

Reactions of Primary School Teachers Towards Training through Interactive Television

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Abstract: *This paper is about a research work conducted to study the reactions of primary school teachers of Gwalior district, Madhya Pradesh towards training through interactive television. Twentysix teachers from four Blocks of Gwalior district participated in the experiment. The training programme, namely, Special Orientation Programme for Primary School Teachers (SOPT) was conducted by the National Council of Educational Research and Training (NCERT), using interactive television technology from August 2-8, 1996. The researcher developed a questionnaire comprising four major components, namely, contents and their presentations, interaction between the experts and the participants, technology related matters and activities at the training centres, to measure the reactions of the participants towards training through interactive television. Data collected from the participants were analysed by Chi-square technique. Based on the analysis and interpretation, it was concluded that primary school teachers expressed favourable reactions towards training through interactive television.*

Introduction

Teacher education has always been an important concern for the various commissions and committees set up from time to time to recommend for educational development in our country. Under teacher education, inservice education of teachers at all levels has, of late, assumed a significant importance. This is because the teacher today faces many challenges, emanating from expanding horizons of knowledge as well as other forces impinging upon the consciousness of the pupils (Challenges of Education, 1985). Moreover, the needs for in-service education of teachers, arise from several sources, such as changing national goals, revision of school curricula, additional inputs in teaching learning system, inadequate background of teachers, etc. (POA, 1986). Realising the need for in-service training for teachers the National Council for Teacher Education (NCTE) has also decided that every teacher of primary, secondary and higher secondary level should undergo a course of in-service education at least once in every five years so as to be eligible for further increments (NCTE, 1995). The inservice education of teachers at the primary level is more important as the development of teacher competence at this level is directly linked with the achievement of the objective of universalisation of primary education. There have been several efforts at the state and national levels in this direction from time to time. Especially, several schemes were launched as part of the efforts for universalisation of primary education in pursuance of the National Policy on Education (1986).

The scheme of 'Operation Blackboard' was launched in the year 1987 to provide minimum essential facilities both physical and human in all primary schools for their effective functioning. The District Institutes of Education and Training (DIET) were established in many districts of the country to impart quality teacher training to both pre-service and in-service elementary teachers. Minimum Levels of Learning (MLL), a competency based programme, was also started for developing minimum competency in various aspects of learning among primary school children. It was a difficult task on the part of DIETs to provide in-service training to 1.7 million teachers with regard to the knowledge pertaining to MLL in a time bound period. Therefore, another centrally sponsored programme, namely, Special Orientation Programme for Primary School Teachers (SOPT) was initiated and its implementation in all the states and the union territories has been bestowed upon the National Council of Educational Research and Training (NCERT).

SOPT and its Training Methodology

The main emphasis of SOPT is the development of teacher competence in core curricular areas for effective teaching and awareness about contextual themes. The training package under the SOPT deals with subjects like mathematics, language, environmental studies, art education, health and physical education and work experience. The training package also includes training in the use of kits provided under the scheme of 'Operation Blackboard' comprehensive and continuous evaluation, developing school readiness in the children, creating a school climate for effective teaching-learning, methodology of multi-grade teaching, sensitization to issues such as education of special groups viz girls education, women's empowerment and value education (Maheswari and Raina, 1996).

The training methodology followed for the SOPT was the traditional cascade model. In cascade model training inputs flow down from teacher education experts to the teachers through several layers of trained resource persons. Although the cascade model of training was popular with the centralised scheme of mass orientation of teachers, there was some inherent weakness with this model i.e. loss in the transfer of training. Therefore, an alternative training method, based on the distance mode, using interactive television was adopted for the SOPT. The first experiment was conducted for the primary teachers of Karnataka state from January 7-13, 1996 and the second one was done for the primary teachers of Madhya Pradesh, from Aug. 2-8, 1996. The present study aims at studying the reactions of primary school teachers of Madhya Pradesh especially the primary teachers of Gwalior district towards training through interactive television. Before going on to the the study it would be relevant to discuss the nature of interactive television used in the experiment.

