

**REPORT
OF
THE WORKING GROUP
ON
EDUCATIONAL TECHNOLOGY**

**Ministry of Education and Social Welfare Government of India New Delhi
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FOREWORD

The Union Ministry of Education and the State Departments of Education are deeply concerned with the need to improve the quality of education, to widen access to education and to reduce the existing disparities between the different regions of the country as well as different sections of the population. The task has to be carried out expeditiously, effectively and within the limitations of available resources.

The Educational Technology Programme aims at contributing to the achievement of these objectives by deploying the modern communication technology, notably the mass media in the educational process. The recent Satellite Instructional Television Experiment has established the potential of satellite broadcast television by showing that it is possible to reach effectively and at low cost, very large number of school children, adults, teachers and extension workers in remote areas where communication and educational facilities were inadequate. The expansion of the television network in India and the availability of INSAT by 1981 promise a bright future for educational development provided the educational planners and administrators can create an appropriate infrastructure for exploiting the new technologies to the fullest possible extent. Needless to say the Educational Technology Programme has assumed much greater importance in the wake of the high priorities accorded to universalization of elementary education on the one hand and adult education on the other. Considerable foresight and planning are therefore the need of the moment.

Consequently, the Ministry of Education set up a Working Group on Educational Technology under the Chairmanship of Education Secretary, Shri P. Sabanayagam to review the programme, to identify the priority areas, to work out detailed schemes and to indicate their financial implications. A large number of educationists and media experts representing governmental and non-governmental organisations were associated with the Working Group.

The Working Group held its deliberations during the period February to July 1978. In the main, the Working Group endorsed the need to provide financial support on a greatly enhanced basis for the programme and recommended its extension to all the States and Union Territories.

This document is a report of the Working Group. It is hoped that the ideas and suggestions made in the report will merit careful consideration. The report is presented as one of the first documents on the subject which has special reference to the conditions obtaining in our country.

On behalf of the Ministry of Education and Social Welfare I would like to thank all the members of the Working Group, the Sub-Groups and the Committee on the State Institutes of Educational Technology for their time, effort and valuable contribution.

Shrimati A. Dayanand
Joint Secretary to the Government of India
Ministry of Education & Social Welfare

December 12, '78
New Delhi

I

INTRODUCTION

The Ministry of Education set up in December 1977 a Working Group on Educational Technology in order to identify the role of educational technology in education, to determine the priority areas, to work out detailed schemes and to indicate their financial implications. More specifically the Working Group was requested to examine the following issues :

- development of a concept of educational technology in relation to Indian conditions
- formulation of a set of broad guidelines for the development of educational technology programmes
- strengthening the three implementing agencies, *i.e.* Centre for Educational Technology, Educational Technology Cells and Educational Technology Unit in the light of experience gained
- provision for guidance and coordination at the central level between educational and media organisations
- identification of the roles and functions of governmental and non-governmental organisations concerned with the development of the programme
- provision of continued financial support from the central government on a greatly enhanced basis, in continuation of earlier assistance to all States and throughout the Sixth Plan Period.

The members of the Working Group are listed in Appendix I. The membership reflects the attempt to involve representation at the Central and State levels on the one hand and educationists and media experts on the other. It was also ensured that both governmental and non-governmental institutions were represented on the Working Group. The Working Group was chaired by the Education Secretary, Shri P. Sabanayagam.

The following documents were submitted for the consideration of the Working Group :

- Review and Development* : An appraisal of the Educational Technology Programme since its inception up to 31 December 1977
- Appraisal Reports* from State Educational Technology Cells
- A Working Paper on Future Proposals*

The Working Group held two meetings—the first on February 9 and the second on July 10, 1978. At its first meeting, the Chairman explained that the purpose of the Working Group was to consider how the advances made in the field of communications technology could be used for furthering education. The Working Group had a general discussion on various aspects of the role of Educational Technology in spreading and improving education and established three Sub-Groups to consider in depth specific aspects of the programme within the framework of its terms of reference.

The functions of the Sub-Groups were :

Sub-Group I : *Programming for Educational Technology*

- (i) to formulate broad guidelines for the development of the educational technology programme
- (ii) to suggest areas of operation of these programmes on an immediate and long term basis
- (iii) to develop a few model projects in detail in priority areas for immediate implementation of the programme
- (vi) to identify requirements for these programmes and suggest measures for meeting them.

Sub-Group II : *Identification of Roles of Organisations*

- (i) to identify the roles and functions of governmental and non-governmental organisations concerned with the development of the programme
- (ii) to consider the strengthening of the three implementing agencies, *i.e.* Centre for Educational Technology, Educational Technology Cells and Educational Technology Units in the light of past experience
- (iii) to identify the infrastructure and other measures needed for the fulfilment of the roles referred to in (i) and (ii).

Sup-Group III : *Coordination, Administration and Finance*

- (i) to review the administrative and financial provision made available for implementing the programme
- (ii) to specify the structure and personnel necessary for the educational technology programme and the necessary administrative and financial support
- (iii) to identify ways and means of strengthening the programme through coordination between developmental agencies and Ministries and Departments concerned
- (iv) to consider the scale and pattern of Central financial assistance.

The members were invited to serve on the Sub-Groups of their choice and also requested to nominate or suggest others who could be associated with the Sub-Groups. The composition of the Sub-Groups is given in Appendix II. The Chairman of Sub-Group I constituted a Study Group to assist with the development of model projects. The membership of the Study Group is also given in Appendix II. On the basis of a recommendation made by Sub-Group III, a Committee was set up to prepare a blue-print for a State Institute of Educational Technology.

The reports of the three Sub-Groups together with the report of the Committee on State Institutes of Educational Technology were considered at the second and concluding meeting of the Working Group held on July 10, 1978. The reports of Sub-Group II and III were accepted in their entirety. The report of Sub-Group I was also accepted but with some modifications which have been taken into account in the Report.

The Working Group also accepted the need for establishing a separate Institute of Educational Technology in each State but recommended that, to begin with, these Institutes should be established on a modest scale.

In the following section the deliberations of the Working Group are presented under broad headings which arise out of the terms of reference assigned to the Working Group. In the concluding section the main recommendations are listed for convenience of reference.

II

REPORT OF THE WORKING GROUP

1 REVIEW AND PROBLEMS

Review

Early beginnings : The Educational Technology Programme is essentially aimed at improving the quality of education and widening access to education through the utilization of the media of mass communication and all instructional technology. Government's interest in improving the quality of education by the use of technological aids and devices goes back to 1947 when the audio-visual scheme was included in the educational development plan. It had the limited objective of promoting the use of educational films and sound broadcasting in addition to the other projected and non-projected aids.

Over the years almost all States set up audio-visual units. These units maintain film libraries for loan to schools and educational institutions which have projectors. Films are also screened by mobile vans in local schools which do not have projectors. In a few States the units have developed some expertise in the maintenance and repair of equipment and training teachers in the production and use of simple audio-visual materials. In the area of educational broadcasting, the audio-visual units have promoted the purchase of receiving sets by schools but made little effort towards ensuring the utilization of the educational programmes broadcast by the All India Radio.

On the whole the programme has not taken root and in most States today it has come to a virtual halt. The failures of the audio-visual programme were due to several reasons. In the first place, it was not conceived as an integral part of the educational system and was thus not provided adequate material and manpower support. Most State units have small budgets and an audio-visual education officer, an odd-job-man, and projectionist-cum-clerk.

Secondly, a programme mainly based on the use of educational films, required support of an indigenous film production movement with roots in all States or arrangements for large scale adaptation and dubbing of selected films produced elsewhere. This support is still not available. Other audio-visual materials, such as filmstrips and educational charts, were also not freely available. Nor did the schools have adequate production facilities to enable even interested and trained teachers to produce the simple

aids needed by them. Furthermore, it has taken a long time for teacher training colleges to realise the importance of audio-visual education and to integrate it in their training programme. Thus the production and availability of software, training of teachers in audio-visual methods and provision of hardware in schools were all far from adequate. In these circumstances the use of audio-visual aids remained an optional or peripheral exercise with only the interested and competent teachers making use of the limited provisions.

