



Comparative study (gender-wise) of Effectiveness of the Teacher Training Programmes Imparted through Video-Conferencing by using EDUSAT Network

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(Received 12 September, 2017, Accepted 25 November, 2017)

(Published by Research Trend, Website: www.researchtrend.net)

ABSTRACT: Along with developing and dissemination of quality media programmes for teachers and students, orientation of teachers and teacher educators of such a huge system of education in India at regular intervals is always a challenging task. Covering all such teacher educators only through face-to-face training and orientation programmes is virtually impossible. In India, use of electronic media technologies in classroom has a short history; however, it has helped to shift the focus from teacher to learner, and teaching to self-learning. Now blending of technology and its application in the delivery of education promises to increase productivity. Possibilities of teaching and learning at varied paces, self-learning, dual modes of study, etc. could all benefit from the use of technology, particularly ICT. India has made considerable progress in all stages of education including school education since independence. It has also made long strides with reference to overall literacy, infrastructure and universal access and enrollment in schools. The main focus of present study was to study Effectiveness of the Teacher Training Programmes Imparted through Video-Conferencing by Using EDUSAT Network and main findings of the study is that there exist no significant difference on mean scores gender wise on any of the subcomponent of effectiveness of teacher training through video conferencing mode. Although, level of effectiveness of teacher training was overall good in all sampled participants.

Keywords: Video-Conferencing, EDUSAT Network, Universalization of Elementary Education (UEE), National Curriculum Framework

I. INTRODUCTION

A. Conceptual Framework

India has made considerable progress in all stages of education including school education since independence. It has also made long strides with reference to overall literacy, infrastructure and universal access and enrollment in schools. Two major developments in the recent year's form the background to the present reform in teacher education is the political recognition of Universalization of Elementary Education (UEE) as a legitimate demand and the state commitment towards UEE in the form of the Right of Children to Free and Compulsory Education Act, 2009 (Annual report 2009-10) [2].

Besides, the challenges before the teacher education i.e. diverse geographical and socio-cultural conditions, multiplicity of language, explosion of knowledge (speed of knowledge updating), dearth of quality teachers, frequency of curriculum change, emphasis on rote learning approaches, alarming teacher-taught ratio, lack of motivating organizational climate, load of administrative work on teachers and teacher educators etc. further hinders imparting quality education and making the teaching learning process an inactive one. Also education is becoming expensive day-by-day, and earns and learns culture is coming fast.

As a bail out mechanism to this challenge, the National Curriculum Framework (NCF)-2005 states "judicious use of technology (Multimedia and ICT) can increase the reach of educational programmers, facilitate management of the system, as well as help address specific learning needs and requirements of young learners, teachers and teacher educators. For instance, mass media can be used to support teacher training, facilitate classroom learning, and be used for advocacy. Possibilities of teaching and learning at varied paces, self-learning, dual modes of study, etc. could all benefit from the use of technology, particularly ICT. The increasing use of the Internet has enabled the sharing of information and provided space for debate and dialogue on diverse issues hitherto unavailable on such a

scale. Technological innovations are also necessary for appropriate equipment and aids for meeting the learning requirements of children with special needs. What needs to be underscored is that technology could be integrated with the larger goals and processes of educational programmes rather than viewed in isolation or as an add-on.

In India, use of electronic media technologies in classroom has a short history; however, it has helped to shift the focus from teacher to learner, and teaching to self-learning. Now blending of technology and its application in the delivery of education promises to increase productivity (institutional as well as individual through better learning management), quality of curriculum transaction and learning experiences. It is possible to have greater access to quality education because integration of ICTs makes an amazing range of media: audio-visual, radio, television, teleconferencing (audio, video and computer) and tools (computers, CD-ROMs, Telephones, DVDs, satellite, Internet), available to us for quick, effective and reliable communication, data storage and retrieval.

II. THE CONCEPT OF EDUSAT NETWORK

Along with developing and dissemination of quality media programmes for teachers and students, orientation of teachers and teacher educators of such a huge system of education in India at regular intervals is always a challenging task. Covering all such teacher educators only through face-to-face training and orientation programmes is virtually impossible. Organization of orientation programmes through a cascade model i.e. multi-tier training strategy (training of Key - Resource Persons, Master Trainers etc. at State, District, Block and Cluster level) may be one of the modalities for training and re-training of a large number of teachers and teacher educators of our country. Special Orientation of Primary School Teachers (SOPT) and Programme for Mass Orientation of School Teachers (PMOST) was organized through adopting such strategy. However, keeping in view the transmission loss through such programmes (training through cascade model) and the resource crunch with the states, training of teachers through distance mode (video and audio conferencing) could be a better option.

