs	EI (5)	VI (4)	I (3)	SI (2)	NI (1)	Total	ΣW	Mean	RII	Rank
1	Course Designing	44	15	5	0	0	64	295	4.61	0.92	I
2	Module Designing	34	22	8	0	0	64	282	4.41	0.88	II
3	Training Material Designing	30	29	5	0	0	64	281	4.39	0.87	III
4	Session Planning	27	24	13	0	0	64	270	4.22	0.83	V
5	Conducting Sessions	27	27	10	0	0	64	273	4.27	0.85	IV
6	Arranging Logistics	25	26	9	4	0	64	264	4.13	0.82	VII
7	Managing the Entire Training Program	29	19	15	1	0	64	268	4.19	0.83	V
		Average RII								**0.86**	

EI: Extremely Important, VI: Very Important, I: Important, SI: Somewhat Important NI: Not at all Important, RII: Relative Importance Index

The overall RII is 0.86 and received II Rank among the five different competencies. To conclude, the data and further analysis suggests that the respondents are clearly in favour of taking training in the above mentioned aspects. The reason may be attributed to the experience of the SAMETI faculty members i.e., majority of the faculty members possess field experience and may not have much experience in training function.

Technical Subject Competencies

Another important aspect in which the faculty members may be given refresher training programs is on the latest technological innovations and other core aspects of their subject concerned. Keeping in view the importance of the technical/core subjects, an attempt is made to know the perceived training needs of the SAMETI faculty members.

Table 3: Ranking of Technical Subject Needs of SAMETI faculty

S.No	Technical Subject	EI (5)	VI (4)	I (3)	SI (2)	NI (1)	Total	ΣW	Mean	RII	Rank
1	Quality Control of Seed	30	15	13	2	4	64	257	4.02	0.80	VI
2	Quality Control of pesticides	29	15	14	2	4	64	255	3.98	0.80	VI
3	Quality Control of fertilizers	29	17	13	2	3	64	259	4.05	0.81	V
4	Weed Management	24	19	14	3	4	64	248	3.88	0.78	X
5	Integrated Pest Management	31	15	13	2	3	64	261	4.08	0.82	III
6	Integrated Nutrient Management	28	17	14	2	3	64	257	4.02	0.80	VI
7	Integrated Crop Management for cereals	22	21	16	2	3	64	249	3.89	0.78	X
8	Integrated Crop Management for pulses	23	20	16	2	3	64	250	3.91	0.78	X
9	Integrated Crop Management for oilseeds	22	19	17	3	3	64	246	3.84	0.77	XIV

10	Integrated Crop Management for commercial crops	21	20	16	3	4	64	243	3.80	0.76	XVI
11	Integrated Crop Management for millets	16	24	13	5	6	64	231	3.61	0.72	XVIII
12	Natural Resource Management	33	14	13	2	2	64	266	4.16	0.83	I
13	Soil Health Management	35	11	12	3	3	64	264	4.13	0.83	I
14	Environmental degradation	32	13	14	2	3	64	261	4.08	0.82	III
15	Alternative Cropping	18	27	12	4	3	64	245	3.83	0.77	XIV
16	Contingency Planning	24	22	12	4	2	64	254	3.97	0.79	IX
17	Crop Bio-diversity	24	20	14	2	4	64	250	3.91	0.78	X
18	Post harvesting technology	24	16	16	2	6	64	242	3.78	0.76	XVI
19	Nutri- cereals	17	22	14	4	6	64	229	3.58	0.72	XVIII
		Average Relative Index								0.79	

EI: Extremely Important, VI: Very Important, I: Important, SI: Somewhat Important NI: Not at all Important, RII: Relative Importance Index

From the table 3, it is evident that natural resource management and soil health management got an RII of 0.83 each, followed by environmental degradation and integrated pest management which secured an RII of 0.82 each; quality control of fertilizers (0.81),quality control of seeds, quality control of pesticides and integrated nutrient management got an RII of 0.80 each; the remaining subjects like contingency planning (0.79);weed management, integrated crop management for cereals, integrated crop management for pulses and crop bio-diversity got an RII of 0.78 each, alternative cropping and integrated crop management for oilseeds with an RII of 0.77, integrated crop management for commercial crops and post-harvest technology with an RII of 0.76 and finally, integrated crop management for millets and nutri-cereals got an RII of 0.72.The calculated RII gives indications that though majority of the faculty members may be well-versed in their core subject areas, yet refresher training programs may be organized on topics like natural resource management, soil health management, integrated pest management and environmental degradation etc. as revealed by the RII values. The overall average RII is

0.79 for the training needs on technical subjects. These needs scored V rank and stood last among the five different competencies under the study.

Administrative competencies

Further, an attempt is made to know the training needs related to administrative competencies that are required by the SAMETI faculty members. Among the Training needs related to administrative competencies, office management is rated with a Relative Importance Index of 0.85. Among these skills, record management (0.83), monitoring skills (0.81) and writing reports got an RII of 0.70.

The overall Average RII is 0.80 for administrative skills and got IV rank (Table 4) among all the training related aspects assessed.