Interactive Television in SOPT

The type of interactive television adopted by NCERT was a one-way video and two-way audio conferencing using a communication satellite of INSAT-series and the talk-back provided through long distance telephones. The training end was the studio of the

Indira Gandhi National Open University (IGNOU) which had an uplink facility with a transponder on INSAT Satellite. The receiving ends are located in 45 DIETs of Madhya Pradesh and DIET, Gwalior is one of them. The receiving ends were provided with a dish antenna and an ordinary television set. The communication satellite received video signals from the training end by means of uplink earth station and transmitted these signals which were received by Direct Reception Centres (DRS) at the receiving ends through extended C-band receiver. The system configuration of interactive television used in SOPT experiment is presented in Fig. 1

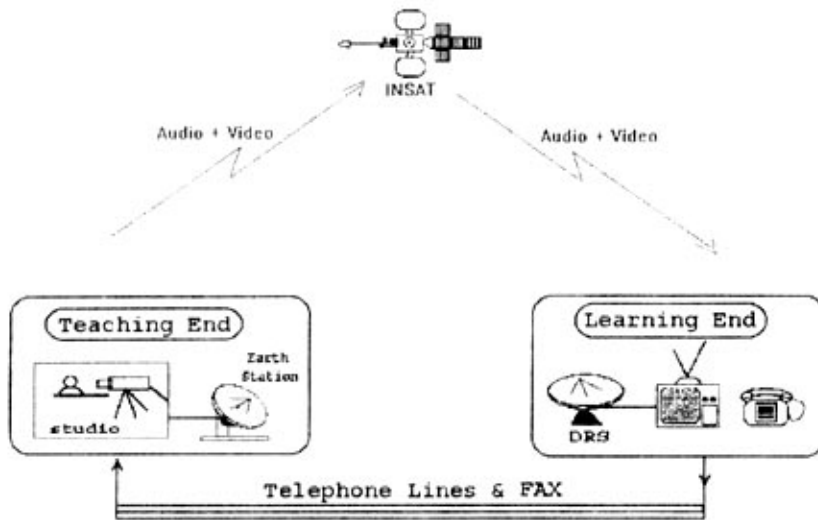


Fig. 1: System configuration

(Source: Phalachandra & Veena, 1997)

Interactive television started operating with the anchor person at the teaching end welcoming the participants at the receiving ends and introducing them to the theme of the session. Then he welcomed the experts for a session and introduced them to the participating teachers. The experts, then began the academic business in the form of lectures, discussions, demonstrations, debates etc. Their activities were transformed into audio-video signals which were received by the communication satellite through uplink earth station — TRACT. The communication satellite transmitted these signals which were received by an ordinary television by means of DRS at the receiving ends. The participants viewed the programme. Once the presentations from the teaching end were over, the anchor person invited questions, comments, clarifications, etc. from the participants. The participants from different receiving ends asked questions with the help of STD facility. The audio messages were received by a small EPABX located at the teaching end. The anchor person then directed the questions to the experts who answered the questions. The anchor person at a time received one telephone call or a number of telephone calls together depending upon their coming from the receiving ends. The anchor person also received a number of fax messages through a fax machine from the participants during a session. The responses of the experts reached the audi-

Table 1. Block-wise distribution of teachers

Sl.No.	Block	No. of Teachers
1.	Morar	10
2.	Dabara	4
3.	Ghatigaon	6
4.	Bhitarbar	6

Age of teachers

Age-wise distribution of teachers in the sample is presented in Table 2.

Table 2. Age-wise distribution of teachers

Sl. No.	Range of Age	No. of Teachers
1.	20-30	2
2.	31-40	15
3.	41-50	4
4.	51-60	5

From Table 2, it is evident that maximum number of teachers (15 out of 26) belong to the age group of 31-40 years whereas minimum number (2 out of 26) of teachers belong to the age group of 20-30 years.

Experience of Teachers

Experience-wise distribution of teachers in the sample is presented in Table 3.

Table 3: Experience-wise distribution of teachers

Sl. No.	Range of year of experience	No. of Teachers
1.	0-10	11
2.	11-20	9
3.	21-30	2
4.	31-40	4

From Table 3, it is seen that experience of maximum number of teachers (11 out of 26) ranges from 0-10 years whereas experience of minimum number of teachers (2 out of 26) ranges from 21 to 30 years.

Qualifications of Teachers

Qualification-wise distribution of teachers in the sample is presented in Table 4.