Although this programme did aim at supplementing the resources at the disposal of the teacher, its coverage remained limited mostly to better off institutions in the urban areas and its benefits could not be extended to the institutions in the rural and economically backward areas. This resulted in widening the disparities between different institutions and groups covered by the formal system. The audio-visual programme also failed to make any substantial contribution to educational programmes outside the formal system.

Broadcasting was a medium that could reach large numbers everywhere and at low cost, but educationists were unable to realise or to take full advantage of its potential for educational purposes in the formal system. Radio sets were not provided in adequate numbers and teachers found it difficult to integrate a centrally produced and broadcast programme with the varying requirements of classroom schedules in different institutions. The educational support in the planning and production of programmes was inadequate in most States.

Educational Technology Project : A second beginning was made in 1971-72 with the development of the Educational Technology Project as a new scheme for the Fourth Five Year Plan. This Project was intended to stimulate the use of television as well as other instructional media, notably radio and film, to improve the quality of education. However, the scheme was formulated with a distinctly different emphasis, the objective being to *create an infrastructure* necessary for the utilization of television facilities for education which were to become available under the Satellite Instructional Television Experiment and also under gradually expanding terrestrial television in the country. The infrastructure would involve collaboration on a systematic basis between media agencies and educational institutions in the planning, production and use of media programmes, preparation of support materials, provision and maintenance of hardware, training of user teachers and a variety of other personnel, undertaking research and investigation in the implications arising out of the induction of these media in the educational system.

The scheme was conceived as a broadbased and collaborative effort among the Ministry of Education, the Ministry of Information and Broadcasting and the Indian Space Research Organisation. It underlined the importance of inter-agency coordination, systematic planning, scientific research and proper utilization. Operationally, the project sought to extend the benefits of technology to large groups, particularly those in rural areas. Its stated objective was to improve the quality of education at all levels, to reduce stagnation and wastage and eventually to restructure the methods of education.

The scheme was centrally sponsored and envisaged the setting up of three agencies : (a) an Educational Technology Unit in the Ministry of Education for policy formulation, coordination and financing the ET programme; (b) a Centre for Educational Technology in the NCERT for research, training and prototype production in support of ET programmes ; and (c) Educational Technology Cells in the State Departments for Education for promoting the use of Educational Technology for the expansion and improvement of education in the State.

Assistance was initially provided for three years. However, as the scheme was slow in taking off and as the States wanted assurance of assistance for five years, the Ministry of Finance agreed to extend assistance beyond the Fourth Five Year Plan. Under present arrangements five years of assistance (or till the end of 1978-79 whichever is earlier) is available. ET Cells have been set up in 17 States.

During the Fourth Five Year Plan a token amount of Rs. 21.32 lakhs was allocated. During the Fifth Plan, the overall provision amounted to Rs. 269.06 lakhs. The expenditure incurred up to September 1978 was Rs. 133,20,945. The Statewise and yearwise expenditure on the ET Cells is indicated in Table 1. A detailed review of the development of the Educational Technology Project is given in Appendix VIII.

Programme Operation in SITE States : Although the programme was initiated in 1971-72, it took off only with the launching of the Satellite Instructional Television Experiment in 1975-76. Under SITE, instructional television programmes were transmitted directly from the satellite to reception sets in rural areas. The experiment covered 2,330 villages in widely separated clusters in six States (Andhra Pradesh, Bihar, Madhya Pradesh, Karnataka, Orissa and Rajasthan). The television programmes were transmitted in the morning to primary school and in the evening to general population. The television sets were placed mostly in primary schools, community halls or *Panchayat ghars*.

The Educational Technology Cells provided support for the proper use of educational television programmes in the primary schools. They also assisted in the organisation of the evening television programmes broadcast for other sectors of the population. The ET Cells were made responsible for, among other things, appointment of custodians, reimbursement of salaries, payment of electricity bills, keeping and rendering accounts. This work, although not properly falling in the domain of the functions of the ET Cells, underlined the importance of creating State level agencies for ensuring the proper use of mass media. In this process, the ET Cells gained some insight into the complexity of organizational and management structures necessary for large scale planning for the use of media.

As part of their functions, the ET Cells arranged the training of user teachers in the handling of television sets and use of television programmes. They prepared, translated, printed and distributed the support materials, supervised and evaluated the experiment in the participating schools. They also assisted in the planning of programmes and training of script writers. Some ET Cells undertook in depth studies of the impact of educational television programmes. These studies have been instrumental in bringing

TABLE—I

Grant-in-aid to State Governments for ET Cells

Name of State	Fourth Plan		1974-75	1975-76	1976-77	Fifth Plan		Total (in Rs.)
	1972-73	1973-74				1977-78	1978-79	
1	2	3	4	5	6	7	8	9
1. Maharashtra	50,000	1,70,048	1,28,000	1,44,193	1,75,730.35	6,14,971.35
2. Rajasthan	...	75,762	31,943	3,12,752.50	1,85,800	1,01,717	..	7,07,974.50
3. Andhra Pradesh	1,22,608	3,07,250	1,90,643	81,120	1,84,480	8,86,101.00
4. Bihar	66,680	2,76,874.38	1,55,025.38	22,743	26,520	5,47,842.76
5. Karnataka	63,179	2,74,683	3,05,756.76	1,13,119	..	7,56,737.76
6. Madhya Pradesh	83,261	2,78,613	1,78,527	49,593	1,34,925	7,24,919.00
7. Orissa	1,10,784	3,41,900	1,67,282	96,990	1,60,212	8,77,168.00
8. Gujarat	88,500	...	74,500	..	1,63,000.00
9. Punjab	1,49,700	..	79,456.87	69,500	2,98,656.87
10. Tamil Nadu	1,70,872	1,17,750	50,000	3,38,622.00
11. Uttar Pradesh	50,000	40,881	..	90,881.00
12. Himachal Pradesh	1,00,000	..	1,00,000.00
13. Jammu & Kashmir	1,40,000	..	1,40,000.00
14. Nagaland	72,150	..	72,150.00
15. Manipur	1,06,588	95,680	2,02,268.00
16. Meghalaya	9,200	..	9,200.00
17. Sikkim	1,00,000	1,00,000.00

about a better understanding of the implications of the television process in education. As a result, the ET Cells are beginning to plan the post-SITE television programmes with greater understanding and clarity. Also they are engaged in promoting the use of radio in primary schools not covered by television. They also employ radio and TV for training primary school teachers to avoid dislocation, to cut down avoidable training costs and to maintain continuous contact with the teachers during and after the training.

The ET Cells also participated in large scale teacher training programmes organized by the CET through a multi-media approach. These programmes trained about 47,000 teachers in two phases and involved a large organizational effort in planning the package and using it.

Programme Operation in non-SITE States : The ET Cells in Maharashtra and Tamil Nadu have built up an infrastructure for educational television broadcasts by the Television Stations in Bombay and Tamil Nadu respectively. The ET Cell in Tamil Nadu has done pioneering and substantial work in providing, through a special drive, radio sets to almost all primary, middle and secondary schools. It has also taken several measures to integrate the broadcasts with the school system. The ET Cell in Punjab is planning a thematic approach to school broadcasting. The ET Cell in Gujarat has launched a training programme involving 10,000 primary school teachers aimed at improving English teaching. The programme consists of a carefully planned series of radio broadcasts and printed materials and has been developed in collaboration with the All India Radio, State Institute of Education and H.M. Patel Institute of English. In Kerala, the SIE has been engaged since 1975 in organizing radio-cum-correspondence teacher training programmes in collaboration with the All India Radio and other State agencies. The experience of these programmes led the State Education Departments to realise the need for establishing a special agency like the Educational Technology Cell for operating such programmes.

Problems

The Working Group noted that the progress of the Educational Technology Programme had been hindered by certain factors. Some of these are listed below :

Lack of Adequate Staff : The scheme provided for the officer-incharge of the ET Cell and two programmers-cum-scriptwriters with some supporting staff. Inadequate as this provision was, it was often not respected. There were frequent changes which undermined smooth operation and development of the programme. Most of the staff members were not trained, nor even exposed to orientation programmes. The suggestion made to the States to amalgamate the Audio-Visual units with the ET Cell to improve the staff situation was not implemented for various reasons. Moreover, the scheme did not provide for staff with managerial and technical skills which are necessary for an educational technology programme.