Table 4: Ranking of training needs related to Administrative Skills of SAMETI faculty members

S.No	Administrative Skills	EI (5)	VI (4)	I (3)	SI (2)	NI (1)	ΣN	ΣW	Mean	RII	Rank
1	Office Management	31	24	6	0	3	64	272	4.25	0.85	I
2	Monitoring Skills	18	37	5	1	3	64	258	4.03	0.81	III
3	Record Management	26	29	6	0	3	64	267	4.17	0.83	II
4	Writing Reports	19	21	12	0	8	64	223	3.48	0.70	V
		Average RII								0.80	

EI: Extremely Important, VI: Very Important, I: Important, SI: Somewhat Important NI: Not at all Important, RII: Relative Importance Index

Training needs related to Human Resource Management competencies

Another important aspect where every professional must have sufficient knowledge is Human Resource Management. Managing human resources is one of the important skill sets that every faculty member should possess. With this background, the researchers made an effort to identify the perceptions of respondents about Human Resource Management competencies. Table 5 indicates that time management is the most important training need as per the data with an RII of 0.89, followed by training and development with an RII of 0.87. Managerial skills, organizational culture and networking skills got an RII of 0.86 each and HR system designing attracted an RII of 0.83.

Table 5: Ranking of Huma Resource Management needs of SAMETI faculty members

S.No	Human Resource Management	EI (5)	VI (4)	I (3)	SI (2)	NI (1)	Total	ΣW	Mean	RII	Rank
1	HR system designing	25	25	13	0	1	64	265	4.14	0.83	V
2	Training & Development	26	34	4	0	0	64	278	4.34	0.87	II
3	Managerial Skills	27	31	5	1	0	64	276	4.31	0.86	III
4	Time Management	33	27	4	0	0	64	285	4.45	0.89	I
5	Organizational Culture	26	32	5	1	0	64	275	4.30	0.86	III
6	Networking Skills	28	30	4	1	1	64	275	4.30	0.86	III
		Average RII								0.86	

EI: Extremely Important, VI: Very Important, I: Important, SI: Somewhat Important NI: Not at all Important, RII: Relative Importance Index

The overall average RII is 0.86 and the overall rank is II for Human Resource Management competencies when compared to the other competencies under study.

Training Needs related to Soft Skills Competencies

Besides the hard skills, soft skills or life skills are very important for all cadres of employees working in organizations and more so for faculty members. Keeping this in view, data were collected on 16 different soft skills that are required by the faculty members. From table 6, it is discernable that the topics of positive attitude, communication skills and work ethics got an RII of 0.90 each. The other essential soft skills that are perceived by the SAMETI faculty members are leadership qualities and presentation skills with an RII of 0.89 each; how to deal with higher officials and systematically doing work with an RII of 0.88 each; team building and stress management with an RII of 0.87 each; happiness management and developing work culture with an RII of 0.86 each; emotional intelligence and anger management with an RII of 0.85 each; personality profiling and conflict management with an RII of 0.84 each and negotiation skills got an RII of 0.83. The overall average RII is 0.87 and ranked I among the other competencies under the study.

Table 6: Ranking of Soft Skills needs of SAMETI faculty members

S.No	Soft Skills	EI (5)	VI (4)	I (3)	SI (2)	NI (1)	Total	ΣW	Mean	RII	Rank
1	Stress management	27	32	4	1	0	64	277	4.33	0.87	VIII
2	Leadership Qualities	35	22	7	0	0	64	284	4.44	0.89	IV
3	Presentation Skills	36	21	6	1	0	64	284	4.44	0.89	IV
4	Emotional Intelligence	26	28	10	0	0	64	272	4.25	0.85	XII
5	Developing Work Culture	28	28	7	1	0	64	275	4.30	0.86	X
6	Work Ethics	38	21	4	1	0	64	288	4.50	0.90	I
7	How to Deal With Higher Officials	32	25	6	1	0	64	280	4.38	0.88	VI
8	Anger Management	24	32	7	1	0	64	271	4.23	0.85	XII
9	Happiness Management	26	32	6	0	0	64	276	4.31	0.86	X
10	Positive Attitude	39	20	4	1	0	64	289	4.52	0.90	I
11	Communication Skills	39	20	4	1	0	64	289	4.52	0.90	I
12	Conflict Management	24	30	9	0	1	64	268	4.19	0.84	XIV
13	Negotiation Skills	24	27	11	1	1	64	264	4.13	0.83	XVI
14	Team Building	34	22	6	1	1	64	279	4.36	0.87	VIII
15	Personality Profiling	26	26	11	1	0	64	269	4.20	0.84	XIV
16	Systematically Doing Work	32	24	8	0	0	64	280	4.38	0.88	VI
	Average RII									0.87	

EI: Extremely Important, VI: Very Important, I: Important, SI: Somewhat Important NI: Not at all Important, RII: Relative Importance Index

Overall Training Needs of Faculty Members of SAMETIs

The overall average RII and the ranks of the five competencies are listed in table 7. From the table, it is evident that soft skills related competencies have scored an overall RII value of 0.87 and got I rank among the other competencies, followed by Training Related competencies and Human Resource Management competencies with an RII of 0.86each

and got II rank. Administrative competencies got an RII of 0.80and secured IV rank. Finally technical subject competencies got an overall average RII of 0.79 and stood at V rank.