Table 4: Qualification-wise distribution of teachers

Sl. No.	Qualification of Teachers	No. of Teachers
1.	Higher Secondary	9
2.	Graduate	4
3.	Post-Graduate	4
4.	Trained Graduate (Basic Training)	3
5.	Trained Post-Graduate (Basic Training)	2
6.	Trained Post-Graduate (Bachelor of Education)	3
7.	Trained Post-Graduate (Master of Education)	1

From Table 4, it is concluded that majority of teachers (17 out of 26) do not have any formal training background whereas nine teachers have teacher training background which starts from basic training to master of education.

Development of the Tool

A questionnaire was developed to study the reactions of the primary school teachers participating in the training programme towards training through interactive television. The questionnaire consists of 26 questions covering four major components of the training programme. These are contents and their presentations, interaction between the experts and the participants, technology related matters and activities at the training centre. The questionnaire was initially developed in English by the researcher in consultation with the facilitators at the training centre. Since many participants were unable to respond to the questionnaire in English, it was translated into Hindi by the facilitators. The number of questions under four major components of the training programme is presented in Table 5.

Table 5: Number of questions under four major components of the training programme

Components of the Training Programme	No. of Questions
Contents and their presentations	5
Interaction between the experts and the participants	7
Technology related matters	10
Activities at the Training Centre	4

Collection of Data

The developed questionnaire was administered to all the participants at the end of the training programme. The participants were informed about the purpose for which data would be used. They were given necessary instructions as to how they should respond to the questions in the questionnaire. There was no time limit given to complete the

questionnaire. However, all of them completed the questionnaire within 30 minutes. After they completed the questionnaires, the questionnaires were collected from all of them.

Analysis Procedure

Data collected from the participants were analysed using appropriate statistical technique. Chi-square (χ^2) technique was used to analyse the participants' responses to all the questions.

Analysis and Interpretation

The main objective of the study was to study the reactions of primary school teachers towards training through interactive television. To meet this objective, the following hypothesis was formulated.

"Primary school teachers participating in the training programme will express favourable reactions towards training through interactive television".

To examine the above broad hypothesis 'equal answer' hypothesis was formulated for each question to be tested. For this Chi-square was applied to see the significance of difference between the response categories. In the subsequent sections, participant's responses to questions under four major components are analysed and discussed.

Contents and their Presentations

The questions under contents and their presentations, frequency distributions under response categories and chi-square values are presented in Table 6.

Table 6: Questions under 'Contents' and their 'Presentations', frequency distributions and chi-square values

Sl. No.	Questions	Frequency Distributions			df	χ^2
1.	How were the presentations of the contents by the experts?	Good (19)	Average (5)	No Response (2)	2	18.99*
2.	Were the academic contents in the training programme difficult or simple?	Difficult (5)	Simple (16)	Both (5)	2	9.31*
3.	Were the examples given by the experts suitable or unsuitable?	Suitable (20)	Unsuitable (3)	Average (3)	2	22.24*

4.	Were the explanations given by experts appropriate or inappropriate?	Appropriate (20)	Inappropriate (3)	No Response (3)	2	22.24*
5.	How were the discussions among the experts during telecast?	Good (22)	Average (4)		1	11.12*

* Significant at .01 level

From Table 6, it is evident that χ^2 values of 18.99, 9.31, 22.24, 22.24 and 11.12 for the questions 1,2,3,4, and 5 respectively are significant at .01 level. In these cases, 'equal answer hypotheses' stand rejected. This means that there is significant difference among the participants' responses falling under various categories. On the basis of the majority responses to the questions in Table 6, the following points can be concluded.

1. The presentations of the contents by the experts were good.
2. The academic contents in the training programme were simple.
3. The examples given by the experts were suitable.
4. The explanations given by the experts were appropriate.
5. The discussions among the experts during telecast were good.

On the whole, it is concluded that participants reacted favourably towards contents and their presentations by the experts.

Interaction between the Experts and the Participants

The questions under the component-interaction between the experts and the participants, frequency distribution and chi-square values are presented in Table 7.