Inadequacy of Physical Facilities : The physical facilities were also unsatisfactory. The accommodation of an Educational Technology Cell is usually a room or two which is barely adequate for seating arrangements of the three officers and their supporting staff

The offices are often in depressing and slum-like conditions, exposed to dust, wind and rain and variations in temperature altogether inadequate for a technology programme. The equipment made available is lying unused partly for lack of space and partly for lack of technical staff.

Absence of Coordinating Mechanism : While the implementation of an educational technology programme depended on the close collaboration between media agencies and departments of education, appropriate mechanisms for coordinating their efforts were generally not established or where established were shown to develop.

Unsatisfactory Pattern of Assistance : The piece-meal manner of assistance and uncertainty about the period for which it would be available has discouraged several States from taking advantage of the 100% offer of central assistance. This has led to the under-utilization of budgeted funds and uneven development of the programme. States which wanted a clear assurance of five years of such assistance have so far remained outside the scheme.

Lack of Acceptance : Educational Technology is a new discipline. In India it has been in operation for a very short period and its methods and concept have not been fully understood by all concerned. This has resulted in slow acceptance of the Educational Technology Programme.

2. CONCEPT OF EDUCATIONAL TECHNOLOGY

Education involves the transfer or communication of information, knowledge and skills from one point (the source) to another (the receiver). Until recently this process depended on the spoken word (through the medium of the teacher), supplemented by printed material and occasionally facilitated by the use of audio-visual aids.

The development of the technology of communication has placed at our disposal the means to transfer knowledge more effectively to larger number of receivers at multiple points irrespective of the distance between the source and the receivers.

Educational Technology implies the full deployment for education of the new means of communication and would thus embrace all educational methods and media offered by communication technology for dissemination of information and knowledge. This would require identification of media, selection of educational content which best lend themselves to treatment by these media, and the best methods which can be adopted for the purpose.

In the Indian context, the media presently best capable of serving the national priorities in education should be selected.

3. GUIDELINES FOR DEVELOPING EDUCATIONAL TECHNOLOGY PROGRAMMES

The major thrust of Educational Technology programmes should be to promote the universalisation of elementary and adult education and enlargement of opportunities for secondary education.

The Educational Technology programmes should make widespread use of radio, television and printed media with a view to reaching out to the largest possible numbers in the different groups. Television is an effective and persuasive medium for education. In anticipation of the nationwide television coverage with INSAT by 1981, more emphasis should be given to the development of this medium as an important part of Educational Technology programmes.

It is imperative that the Educational Technology programmes should be conceived for development and operation on a massive scale to make it possible for them to contribute to the national goal of achieving universalisation of education in the next five years.

The Educational Technology programmes must develop fundamentally new approaches to make education accessible to all, especially to the deprived sections of the population and thereby supplement in a massive way the formal system of education which cannot expand rapidly enough to meet socio-economic aspirations of the people. Appropriate organisational and production structure would be required to support these programmes.

The Educational Technology programmes must develop new contents and methods leading to new learning outcomes which should facilitate the change in the educational system to make it more relevant and functional.

The Educational Technology programmes have to be directed towards arousing motivation for learning and for activating self-instruction among the recipients.

The Educational Technology programmes have to be geared to creating awareness among the people of their rights as human beings and to help them attain those rights. They should also arouse a keen interest in the environment. These programmes should generate salutary pressures.

The Educational Technology programmes will require the support of all development agencies, namely planning, education, health, agriculture, etc. to make an impact on social and economic development.

The Educational Technology programmes must be constantly evaluated, reviewed and modified to make them as effective as possible.

4. ROLE OF EDUCATIONAL TECHNOLOGY

The main function of education is communication of knowledge, skills and attitudes. The mass media have great potential in communicating them effectively. Much greater use of these media for education, especially for non-formal education, will make it possible to promote universalisation of elementary and adult education and programmes of educational expansion at other levels as well.

Television

Research studies have indicated that television, if properly used, has great potential for education and training of all types of personnel. Therefore, wherever available, telecast facilities should be exploited fully. A beginning could be made almost immediately in the SITE States where TV facilities are directed to rural audiences. Intensive utilisation of existing facilities will provide the much needed experience in the management of large scale operations involving the use of a sophisticated, complex and capital intensive medium. It would also involve coming to grips with problems concerned with the planning and production of TV programmes, training of technical personnel, maintenance and repair of hardware, utilization of TV programmes, linking TV programmes with development activities and activating the ET Cells and other educational institutions. All this experience will in turn prove invaluable for making better use of the INSAT in 1981.

Television has a definite role to play in the eradication of illiteracy. It is the only medium which can reach out to the large number of illiterates in a persuasive and readily understandable form of communication. Television also lends itself to non-formal methods of communication which have proved quite effective with adults.

In the area of teacher education, there is an urgent and persistent need to improve the quality of teachers both in content and methodology. Here also television can play an important role by utilising such techniques as micro-teaching, CCTV and supplementing the correspondence courses for teachers.

Since most of the under qualified teachers come from single teacher schools, generally located in rural areas, they cannot be removed from their respective schools for the purpose of training. Instructional TV can play a vital role in their training *in situ*.

Universalization of elementary education has the highest priority in educational plans. This would involve additional enrolment of 30 million children during the next five years, as against the normal addition of one million children per year. It will be difficult to achieve this target unless television is used on a massive scale both inside and outside the formal system.

Radio

Although radio does not have as powerful an impact as TV, it does offer the possibility of extensive deployment in education because of the infrastructure available, the comparatively low cost of receiving sets and our long experience with this medium. If supported by printed and visual materials, the potential of radio becomes enormously high for educating all kinds of groups including children. Its special appeal would be in establishing contact with specific groups in hilly, snowbound or otherwise inaccessible areas where the isolation of the community needs to be broken before any change can be brought about. Radio communication, specially for these areas, would prove to be the cheapest means of establishing contact on a continuing basis. In course of time, it would become a two-way system of communication in India as in other countries.

Print

TV and radio are ephemeral media of communication. For educational purpose, where storage and retrieval of information is an essential feature, both these media will have to be supplemented by various kinds of print materials. If radio and TV are to be used for providing fresh approaches to the transfer of knowledge, the supplementary print materials should be an essential and integral part of the Educational Technology Programme. These materials would be workbooks, reading materials, notes and guidebooks for instructors, time tables and schedules etc.

Other forms such as newspaper and printed publicity will be needed to create the motivation and environment for change. New kinds of newspapers will have to be developed to satisfy the needs of neoliterates, to provide a regular flow of information and to consolidate their newly acquired abilities.

5. PRIORITIES FOR EDUCATIONAL TECHNOLOGY

Educational Technology programmes should accord priority to areas of education and learner groups as follows :

I. Elementary Education

- (i) *Children in Elementary schools* : A non-formal approach will be adopted, aimed at releasing the young minds from the boredom and tedium of classroom confinement, rigidly spelt out curricula and unimaginative text books. It is hoped that the enrichment of the learning situation through such programmes will motivate the children to continue school and also effect improvement in the teaching methods prevailing in elementary schools, especially those in the rural and tribal areas.

- (ii) *Out-of-school children* : The programmes for these children will aim at arousing their interest in learning, conveying general education and motivating them for further learning. In the process, these children will feel encouraged to attend schools for formal education or centres for non-formal education.
- (iii) *Elementary school teachers and supervisors* : Every educational system is confronted with the difficult problem of maintaining contact with teachers and upgrading them through inservice training. All efforts to this effect (sponsored training, short-term refresher courses, summer schools, etc.) have generally fallen short of the targets. Educational Technology provides an opportunity for the first time to reach large number of teachers simultaneously, to maintain continuing contact with them, to disseminate knowledge in systematic and programmed manner and to provide inservice training *in situ*.

II. Adult Education

- (i) *Adult population* : The national programme for adult education, which aims at making 100 million adults literate during the next five years, makes it imperative that all mass communication media (TV, film, radio and print) be fully exploited. The use of these media will create a climate of change besides aiding directly the instructional processes.
- (ii) *Instructors and supervisors for adult education* : They very large number of instructors required for effective and expeditious implementation of the adult education programme could be trained by using methods similar to those suggested for elementary school teachers with suitable modifications.