Table 7: Overall Average RII of five competencies under the study

S.No	Competency	Overall Average RII	Rank
1	Training related competencies	0.86	II
2	Technical competencies	0.79	V
3	Administrative competencies	0.80	IV
4	Human Resource Management competencies	0.86	II
5	Soft Skills related competencies	0.87	I

In order to list a blend of extremely important training needs, the competencies which recorded greater than average RII in five different competencies under study are taken into consideration for listing overall training needs required by the SAMETI faculty members as shown in Table 8.

Thus, in training related aspects, course designing, module designing and training material designing have more RII value than the overall average; hence they are included in the overall training needs. In case of Technical/core subjects, the topics like natural resource management, soil health management, environmental degradation, integrated pest management, quality control of fertilizers, quality control of seeds, quality control of pesticides and integrated nutrient management which are having more than the average overall RII are included in overall training needs. In administrative competencies, office management, record management and monitoring skills have attracted more RII than the average overall RII, hence, are eligible for inclusion in overall training needs. Further, in case of Human Resource Management competencies, topics of time management and training & development attracted more RII value than the overall RII and hence included in the overall training needs. Finally, with regard to soft skills, positive attitude, communication skills, work ethics, leadership qualities, presentation skills, how to deal with higher officials and systematically doing work are included in the training needs of the SAMETI faculty members as they got more RII value than the overall average RII in this set of competencies.

Table 8: Overall training needs of SAMETI faculty members

S.No	Training needs	RII
I	**Training Related Aspects**	
1.	Course Designing	0.92
2.	Module Designing	0.88
3.	Training Material Designing	0.87
II	**Technical Subjects**	
4.	Natural Resource Management	0.83
5.	Soil Health Management	0.83
6.	Environmental Degradation	0.82
7.	Integrated Pest Management	0.82
8.	Quality Control of Fertilizers	0.81
9.	Quality Control of Seeds	0.80
10.	Quality Control of pesticides	0.80
11.	Integrated Nutrient Management	0.80
III	**Administrative Skills**	
12.	Office Management	0.85
13.	Record Management	0.83
14.	Monitoring Skills	0.81
IV	**Human Resource Management**	
15.	Time Management	0.89
16.	Training & Development	0.87
V	**Soft Skills**	
17.	Positive Attitude	0.90
18.	Communication Skills	0.90
19.	Work Ethics	0.90
20.	Leadership Qualities	0.89
21.	Presentation Skills	0.89
22.	How to deal with higher officials	0.88
23.	Systematically doing work	0.88

RII: Relative Importance Index

Conclusion

The Indian public agricultural extension system is one of the largest knowledge and information dissemination institutions in the world. The system played a critical role during the Green Revolution period, but in recent years, it has undergone a high level of scrutiny (Sontakki et al., 2010).To meet the challenges, different agricultural extension reforms were brought which included institutional reforms, capacity building activities, organization and management of extension and also the advisory services. One of the institutional reforms at the state level is establishment of SAMETIs.

SAMETIs are the state level nodal agencies aimed at capacity building of middle and grassroots level extension functionaries and farmers. These extension functionaries will provide extension advisory services to farmers directly. Hence, extension functionaries need to be trained with relevant skills sets which in turn demands building the capacities of faculty members of SAMETIs. Hence, identification of training needs is vital for designing the training programs covering the most important felt needs of SAMETI faculty members.

From the findings of the study, it can be inferred that most of the faculty members of SAMETIs have many training needs. This information indicates that the faculty members need to undergo training programs of different themes on regular intervals to build their competencies so that they are equipped to build the capacities of agricultural extension personnel of their respective states. The study revealed 23 training needs as perceived by the faculty members of SAMETIs which are listed in Table 8.

There should be strengthened and rigorous capacity building of extension personnel to promote professionalism, partnerships, pragmatism, prudence, technology-interface (e.g. ICTs), and pride in the form of morale boosting, attitudinal improvement and knowledge intensive training programmes in addition to skill development(Annual Report, NAARM, 2010).

As stated by Birner and Anderson (2007), the capacity of the potential service providers are very important for agricultural extension. Well trained extension functionaries are very essential not only to farmers but also for the development of the country since majority of the population are dependent on agriculture directly or indirectly. Hence, the trainers of extension functionaries i.e., faculty members of SAMETIs need to be trained and equipped

with the necessary skills so that the extension functionaries get better learnings from the capacity building programs.

Finally, the content of the training programs should be relevant to the participants' functional needs. In order to design a suitable training program, there always comes the need of conducting Training Need Analysis through which the real felt needs of the target group may be assessed and accordingly the training programs may be designed. Further, appropriate training methods may be used according to the intellectual capacities of the target group for whom the trainings are designed. Besides, third party impact evaluations also may be conducted occasionally to gauge the impact of the training programs and accordingly changes may be brought into the training mechanisms.

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