III. OBJECTIVES OF EDUSAT IN TEACHER TRAINING PROGRAMME

- (i) To familiarize teacher /educator with modern ICT, their use and significance in teaching and learning.
- (ii) To develop the instructional design relevant and compatible to satellite based education.
- (iii) To train teacher educators in content development, organization & software design so that they may provide in-service training to educational planners and personal involved in curriculum development and content enrichment.
- (iv) To encourage teacher and students in developing collaborative projects
- (v) To create pedagogical sound programming in areas that do not have the ability to use these technologies till date.
- (vi) To develop the skills using technology with diverse approaches ranging from the traditional teaching methods to more sophisticated collaborative techniques.
- (vii) To assess the use of ICT mediated interventions-e.g. interactive radio and video instructions for teacher and students and pilot other technologies for activity based learning through links with computer mediated learning system.
- (viii) To introduce new models combining in different ways, the means of electronic communication and the computer, to provide a wide array of delivery options and new pedagogical alternatives for school, college & university levels.
- (ix) To train teacher educator use "Education digital video library". The new content will increase and the existing resources and their utilities. The digital library categorizes, digitizes, stores and distributes video and multimedia materials. It allows for online search and delivers video-on-demand to school through satellite TV not only for consultation but for creating new content.
- (x) To provide easy access to resource persons and possibility of frequent interaction.
- (xi) Taking education to all part of the country and encouraging greater community participation and monitoring.
- (xii) Secondary School television project (1961) was designed for the secondary school students of Delhi. With an aim to improve the standard of teaching in view of shortage of laboratories, space, equipment and dearth of qualified teachers in Delhi this project started on experimental basis in October 1961 for teaching of Physics, Chemistry, English and Hindi for students of Class XI. The lectures were syllabus-based and were telecasted in school hours as a part and parcel of school activities. According to Paul (1968) 'the schools were teaching is done by the use of televisions have performed much better as compared to non-television schools' [9].

IV. REVIEW OF RELATED LITERATURE

Allen *et al* (2003) found that video-conferencing for practice-based small-group continuing medical education: feasibility, acceptability, effectiveness, and cost will be more efficient results [1].

Beena Shah (2004) describes in her study on EDUSAT Project states that EDUSAT will provide syllabus-oriented programmes, in regional languages, in the class room situation and in presence of teacher/ instructor. No doubt, it will contribute significantly to close traditional learning gaps, reduce the educational lag and consolidate national

system that offer quality services to all sectors of society. However ,for this to occur, it is necessary to comply with a series of conditions and strategies based on the specific requirements, capability to reach massive audiences and offer equal quality of content to target groups with specialized needs [4].

Kunz (2002) also stresses the importance of interactivity in Video-Conferencing. This author evaluated nearly 200 video conferencing –based classrooms to arrive at a set of recommendations for making video conferencing effective. Chiefly, he finds, “more active involvement of the participants” is critical [7].

A study on comparison of the effects of reading and storytelling by the teacher and television story viewing. Three groups of six to seven years old children were used to compare the effects of stories read by a teacher with stories viewed on educational television. Television was preferred by the children for its pictures, movement and action, and generated more detailed understanding and recall, but only when the stories were interpreted and rationalized by the teacher. Video recorder replay is helpful and teacher needs to be taught how to manage story telling with young children.

Neither student achievement nor attitude adversely affected by the satellite delivery of courses in comparison to face to face delivery. In an impact evaluation of teleconference using a mixed model (having a variety of media and activities during sessions).

Bates (1988) while discussing interactivity in instructional television say it is related to student number. Rots *et al* (2010) found a very high level of satisfaction and beliefs in its effectiveness amongst participants [3]. Parkash and Lal (1998) studied presentation and production aspect in relation to the effectiveness of teleconferencing for orientation of primary school teachers. They found that language, presentation style, pace of presentation, clarity of graphs /charts /text used and the teaching aids had a direct bearing on effectiveness of teleconferencing. They suggested that the design of the sessions should be learner oriented and spontaneous to ensure active participation of the learners, for which the experts/presenters must be trained in teaching learning through interactive technologies [11].