Table 7: Questions under the component-interaction between the experts and the participants, frequency distribution, degree of freedom and chi-square values

Sl. No.	Questions	Frequency Distributions			df	χ^2
1.	How were the interaction sessions in the programme?	Good (17)	Average (8)	No. response (1)	2	14.84*
2.	Were you able to ask questions to the experts?	Yes (19)	No (7)		1	4.65**
3.	Were you benefited by the questions asked by the participants from other centres?	Yes (24)	No. (2)		1	16.96*

4.	Were you satisfied with the answers to your questions given by the experts?	Yes (16)	No (10)		1	0.96***
5.	Were the facilitators at the training centre helpful to you?	Yes (21)	No (3)	No response (2)	2	26.37*
6.	To what extent were the facilitators helpful to you?	To a large extent (16)	To some extent (5)	Not helpful (5)	2	9.31*
7.	Were the questions from other centres ordinary or thought provoking?	Ordinary (12)	Thought provoking (7)	Both (7)	2	1.92***
*	Significant at .01 level					
**	Significant at .05 level					
***	Not significant					

From the Table 7, it is evident that χ^2 values of 14.84, 16.96, 26.37 and 9.31 for the questions 1,3,5 and 6 respectively are significant at .01 level. The chi-square value of 4.65 for question 2 is significant at .05 level. In these cases, equal answer hypotheses stand rejected. This means that there is significant difference among participants' responses falling under various categories. It is also seen that the χ^2 values of 0.96 and 1.92 for questions 3 and 7 respectively are not significant at .05 level. Hence, equal answer hypotheses stand accepted. This means that there is no significant difference among participants' responses falling under various response categories. On the basis of the majority responses to the questions in Table 7, the following can be concluded.

1. The interaction sessions in the programme were good.
2. Participants were able to ask questions to experts.
3. They were benefitted by the questions from other training centres.
4. There is no significant difference between participants' satisfaction and non-satisfaction with the answers given by the experts to their questions.
5. The facilitators were helpful to the participants at the training centre.
6. The facilitators were helpful to them to a large extent.
7. There is no significant difference between the participants, responses to the questions asked from other centres.

On the whole it can be concluded that participants reacted favourably towards their interaction with the experts.

Technology Related Matters

Questions under the component-technology related matters, frequency distributions

under various response categories and Chi-square values are presented in Table 8.

Table 8: Questions under technology related matters, frequency distributions and chi-square values.

Sl. No.	Questions	Frequency Distributions			df	χ^2
1.	Were the graphics used by the experts suitable or unsuitable?	Suitable (21)	Unsuitable (5)		1	8.65*
2.	How was the role of the anchor person?	Good (25)	Average (91)		1	20.35*
3.	Were the questions asked by the participants from other centres audible to you?	Yes (15)	No (3)	Sometimes audible (8)	2	8.97**
4.	Was the telecast from the studio clear or unclear?	Clear (6)	Unclear (7)	Both (13)	2	3.30***
5.	Was the sound in the telecast clear or unclear?	Clear (14)	Unclear (2)	Both (10)	2	8.61**
6.	How were cartoons sent by the participants of other training centres?	Useful, good and appropriate (23)	Average (3)		1	13.88*
7.	Was there any development in your knowledge and skills after participating in the training through interactive television?	Yes (21)	No (5)		1	8.65*
8.	Do you prefer training through interactive television or face-to-face mode?	Face-to face (16)	ITV (16)	Both (4)	2	8.76**
9.	Would you like to attend training programme through interactive television in future?	Yes (23)	No (3)		1	13.88*
10.	Would you tell your colleagues to participate in training programme through interactive television?	Yes (23)	No (3)		1	13.88*

* Significant at .01 level

** Significant at .05 level

*** Not significant

From the Table 8, it is evident that x^2 values of 8.65, 20.35, 13.88, 8.65, 13.88 and 13.88 for questions 1, 2, 6, 7, 9 and 10 respectively are significant at .01 level. The x^2 values of 8.61 and 8.76 for questions 5 and 8 are significant at .05 level. In these cases, equal answer hypotheses stand rejected. This means that there is significant difference among the participants' responses falling under various response categories. The x^2 value of 3.30 for question 4 was not significant at .05 level. This means equal answer hypothesis stand accepted. It implies that there is significant difference among the participants' responses falling under three categories. On the basis of majority responses to questions in Table 8, the following can be concluded.