III. Secondary Education

Secondary Education groups : It is well realized that the formal school system with its limited resources may not be able to cope with the rising demand for secondary education. Necessary efforts will therefore, have to be made to provide secondary education through non-formal channels to as vast a population as possible, particularly to disadvantaged group like backward classes and girls. Already there is a proposal to set up Open Schools for extending facilities for secondary education. In this system educational technology can play an important role.

6. ORGANISATIONAL SET UP

The planning, development and execution of the Educational Technology programme will require concerted action by a large number of organisations at the

national and state levels. The major organisations are identified and their roles defined as follows :

- (i) *Ministry of Education* : The major responsibility of the Ministry of Education would be in the area of policy formulation, financing the Educational Technology programme and overseeing its implementation. The specific functions would be
- to lay down the broad policy, to determine its emphasis, oversee implementation and make periodical appraisals
 - to provide funds and ensure other support for the programme
 - to sponsor, assist in, and stimulate research
 - to coordinate the work of governmental and non-governmental agencies at the national and states levels
 - to assist in the formulation of state work plans.

In order to carry out these functions, the Ministry of Education should have a full-fledged Division of Educational Technology, which should be headed by a specialist in Educational Technology and should be adequately staffed and provided with supporting services.

- (ii) *National Council of Educational Research and Training/Centre for Educational Technology* ; They should provide professional support for the Educational Technology programme within the policy framework laid down by the Ministry of Education. More specifically
- to apply educational technology in the areas of universalization of elementary education and adult education
 - to function as a service organisation for all States in matters pertaining to identification of needs, training of personnel, production of prototype materials and evaluation
 - to establish facilities of educational technology in Headquarters (CET) and in Regional Colleges of Education
 - to promote an awareness of the role of educational technology in education and to develop expertise
 - to revise the existing courses in teacher education/training so as to incorporate educational technology as a subject of study
 - to produce books and materials for the teacher training courses at different levels
 - to introduce appropriate changes in the system of evaluation
 - to foster and undertake research in different aspects of educational technology

—to provide orientation for producers of educational broadcasts in All India Radio and Doordarshan.

(iii) *State Departments or Department of Education/Educational Technology Cells* : The (D/E) should take the full responsibility for the planning and execution of the Educational Technology programmes and to this end it should

- establish the necessary machinery for the implementation of the programme
- appraise its functioning particularly to ensure high standard
- take such steps as are necessary to expand the areas of its application
- ensure coordination with all departments concerned with development
- take over the financial responsibility of the programme in due course of time
- develop the infrastructure for the organisation and implementation of the programme
- obtain participation of state educational institutions, universities, training colleges and correspondence institutions and other allied agencies.

A centrally sponsored scheme for the establishment of a full-fledged Institute of Educational Technology in each State/Union Territory has been recommended. (see section 7). Till these State Institutes of Educational Technology are established, Educational Technology Cells should continue to perform the following functions :

- to mobilise public opinion and community support for the programme
- to coordinate with state educational agencies and others concerned with development at local levels
- to collaborate with media agencies in the planning and production of programmes and research on them
- to produce support materials and ensure their distribution and utilisation
- to ensure provision of equipment and its maintenance
- to undertake training of teachers in collaboration with concerned institutions
- to identify areas of specific concern and develop programmes for action
- to assist in developing curricula in collaboration with State Institute of Education
- to act as secretariat to the State Council of Educational Technology recommended in section 9 *Coordinational and Linkages*.

(iv) *Ministry of Information & Broadcasting* : The Ministry of Information & Broadcasting will be closely associated with the Educational Technology programme and its media organizations will play an active role in its implementation. The functions of some of these organisations are indicated below :

(a) All India Radio and Doordarshan

- production and transmission of Educational Technology programmes to be prepared in collaboration with the educational authorities
- provision of information and motivation for programmes of educational development
- provision of adequate resources to support the technical aspects of the Educational Technology programme
- decentralisation of programme operations to the State/Centre level.

(b) Directorate of Audio-Visual Publicity and Field Publicity Organisation

- publicity for motivation through nationwide campaigns
- provision of supporting services in the field

(c) Films Division

- to produce films which are suitable for non-formal education, much on the lines it is doing for the Ministry of Agriculture through its special unit for production of agricultural films, the budget for which is provided by the Ministry of Agriculture
- to make available the vast resources of its stock shot library for production of educational films at no or nominal cost
- to prepare catalogue of stock shot in greater detail than at present in accordance with established practice for film clip libraries.

(d) Indian Institute of Mass Communication

- to organise on a regular basis short-term basic courses in mass communication for those working in Educational Technology establishments
- to familiarise them with the potential, problems and limitations of the mass media and their techniques
- to admit personnel from educational institutions to its specialized courses in photography, operation and maintenance of equipment, research methodology etc.

—to undertake research in media with special reference to education as well.

(e) Film and Television Institute, Pune

—to provide training in educational television films

—to encourage prototype production and formative research in educational television

(v) Indian Space Research Organisation|Space Application Centre

—to design low cost studios

—to provide training in the use of 1/2 inch video technology

—to train personnel for formative research

—to provide orientation in team modes of production and evolving scientific approach to programming

(vi) University Grants Commission and Educational Institutions

(a) University Grants Commission

—to provide financial support to universities and other educational institutions which offer courses in mass communication and allied field or set up departments of educational technology

—to support the establishment of educational technology centres at selected educational institutions which could ask for franchise to broadcast educational and extension programme

—to provide funds for extension work by universities and colleges

—to support intensive utilization of educational technology programmes for farmers' training and functional literacy, specially by the agricultural universities.

(b) Universities

—to offer courses in mass communication in order to meet the manpower needs resulting from the expansion of broadcasting facilities

—to undertake extension work directly in cooperation with other bodies

—to train personnel at various levels for the educational technology programme

—to undertake experimentation and research in this area

—to produce programmes

- to create their own broadcasting facilities in order to accelerate the expansion of educational facilities and extension work through programmes of distance learning

- to support programmes of farmers' training and functional literacy.

(c) Educational Training Institutes

- to offer a compulsory course in educational technology with particular reference to broadcasting

- to undertake research in suitable areas of educational technology

- to produce programmes directly or in collaboration with production agencies

- adopt modern methods of training teachers and other educational personnel such as managerial cadres, supervisors, administrators, etc.

(d) Institutes of Technology and those for Technical Teacher Training

- to undertake training of technical personnel at various levels for maintenance and operation of equipment

- to undertake research and experimentation for further development of the educational technology programme

- to introduce courses in script writing, particularly for television

- to produce appropriate programmes

(vii) Non-governmental Organisations

The non-governmental organisations have an important role to play in promoting educational technology. Their capabilities in this field should be extensively utilized and supported where necessary. Such organisations should be encouraged to undertake innovative micro-level projects which have a demonstration value.

7. STATE INSTITUTE OF EDUCATIONAL TECHNOLOGY (SIET)

State Institutes of Educational Technology should be established along the following lines :

1. Overall objectives

The main objective of the SIET is to develop appropriate programmes to promote the spread of education and to improve its quality at all levels through all means of instructional technology, including the mass media. To begin with, the SIET will concentrate on the universalisation of elementary and adult education, and will make intensive use of radio, television and print media. The SIET will also be expected to provide

support to other high priority educational programmes, such as expansion of educational opportunities at the secondary level through radio-cum-correspondence courses.

2. Conceptual Framework

The Educational Technology programme is conceived to overcome the drawbacks of the traditional system of education, such as inappropriate content and inability to reach the large numbers in need of education and training. The Educational Technology programme will make use of non-formal methods of education designed to develop new approaches and new means to cater to the needs of in-school and out-of-school groups. The Educational Technology programme has the potential to achieve high quality as it is possible to deploy the best talent available for producing well-researched programmes to large audiences without the vagaries of individual teachers coming into play. The high quality is all the more important for motivating the learners and also for developing self-instruction habits.

The Educational Technology programmes will be so designed as to supplement the work of teachers. Besides enriching the learning situations these programmes will expose the teachers to innovative methods employed by these programmes, in itself a form of training and will ensure the support of the teachers for the Educational Technology programmes.

In view of the diverse languages and the varying educational needs of groups in different areas, it is essential to have a network of institutes and centres of Educational Technology to cover the whole country. An Institute of Educational Technology in each State and Union Territory is an essential part of this network.