V. NEED AND JUSTIFICATION OF THE STUDY

Teacher performance is the most crucial input in the field of education. Whatever policies may be laid down in the ultimate analysis, these are to be interpreted and implemented by teachers as much as through their personal example as through teaching learning process (National Policy on Education, 1992). Realising the importance of Media and Educational Technology in India, the National Policy on Education in its modified document-1992 (Media and Educational Technology, Para 8.10-11, Page 38) states that, “Modern communication technologies have the potential to bypass several stages and sequences in the process of development encountered in earlier decades. Both the constraints of time and distance at once become manageable. In order to avoid structural dualism, modern educational technology must reach out to the most distant areas and deprive sections of beneficiaries simultaneously with the area of comparative affluence and ready availability. Further it has stated that “*Educational Technology will be employed in the spread of useful information, the training and retraining of teachers, to improve quality education, sharpen awareness of art and culture, inculcate abiding values etc., both in the formal and non-formal sectors*”. Maximum use will be made of the available infrastructure. Further the National Curriculum Framework (NCF)-2005 states “judicious use of technology can increase the reach of educational programmes, facilitate management of the system, as well as help address specific learning needs and requirements of young learners, teachers and teacher educators. For instance, mass media can be used to support teacher training, facilitate classroom learning, and be used for advocacy [8].

As many of us know the Edusat facility is comparatively a newly introduced venture and very scanty researches are available in this area. Therefore it speaks itself the importance of the study. It is presumed that the present research is likely to add corpus of knowledge related to effectiveness of these types of the programmes and their relevance to the class room teachings and practicing teachers. The results of the study will be certainly helpful in redesigning various training programmes planned through video-conferencing. The study also will be helpful to the administrators and educational planners at national and state level. Therefore the present study is fully justifiable [13].

Objective of Study

To find out the significance of difference in Training Effectiveness of Men and Women teachers.

Hypotheses

There will be no significant difference in Training Effectiveness of Men and Women teachers.

VI. OPERATIONAL DEFINITION OF THE KEY TERMS USED

Teacher Training: Professional development programme like orientation and refresher courses on various themes are organized by teacher education organizations through face to face and distance mode. The training programmes organized by NCERT for school teachers using EDUSAT network constituted part of this study.

EDUSAT: It is Acronym for educational satellite launched by Govt. of India on 20 September 2004 for educational programme transmission.

Video Conferencing: Synchronous two-way interactive video and audio communication by using satellite communication. The participants (about 20-25) use to seat at the learning with live communication with the resource persons through satellite communication.

Gender: refers to men and women participants in the programme.

Training Effectiveness areas: refers to Contents, Presentation, Interaction, Transmission, Training material and Role of Facilitators

Centres: in the present study total 21 centres were selected to see the effectiveness of for training

Regions: in the present study four regions were: North, Western, North-East and South.

Training Effectiveness areas: refers to Contents, Presentation, Interaction, Transmission, Training material and Role of Facilitators

(i) **Content:** Content of the topic means subject matter discussed in the training through CIET studio by NCERT, New Delhi.

(ii) **Presentation:** means the content presented by the panelist by means of video conferencing.

(iii) **Interaction:** means the discussion taken place on the contents between the different participants, panelist in different centres through EDUSAT network.

(iv) **Transmission:** refers to the transfer the content through EDUSAT network.

(v) **Training material:** Stationery, handbooks, programme schedule note, relevant CDs and VCD of the contents.

(vi) **Role of Facilitators:** are the persons at the learning end who provides the all the facilities to the teachers participating in the training programmes.

Delimitation of the Study

The study has been delimited in terms of objectives, hypothesis, samples, tools, design, statistical techniques etc. The obtained result of the study may be generalized only within the framework of delimitation of the study. The present study has been delimited to the school teachers/Teacher Educator undergoing training programmes through CIET (NCERT) by using EDUSAT network in the 21 centres located in different parts of the country.

VII. METHODOLOGY

A. Research Method

The main objectives of the study were to assess the effectiveness of the teacher training programme imparted through video-conferencing by using EDUSAT network. Therefore in the present study the researcher has used descriptive survey method of research.

B. Sample

In the present study out of 100 SITs, only 21 SITs were selected on the random sampling technique of research. The investigator visited personally in some of the SITs and from the other Centres the data were collected through e-mail and by post only. In all 786 participants were included in the sample pool of the present study.

Table 1: Showing the Position of Male and Female Teachers in the sample Structure.

S. No	Gender	Number of Teachers
1	Male	460
2	Female	326
	Total	786

C. Tools Used

According to the objectives of the study, tools of training effectiveness and teachers perception scales were required. To cater the needs, these two tools were developed and standardized by the investigator. Training Effectiveness Inventory (T.E.I.).