1. The graphics used by the experts were suitable.
2. The role of the anchor person was good.
3. The questions asked by the participants from other centres were audible to them.
4. There is no significant difference among the participants' responses regarding the quality of telecast.
5. The sound in the telecast was clear.
6. The cartoons sent by other training centres were useful, good and appropriate.
7. There was development in participants' knowledge and skills after participating in the training programme through interactive television.
8. Participants preferred training through face-to-face mode to training through interactive television.
9. Participants expressed their desire to attend training programme through interactive television in future .
10. Participants would tell their colleagues to participate in training through interactive television.

There is a contradiction between the participants saying that they prefer face-to-face training programme to training through interactive television and their willingness to participate in training through interactive television in future. The former reason may be due to their mindset with face-to-face mode of training and the latter reason may be due to their exposure to technology based training programme. However, on the whole they expressed favourable reactions to the training through interactive television.

Learning Activities at the Centre

Questions under the component-learning activities at the training centre, frequency distributions under the various response categories and Chi-square values are presented in Table 9.

Table 9: Questions under the component-learning activities at the training centre, frequency distributions and chi-square values

Sl. No.	Questions	Frequency Distributions			df	χ^2
1.	Was the learning environment at the training centre conducive or not?	Conducive (21)	Not Conducive (4)	No Response (1)	2	26.84
2.	Were the group activities at the training centre helpful to you?	Yes (23)	No (3)		1	13.88*
3.	Was the time given to different sessions sufficient?	Yes (6)	No (20)		1	6.5**
4.	Was the self-instructional material helpful to you?	Yes (19)	No (7)		1	4.65**

* Significant at .01 level
 ** Significant at .05 level

From Table 9, it is seen that χ^2 values of 26.84 and 13.88 for questions 1 and 2 are significant at .01 level. The chi-square values of 6.5 and 4.65 for questions 3 and 4 are significant at .05 level. In these cases, equal answer hypotheses stand rejected. This means that there is a significant difference among the participants, responses falling under various categories. On the basis of majority responses to question in Table 9, the following can be concluded.

1. The learning environment at the training centre was good.
2. The group activities at the training centre were helpful to them.
3. The time given to different sessions was not sufficient.
4. The self-instructional material was helpful to the participants.

In the above conclusions, it is seen that the time given to various sessions was not sufficient. It may be due to participants expecting more time to engage in learning activities under various sessions. This finding is supported by Maheswari and Raina (1996) who reported that there was a general complaint of inadequate time for asking questions and for seeking clarifications from the experts. However, they expressed favourable reactions towards learning activities at the training centres.

Major Findings

On the basis of analysis and interpretations, the following major findings are arrived at.

1. Primary school teachers attending SOPT training programme through interactive television expressed favourable reactions towards various contents and their presentations by the experts.

2. They expressed favourable reactions towards interactions between them and the experts.
3. They expressed favourable reactions towards various aspects of interactive television.
4. They expressed favourable reactions towards learning activities at the training centres.

On the whole, they expressed favourable reactions towards training through interactive television. This finding is supported by Maheswari and Raina (1996) who reported that there was an overall favourable response towards the various components of interactive video technology such as the panel discussions, TV programmes and their presentation.

Conclusions

The research study presented in this paper was conducted on a sample of 26 primary school teachers of Gwalior district, Madhya Pradesh, who had undergone SOPT training programme through Interactive Television at DIET, Gwalior. The research was conducted to study the reactions of primary school teachers towards training through interactive television. Although this finding is arrived at from a small sample, it is in line with earlier research (Maheswari and Raina, 1996) and calls for further research with larger samples and greater details.

References

- Challenges of Education – A Policy Perspective* (1985). New Delhi: Ministry of Education, Govt of India.
- Maheswari, A. N. and Raina, V.K. (1996) 'INSET through Interactive Video Technology: An Innovative Indian Experience', Unpublished, New Delhi: NCERT.
- NCTE (1995) *Different Modes of Education used for Teacher Preparation in India — A study*, unpublished, New Delhi: National Council for Teacher Education.
- Phalachandra, B. and Veena Seema (1997) 'Primary Teachers Training through Interactive Television— An Indian Experience', paper accepted for 18th ICDE World Conference held in University of Pennsylvania State, USA.