3. Organisational Set up

The SIET should be set up as a distinct institute by the State Department of Education, outside its existing formal structure because none of the existing institutions is equipped to take on the Educational Technology functions. The SIET should have functional autonomy to enable it to attract talent and to have freedom in programme operations.

Since the SIET will need special care during its formative years, it should be provided with all the resources necessary for experimentation and launching of large scale programmes. The cooperation and support of the Education Department and the Directorate of Education is essential for its successful and smooth working.

The SIET will work in close collaboration with the SIE, SISE, SCERT, Teacher Training Institutes and other agencies and draw upon the talents in various disciplines available with them. The SIET will absorb the existing audio visual and other facilities coming within its purview.

In the larger perspective, educational technology is part of the total system and as such any institutional arrangement that may be visualised will have to keep in view the need for a very close and constant interaction between the SIE/SCERT and the SIET.

While, ultimately, these two may have to be merged, educational technology will require a certain focusing over the next five years. In this context the Working Group took note of the way in which the Centre for Educational Technology was established as a separate institution initially but was later merged with the NCERT. Some such pattern is visualized with respect of the SIET as well.

On the programme production and transmission side, the SIET will work in close cooperation with the Akashvani and Doordarshan Centres where programme generation will take place. This means that the SIET will have to decentralize programme planning and production.

4. Functions

- to advise the State Department of Education in the formulation of educational technology policy which is specifically aimed at the exploitation of mass media in spreading and improving educational norms
- to carry out surveys of target groups to assess their educational needs
- to supervise the working of reception centres to be set up, equipped and staffed by the State Department of Education
- to develop programmes aimed at removing the drawbacks of the educational system whether in the content or the methods of teaching in both the formal and non-formal structures
- to evaluate the programmes on a continuous basis
- to develop in collaboration with other concerned agencies, special courses of content and related scripts for radio and TV broadcasting paying particular attention to the preparation of support materials for radio and television broadcasts
- to select personnel and arrange for their training in local, Indian and overseas contexts
- to act as the secretariat to the State Council for Educational Technology.

5. Physical Facilities

It is absolutely necessary for SIET to have a functionally designed building with an appropriate campus of some amplitude for the development and operation of its programmes. This requirement has not been fulfilled and it would be disastrous for the educational technology programme if the authorities concerned continue to ignore this basic need.

The spaciousness of the campus is emphasized because a basic function of the SIET is experimentation and innovation. The testing and carrying out of pilot projects in the fields of agriculture, handicrafts, art design, etc. demands more space and appropriate functional structures.

Whereas the administrative areas and the educational and technical areas inclusive of hostels, auditorium and staff quarters can fit into a compact area of 5 acres or so, the project and extension work will need mobile space with only temporary structures which could be frequently refurbished to suit various types of experimental and pilot projects. It is expected that another 10 acres will be required for this purpose. The details of the space required for technical areas and auditorium are given in Appendix IV.

A list of the equipment is at Appendix V. The radio and TV component of the equipment is the basic minimum requirement for training and prototype production. The actual production of programmes will be carried out at the Akashvani and Doordarshan Kendras. The question of providing animation equipment needs to be gone into carefully. In any case, the indigenous development of appropriate animation equipment should be encouraged and a provision made for that purpose. Appropriate amounts of foreign exchange should be provided for importing essential equipment not being manufactured in the country. In order to achieve economy, the equipment for all SIETs should be purchased in bulk by a central agency.

6. Manpower Requirements

The first and foremost task is the identification of leadership talent for the development of new educational programmes by the SIET. The education specialists will need exposure to communication theory and practice and the communication experts will require an understanding of the processes of education. The SIET has to become a bridge where education and communication must meet to develop educational technology for resolving the enormous educational problems. In course of time, specialists well-versed both in education and communication will emerge. In the meanwhile specially designed programmes of training will need to be organised to equip the SIET personnel to perform the Educational Technology functions.

The Ministry of Education should sponsor a training opportunity of three months' duration for the future personnel of the SIET who will have to combine in themselves communication articulation and educational sensibility to put through the programmes. As this is the first time, anywhere in the world, that such a massive effort is being planned to reach people educationally through radio and television, it is very important that the selection and training of the personnel is done with great care and by people who already have some experience in educational innovation through the use of television, radio, film, video cassettes, etc. The services of outstanding innovators and specialists who have made notable contributions in the area of Educational Technology should be mobilised for this training programme. It must be noted that no existing formal institution of education can provide this kind of training.

The staff requirements are given in Appendix VI. The SIET will have a core faculty, as it is expected to draw upon the pool of expertise available in the State complex of educational and other development agencies. While the job descriptions and detailed qualifications will need to be worked out, it is important that the selected and trained staff should be retained for a sufficiently long period (say a minimum of five years) in the SIET.

The actual production of radio and television programmes will be undertaken by the Akashvani and Doordarshan Centres in collaboration with the State Institutes of Educational Technology which will be responsible for planning programmes, training and prototype production. In the area of print media, the SIET will be fully responsible for all work, including support material for radio and television programmes, corresponding courses, teacher training courses and material etc. Staff requirements have been worked out in the light of these considerations.

7. Cost Estimates

The vast scope of the Educational Technology Programmes, the multiplication of educational programmes to cater to different groups and the use of specialised technology, will call for substantial investment if results are to be achieved. The detailed costing, both for non-recurring and recurring components will need to be worked out, taking into consideration that the cost of equipment is escalating day by day.

The entire non-recurring and recurring costs of the SIET should be met by the Centre for a full five-year period. The provision of ground network for the utilisation of the Educational Technology Programmes, including the personnel, hardware, i.e. television and radio sets, film and filmstrip projectors etc. will be the responsibility of State Governments. The State Governments, will, therefore, have to develop a phased programme to cover the entire State with the required network in five years.

8. FINANCIAL SUPPORT

After considering various approaches, the Working Group came to the firm conclusion that the Educational Technology Programme should be wholly financed by the Centre for the following :

- the development of mass media techniques for education is a new area
- the specialised and technical nature of Educational Technology requires concentration of efforts and resources which cannot be secured by individual State Governments
- the States will be hard put to share the heavy financial resources for the Educational Technology Programme in preference to other compelling demands.

The minimum period for Central assistance should be five years. By that time the basic infrastructure should come into being and operations started. At the end of five years a review should be undertaken to assess the progress made and to consider whether further extension of Central assistance is justified.

The on-going Educational Technology Programme for establishment and operation of Educational Technology Cells in the States should continue to receive 100% Central assistance till these Cells are absorbed by the SIETs.

Educational Technology is a new sub-system of education. Therefore it would be advisable to develop it fully before making it an integral part of the system of education.

It is necessary for all institutions to undertake work in the development of the educational technology programme in their own areas of competence and to provide the requisite funds in their own budgets. However, under the Educational Technology Programme of the Ministry of Education, funds should be provided for specific jobs that these institutions may be contracted to undertake. A block grant of say Rs. 5 lakhs, may also be given to each institution which sets up an Educational Technology Centre.

A suitable policy should be evolved for giving financial support to non-governmental agencies working in this field in order to utilise their capabilities extensively. The recommended forms of assistance are :

- provision of resource persons for designing a project and its evaluation
- commodity assistance and out of pocket expenditure on project activity
- grant for publication of reports
- facility for import of equipment for production of material.

Since radio sets are of crucial importance, they should be provided by the State Government where possible with the support of the community. There could be two approaches for the provision of radio sets :

- to cover the entire State with radio sets as has been done in Tamil Nadu and
- to provide radio sets to schools or centres which are included in a special project built around a radio station in those States which cannot immediately provide radio sets to all schools or centres.

Specific projects at the micro-level covering the schools in the transmission area of the radio station or part of such area could be considered for funding from Central sources or the Plan allocation earmarked for educational technology. An intensive development strategy could thus be considered for selected areas. Such a project should cover all aspects of educational technology and identify the resources available and the extent of support necessary from the State and Central Governments.

The Planning Commission is providing Rs. 7 crores for software for radio, of which Rs. 2 crores are allocated for Research and Development in radio broadcasting and television. Unless appropriate measures are taken, it would be difficult to utilise fully the provision for Research and Development in this area.