Reliability. Reliability of the tests was determined through Split-half method of Reliability. All the reliability co-efficient of all Six Training Effectiveness Areas were found highly reliable. The reliability co-efficient of the Split half- test is 0.70 (Contents: 0.65, Presentation; 0.66, Interaction; 0.68, Transmission; 0.73, Training Material; 0.66 and Facilitator; 0.64). The reliability co-efficient of whole test was determined by using the Spearman Brown Prophecy formula. The co-efficient of the whole test is $2 \times 0.70 / 1 + 0.70 = 0.80$.

Validity. In the present study investigator has adopted the two methods of determining the validity, that is Content validity and Concurrent validity.

D. Procedure of Data Collection

The data were collected during various training programmes organized by CIET (NCERT) for teachers and teachers educators on different subject areas. The duration of each training varied from 3 days to 5 days duration. A list of training programme from which the data were collected includes the following:

1. Teaching of Mathematics (3 days)
2. Action research in Educational Technology (3 days)
3. Research methodology for use of ICT in Education (3 days)
4. Puppets in Education (5 days) [5].
5. Use of ICT in Education (5 days)

The data were collected personally and through e-mail and by post from the various centers included in the sample structure.

E. Analysis and Interpretation of Data

In order to find out significance of mean differences in Training Effectiveness of men and women teachers, 't'-values were computed. The Table 2 presents the obtained results.

Table 2: Means, Standard Deviations and 't'-Values for Training Effectiveness in respect of Men and Women Teachers.

Sr. No	Areas	Group	N	Mean	SD	t- value
1.	Contents	Men	460	31.4130	3.527	1.476 ^{NS}
		Women	326	31.8037	3.743	
2.	Presentation	Men	460	32.2457	3.201	1.795 ^{NS}
		Women	326	32.6534	3.090	
3.	Interaction	Men	460	30.9196	3.392	1.476 ^{NS}
		Women	326	31.2853	3.442	
4.	Transmission	Men	460	28.0522	3.029	.353 ^{NS}
		Women	326	27.9724	3.183	
5.	Training Material	Men	460	26.1500	4.998	1.400 ^{NS}
		Women	326	26.6718	5.250	
6.	Facilitator	Men	460	34.7674	3.843	1.050 ^{NS}
		Women	326	35.0613	3.884	

NS=Not Significant, *=Significant at 0.05 level, **=Significant at 0.01 level.

It is evident from table 1 that 't' values comparing mean scores of different areas of effectiveness of teacher training i.e., Content, Presentation, Interaction, Transmission, Training Material and Role of Facilitator came out to be non-significant ($P > 0.01$, df 784). It means that there is no significance difference in the opinion of men and women teachers with regard to different areas of teachers training. It leads to the conclusion that on an average, men and women teachers appeared to be on equal foot in their opinion with regard to Contents, Presentation, Interaction, Transmission, Training Material and Facilitators role. The apparent differences in the mean scores of the different areas of men and women teachers could be ascribed to the chance factor and sampling fluctuations and true differences did not exit.

Hence, the research hypothesis number 1 there will be significant differences in Training Effectiveness of Men and Women teachers was rejected.

VIII. RESULTS AND DISCUSSION

It is revealed from the table one that in most of the components of the training effectiveness through video conferencing area women are better in their mean scores than men's there better in the sub area of content presentation interaction training material as well as in facilitators on the other hand men are better than women on transmission sub component of the main area although it is revealed that there is there exist no significant difference between men and women on almost all the areas even then women are better on the earlier said areas.

From the above given results it can be concluded that both men and women have equal level on training effectiveness under different components or sub areas of training effectiveness area or they do not differ significantly on any of the sub area. Going back to the scores it can be argued here that both men and women have acquired good training effectiveness through video conferencing. The results of study are in consonance with the earlier studies like Cavanaugh (2001) and Sharma-Brymer, (2012) [6,12].

Currently, the experts are using either the white board or power point slides for their presentation. It's unique with the usage of animations, graphs and more video clippings are important. The telecast timings of EDUSAT network must be adjusted with the user requirements to make it more effective. Video clippings covering industrial activities, live demonstrations can substantiate the lectures to make it livelier. The educational interactive videoconferencing

programs are effective and interactive among the students; but needs to be modified as per the suggestions give above to make it students friendly and also to create an impact on the teaching-learning methods. A proper intimation to students should be given through emails, and colleges. Graphical presentations should be added in the audio visual presentations.

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