9. COORDINATION AND LINKAGES

Perhaps the major weakness of SITE was that the linkage between ministries, departments, institutions, voluntary organisations, field agencies and personnel were not

strong enough, It is recommended that appropriate structural arrangements should be made to ensure a high degree of coordination between all agencies concerned. There must be perfect coordination between the SIETs and the Akashvani and Doordarshan Centres. The coordination mechanism suggested for the purpose should be at three levels—Station, State and Central—as follows :

1. Station Level Committee

An Advisory Committee at the station level is necessary in view of the considerable amount of work relating to planning and programme generation involved. This committee should be headed by Station Director, TV/AIR and may include representatives of beneficiary groups, etc. teachers, leaders of public opinion, teacher training institutions in the area, women workers in touch with women's groups, parents, extension training institutions, writers of children's literature, State Department of Education, State Institutes of Educational Technology/Educational Technology Cell and broadcasting stations. The terms of reference of this Committee may be :

- to mobilise support and participation of community in programmes of educational development
- to create in the community an understanding of the role of media in development
- to assist in preparing broadcasting plan with support material
- to ensure constant evaluation, supervision and improvement of the quality of broadcasts.

The Station Director will be responsible also for convening the meetings of the Committee.

2. State Level Committee

This Committee should comprise representatives of the Akashvani and Doordarshan as well as all State-level agencies concerned with development and education e.g. department of education, rural development and panchayats, social welfare, tribal welfare, agriculture, health, universities, etc. This Committee should serve as the State Educational Technology Council, with the following functions :

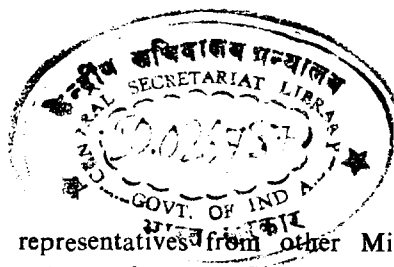
- to lay down policy and guidelines for statewide programmes
- to coordinate functioning of local station committees (All India Radio/Doordarshan) and to lay down broad guidelines for their work
- to ensure that a judicious balance is maintained between needs of the different communities, groups and regions
- to ensure technical and other inputs for proper development of need based programmes
- to evaluate effectiveness of programmes.

The Head of the State Institute of Educational Technology will be responsible for convening the meetings of the Council.

3. Central Level Committee

The Committee at the Central level may include representatives of the following :

- Doordarshan
- Akashvani
- Ministry of Information and Broadcasting
- Indian Institute of Mass Communication
- NCERT
- National Staff College
- Directorate of Adult Education
- Ministry of Education (Education, Culture, Technical Education)
- Non-governmental agencies engaged in areas of relevance of educational technology
- University Grants Commission.
- National Book Trust
- Planning Commission



A provision should be made to coopt representatives from other Ministries such as Social Welfare, Agriculture, Health and Rural Development for programmes in their areas of work.

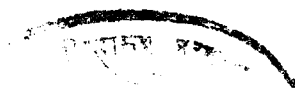
Education Secretary will be Chairman of this Committee and the concerned Joint Secretary its convener. The Committee would meet at least twice a year. Its terms of reference would be to adopt the policies and programmes, to coordinate activities of various ministries, State governments. agencies and institutions concerned and to oversee implementation of the Educational Technology programme. A small group may be set up to monitor the programme.

The Working Group also recommends that a Standing Committee may be constituted to oversee the Educational Technology Programme and to assist the Ministry of Education in the formulation of a policy for educational technology. It should have both official and non-official members.

10. HARDWARE : MANUFACTURE AND MAINTENANCE

Production Equipment

Efforts should be made to encourage indigenisation of hardware with a view to developing inexpensive, compact, light weight and highly reliable equipment that would help universities, programme producers and programme receiving agencies to participate



in programme production. This would not only decentralise programme production but would also enable the user agencies to mould the medium for their own purposes.

The working Group felt that there was a need for the qualitative assessment of the technology available and that required for the Educational Technology Programme.

Radio

In view of the emphasis on the use of radio for universalisation of elementary education and non-formal education which will involve a very large number of radio sets, the Government should ensure that radio sets are manufactured and supplied to educational institutions at a very low cost.

Maintenance

For proper maintenance of Radio and Television receivers, the following steps are recommended :

- The Division of educational Technology of the Ministry of Education should commission a workbook on making low cost radio receivers and maintenance of commonly available radio receivers. Such a workbook will enable a local enthusiast in the rural areas to make a low cost radio receiver and/or maintain available radio receivers.
- Similarly a workbook on maintenance of television receivers may be commissioned to Space Application Centre who have gained experience in this field.

Films

Films are an important component of educational technology particularly for non-formal education. Though there are about 15,000 working 16 mm projectors in the country and about thousand 16 mm projectors are being manufactured annually, their utilisation is extremely poor.

Apart from the state film libraries, an important source of film lending is the Central Film Library under the NCERT in New Delhi. It has about 8,000 titles and about 4,000 members. But regular borrowers are few. This is because of the dearth of educational films that would meet the needs of Indian school children. Therefore, it is high time that efforts should begin to capitalise on the investments we have already made on the hardware. It is obvious that for better utilisation of projection facilities, production of effective educational films should be given a high priority. Two specific recommendations in this area are that

- a study group should be set up to review the development and utilisation of educational and children's films in India
- a joint Working Group of the Ministries of Education and Information and Broadcasting should be set up to study the feasibility of the film resources of the Films Division for educational films.

11. MODEL PROJECTS

One of the major tasks of Sub-group I was the development of a few proposals for research and action which would give concrete expression to the thinking and recommendations of the Working Group. A number of agencies (Planning Commission, Centre for Educational Technology, CENDIT, DG(AIR), Ministry of Education) were involved in preparing such proposals. These provide new approaches and cover all priority programme areas making use of all media, either individually or in combination of two or more. While most of these proposals will need to be developed into detailed projects, all of them emphasise a need-based approach, non-formal methods, and continuing evaluation. A list of these projects is given in Appendix VII and the detailed projects form its annexures.

In submitting these proposals, the Working Group underlines the fact that educational technology is a new multi-disciplinary approach which should be applied on a massive scale in order to help in the expansion and improvement of education in the country. At the same time, there are as yet no established and proven forms and strategies for exploiting educational technology. These must be developed through considerable research and investigations and tested for their relevance to Indian conditions. This in itself is a huge task. Therefore the Government would be well advised to set up a Committee or Group not only to assist in the planning and coordination of research projects but also to supervise their actual execution as well as to evaluate their results.

APPENDIX I

Members of the Working Group on Educational Technology

1. Shri P. Sabanayagam ... *Chairman*
Secretary to the Government of India
Ministry of Education and Social Welfare
New Delhi-110001.
2. Shri Mushir Ahmed ... *Represented by Shri K.K. Garg, Deputy Chief Producer, Films Division*
Chief Producer, Films Division
Ministry of Information and Broadcasting
24 Peddar Road
Bombay-400023.
New Delhi
3. *Shri Ajit Bhattacharjea
Deputy Chief Editor
Indian Express, Express Building
9 Bahadur Shah Zafar Marg
New Delhi-110002.
4. Shri Anil Bordia
Joint Secretary (U)
Ministry of Education and Social Welfare
Shastri Bhavan
New Delhi-110001,
5. Shrimati Nirmala Buch
Education Secretary
Government of Madhya Pradesh
Vallabh Bhavan
Bhopal-462004.
6. Prof. E.V. Chitnis ... *Represented by Shri B.S. Bhatia*
Chairman, Software Systems Group
Space Application Centre, Indian Space
Research Organisation
Jodhpur Tekra
Ahmedabad-380053.
7. Dr. Ishwar Dass
Joint Secretary
Ministry of Information and Broadcasting
Shastri Bhavan
New Delhi-110001.

8. Shrimati A. Dayanand
Joint Secretary (S)
Ministry of Education and Social Welfare
Shastri Bhavan
New Delhi-110001.
9. Shri M.V. Desai
Director
Indian Institute of Mass Communication
D-13, NDSE-II
New Delhi-110048.
10. Shri I.S. Gaur
Deputy Director (Planning)
Government of Uttar Pradesh
18 Park Road
Lucknow.
11. Dr. O.P. Gautam
Deputy Director General (Education)
ICAR, Krishi Bhavan
New Delhi-110001. ... *Represented by Shri S.K. Mukherji, Assistant Director General (Agriculture Education) IARI New Delhi*
12. *Shri A.S. Gill
Additional Secretary (Culture)
Ministry of Education and Social Welfare
New Delhi-110001.
13. Shri Girdhari Lal
Deputy Secretary
Ministry of Education and Social Welfare
New Delhi-110001.
14. *Shri Girilal Jain
Editor, Times of India
7 Bahadur Shah Zafar Marg
New Delhi-110002.
15. Shri T. Jankiraman
Chief Producer (ED)
Directorate General All India Radio
Akashvani Bhavan
New Delhi-110001.
16. Dr. S.K. Mitra
Director, NCERT
Sri Aurobindo Marg
New Delhi-110016.

17. Mrs. V. Mulay
Principal, CET
NCERT, Sri Aurobindo Marg
New Delhi-110016.
18. Dr. D. Shankar Narayan
Additional Secretary
University Grants Commission
Bahadur Shah Zafar Marg
New Delhi-110002.
19. Shrimati Padma Ramachandran
Joint Secretary (Women's Welfare)
Department of Social Welfare
Shastri Bhavan
New Delhi-110001.
20. Shri C.G. Rangabashyam
Education Secretary
Government of Tamil Nadu
Fort St. George
Madras-600009.
21. Shri Romesh Chander
Editor-in-Chief
Television News Feature
A-30 Defence Colony
New Delhi-110024.
22. Dr. S.N. Saraf
Chief, Education
Planning Commission, Yojna Bhavan
Parliament Street
New Delhi-110001.
- ... *Represented by*
Shri T.N. Dhar
Joint Secretary
Planning Commission
23. *Shri H.S. Shahani
Joint Educational Adviser (T)
Ministry of Education and Social Welfare
Shastri Bhavan
New Delhi-110001.
24. Shri A.P. Shinde
Controller of Programme
D.G. Doordarshan
Mandi House
New Delhi-110001.

25. Shri Krishan Sondhi
Consultant, Planning Commission
Yojna Bhavan, Parliament Street
New Delhi-110001.
26. Shri Anil Srivastava
Director
Centre for Development of Instructional Technology
3 Birbal Marg, Jangpura Extension
New Delhi-110014.
27. Shri D.M. Sukhthankar
Education Secretary
Government of Maharashtra
Sachivalaya
Bombay-400032.
28. Shri P.K. Umashankar
Joint Secretary (Planning)
Ministry of Education and Social Welfare
Shastri Bhavan
New Delhi-110001.
29. Shri S.H. Vatsyayana
Editor
Nav Bharat Times
7 Bahadur Shah Zafar Marg
New Delhi-110002.
30. Miss S. Rahman ... *Member Secretary*
Deputy Educational Adviser
Ministry of Education and Social Welfare
Shastri Bhavan
New Delhi-110001.

APPENDIX II

MEMBERS OF THE SUB-GROUPS

I Programming For Educational Technology

1. Dr. S.K. Mitra ... *Chairman*
Director, NCERT
Sri Aurobindo Marg
New Delhi 110016.
2. Shri Krishan Sondhi
Consultant
Planning Commission
Parliament Street
New Delhi 110001.
3. Dr. D. Shankar Narayan
Additional Secretary
University Grants Commission
Bahadur Shah Zafar Marg
New Delhi 110001.
4. Shri K.S. Puri
Education Secretary
Government of Nagaland
Kohima.
5. Shri B.S. Kesavan ... *Chairman in the absence
of Dr. S.K. Mitra*
39 Anand Lok
New Delhi-110049,
6. Shri I.S. Gaur
Deputy Director (Planning)
Government of Uttar Pradesh
18 Park Road
Lucknow.
7. Dr. A.W. Khan
Director
Farm & Home Unit
Akashvani Bhavan
Parliament Street
New Delhi 110001.

8. Shri Anil Srivastava
 Director
 Centre for Development of
 Instructional Technology
 3 Birbal Marg
 Jangpura Extension
 New Delhi-110014.

9. Miss S. Rahman ... *Member Secretary*
 Deputy Educational Adviser
 Ministry of Education
 New Delhi.

Membership of the Study Group

1. Shri B.S. Kesavan
2. Dr. A.W. Khan
3. Shri Anil Srivastava
4. Shri Krishan Sondhi
5. Miss S. Rahman
 Shri Krishan Sondhi was assisted by the
 following officers of the Planning
 Commission.
6. Shrimati Meena Gupta
7. Shri V.P. Saxena
8. Shri A.P. Saxena
9. Shri R.K. Khosla
10. Dr. C.M. Palvia
11. Shri A. Nandi
12. Shri V.V. Bhartiya
13. Shri P. Mathur
14. Shri R.S. Uppal

II Identification of Roles of Organizations

1. Shri Romesh Chandra
Editor-in-Chief TVNF
A-30 Defence Colony
New Delhi. ... *Chairman*
2. Shri M.V. Desai
Director
Indian Institute of
Mass Communication
D-13 NDSE Part II
New Delhi-110043.
3. Shri B.S. Bhatia
Space Application Centre
Indian Space Research Organisation
Ahmedabad.
4. Shrimati V. Mulay
Principal
Centre for Educational Technology
National Council of Educational
Research & Training
Sri Aurobindo Marg
New Delhi-110016.
5. Shri K.K. Garg
Deputy Chief Producer
Films Division
New Delhi.
6. Shri Iqbal Malik
Deputy Director General
Doordarshan
Mandi House
New Delhi.
7. Shri Gopal Gupta
ETV Producer
Upgrah Doordarshan Kendra
Vigyan Bhavan
New Delhi.

8. **Shri V. Neelakantan Unni**
Assistant Director, Programmes
Educational Broadcasts
Directorate General, AIR
Akashvani Bhavan
New Delhi.

 9. **Shri K. Mahajan**
Research Officer
Birla Institute of Scientific Research
13 Mahatma Gandhi Marg
Lajpatnagar-IV
New Delhi-110024 .

 10. **Shri Anil Srivastava**
Director
Centre for Development of
Educational Technology
New Delhi.

 11. **Miss S. Rahman**
Deputy Educational Adviser
Ministry of Education
New Delhi.
- Member Secretary*

III Coordination, Administration and Finance

1. Dr. Ishwar Dass ... *Chairman*
 Joint Secretary
 Ministry of Information and Broadcasting
 New Delhi-110001.
2. Shri J.A. Kalyanakrishnan
 Financial Adviser
 Ministry of Education and Social Welfare
 New Delhi.
3. Shri D.M. Sukhthankar
 Education Secretary
 Government of Maharashtra
 Bombay.
4. Shri C.G. Rangabhashyam
 Education Secretary
 Government of Tamil Nadu
 Madras.
5. Shrimati Nirmala Buch
 Education Secretary
 Government of Madhya Pradesh
 Bhopal.
6. Shri T. Jankiraman
 Chief Producer (EB)
 Directorate General, AIR
 Akshvani Bhavan
 New Delhi-110001.
7. Shri S.H. Vatsyayana
 Editor, Nav Bharat Times
 7 Bahadur Shah Zafar Marg
 New Dehli-110002.
8. Shri A.N. Dhawan ... *Member Secretary*
 Secretary
 Central Tibetan Schools Administration
 Kasturba Gandhi Marg Barracks
 New Delhi.

APPENDIX III

Members of the Committee for preparing a blueprint for the State Institute of Educational Technology

1. Shri B.S. Kesavan ... *Chairman*
39 Anand Lok
New Delhi.
2. Shri D. Bakshi
C/o Centre for Educational Technology
New Delhi.
3. Shri B V. Karanth*
Director
National School of Drama
New Delhi.
4. Dr. P.D. Khera
Department of Sociology
Hindu College
Delhi University
Delhi.
5. Shri Iqbal Malik
Deputy Director General
Doordarshan
New Delhi.
6. Dr. S.K. Mitra*
Director
National Council of Educational
Research & Training
New Delhi.
7. Shrimati V. Mulay
Principal, CET
National Council of Educational
Research & Training
New Delhi.

8. **Shri J. Nanda**
80/III Moti Bagh
Opp. Nanakpura Gurdwara
New Delhi.

9. **Shri Romesh Chander**
Editor-in-Chief TVNF
New Delhi.

10. **Shri Anil Srivastava**
Director
Centre for Development of
Instructional Technology
New Delhi.

11. **Shri V. Neelakantan Unni**
Assistant Director,
Programmes, Educational Broadcast,
Directorate General, AIR
Akashvani Bhavan
New Delhi.

12. **Prof. J.S. Yadav**
Indian Institute of Mass Communication
D-13, N.D.S.E.-II
New Delhi.

Members of the Sub-Committee

1. Shri B.S. Kesavan ... *Chairman*
39 Anand Lok
New Delhi.
2. Shri D. Bhattacharji
Consultant, CET
New Delhi.
3. Shri D. Bakshi
C/o CET
New Delhi.
4. Shrimati V. Mulay
Principal, CET
National Council of Educational
Research & Training
New Delhi.
5. Shri Romesh Chander
Editor-in-Chief, TVNF
New Delhi.
6. Shri S.P. Singh
Reader Engineering, CET
New Delhi.
7. Shri Anil Srivastava
Director
Central for Development of
Instructional Technology
New Delhi.
8. Miss S. Rahman
Deputy Educational Adviser
Ministry of Education
and Social Welfare
New Delhi.

APPENDIX IV

Space Requirement For the State Institute Of Educational Technology

1. Audio and Video Production Area	300 square metres
2. Film Production Area	160 square metres
3. Film Processing and Photographic Darkroom	50 square metres
4. Technical and Property Stores	125 square metres
5. Technical Maintenance Area	25 square metres
6. Film, Photo and Tape Library	50 square metres
7. Animation and Graphics Studio	150 square metres
8. Reprographic Workshop	60 square metres
9. Auditorium	800 square metres
10. Lecture and Demonstration Area	200 square metres
11. Airconditioning Plant and Switch Room	70 square metres
12. Workshop	50 square metres
13. Garage	64 square metres
14. Administration Area	150 square metres
Total Work Area	2254 square metres

Note : Besides the above work area, space allocations are to be made for landscaping, residential quarters for staff and students. The above figures indicate the carpet area only.

APPENDIX V

Equipment For the State Institute Of Educational Technology

1. Reprographic equipment including electronic stencil cutter, electric duplicator, office offset printing machine, electrostatic copier, process camera and related equipment	Rs. 3.2 lakhs
2. Still Photography Equipment	Rs. 0.8 lakhs
3. Screen Printing and Art Studio Equipment	Rs. 0.7 lakhs
4. Audio Recording equipment including recorders, microphones, mixers, recording tapes for film, radio and television sound recording	Rs. 5.2 lakhs
5. Motion Picture Photography Equipment including motion picture cameras, animation stand, film editing equipment, film processing laboratory, etcetra	Rs. 6.7 lakhs
6. Video Recording Equipment including studio cameras, vision mixers, videocassette recorders, portapak, etcetra	Rs. 20.0 lakhs
7. Test and Measurement Equipment including test films, alignment tapes and test charts	Rs. 2.5 lakhs
8. Airconditioning Plant and Equipment	Rs. 3.5 lakhs
9. Vehicles	Rs. 1.2 lakhs
Total	Rs. 43.8 lakhs

Note : A nominal provision of customs duty @ 40 per cent has been made in case of imported equipment, as the import is for educational purpose only.

APPENDIX VI

Staff Requirements For the State Institute Of Educational Technology

1. Director (Professor)

Academic

- | | |
|--|-----|
| 2. Professors as head of academic departments concerned with the application of media and methods for education e.g., educational broadcasting (Radio and TV) and distance learning, film, research and evaluation | 4 |
| 3. Supporting faculty for the department consisting of readers and lecturers-cum-researchers | 4+8 |

Technical and Production

- | | |
|--|----|
| 4. Heads of the technical and production departments (readers) like radio, TV, film engineering, graphic, documentation etc. | 8 |
| 5. Supporting technical and production personnel (lecturers) | 28 |
| 6. Supporting technical and production assistants (in a grade junior than lecturers) | 28 |

Administrative and Supporting Services

- | | |
|------------------------------|----|
| 7. Administrative officer | 1 |
| 1. Clerical staff | 8 |
| 9. Stenographers and typists | 10 |
| 10. Accountant | 2 |
| 11. Driver | 4 |
| 12. Helper | 8 |

Staff Requirement (Details)**(A) Academic Staff**

1. Director/Principal	Professor	1
2. ETV	Reader	1
	Lecturer	1
3. Radio	Reader	1
	Lecturer	1
4. Distance Learning	Professor	1
	Reader	2
	Lecturer	3
5. Research and Evaluation	Professor	1
	Reader	1
	Lecturer	1
	Investigators	2
6. Extension and Resource Centre	Reader	1
	Lecturer	1
	Clerk (LDC)	1
7. Coordinator of services		1

(B) Film Production Planning and Management Staff*(a) Planning and Management*

1. Cine Producer	1
2. Assistant Producer	1
3. Director	1
4. Script Writer	1
5. Production Manager	1

(b) Field Staff

1. Camera Men	included in general pool See ETV
2. Unit Managers	2
3. Helpers/Khalasis/Lightmen	2

(c) Auxiliary facilities

1. Film Editor	1
2. Film Joiner	1
3. Technical Assistant	1
4. Projectionist	1
5. Film Processor	1
6. Assistant to Film Processor	1
7. Still Photograph (a) Senior	1
(b) Junior	1

(C) ETV Production Staff

1. Producers	2
2. Production Assistants	2
3. Cameramen for TV and Film	
(a) Senior Grade	2
(b) Junior Grade	3
4. Sound Recordist (a) Senior Grade	1
(b) Junior Grade	2
5. Floor Manager	1
6. Floor Assistant	1
7. Make up	
8. Set Construction and Property Section	
(a) Carpenter-cum-painter	1
(b) Helper/assistant	1
(c) Wardrobe-cum-property assistant	1

(D) Radio Production Staff

1. Radio Producer	2
2. Production Assistant	2

(E) Engineering Section for Running and Maintenance

1. Engineer-in-charge		1
2. Assistant Engineers	{ TV Radio Maintenance	3
3. Senior Engineering Assistants	(a) Vision Mixer (b) CCU (c) Telecine and Lighting (d) VTR (e) Radio Control Room	1 1 1 1 1
4. Engineering Assistant	(a) TV Sound Mixer (b) Radio Sound Mixer (c) Sync/Sound R/R Studio	1 1 1
5. Technicians	(a) Lighting/Audio (b) Telecine (c) A/C (d) Maintenance (e) Radio Control Room (f) Sync Sound R/R Studio	1 1 1 1 1 1
6. Khalasi		6

(F) Graphic Section

1. Graphic Chief		1
2. Artists		2
3. Lettering Artist		1
4. Attendant-graphics		1

(G) Documentation Section

1. Documentation Officer		1
2. Video and Film Library	(a) Librarian (b) Assistant	1 1

3. Audio Tape Library	
(a) Librarian	1
(b) Assistant	1
4. General Library	
(a) Librarian	1
(b) Assistant	1
5. LDC	1
(H) Technical Stores	
1. Stores Supervisor Technical	1
2. Stores Clerk	1
3. Helper/Khalasi	1
(I) General Staff	
1. Field Vehicle Driver (Diesel)	2
2. Staff Car Driver	2
3. Stenos	2
4. Typist/LDC	2
5. Electronic Stencil Cutter Operator	1
(J) Auditorium	
1. Projectionist	1
2. Film Rewinder/Assistant	1

Model Projects

The following projects have been suggested by :

A. Centre for Educational Technology

- (i) Teaching of first language by Radio
- (ii) A demonstration project for non-formal education of out of school children of age group 11 to 15
- (iii) A demonstration project for in service training of primary school teachers

B. Centre for the Development of Instructional Technology

- (iv) Educational material for children based on print media
- (v) Distance learning experiments for non-formal education of children
- (vi) Community education broadcast experiment
- (vii) Contract programme for elementary school teachers
- (viii) Film resources project
- (ix) Evaluation of multi media package for teachers
- (x) Children's textbook research and prototype production project
- (xi) Experiment in slow scan television

C. Central Board of Secondary Education

- (xii) Open school project

D. Planning Commission

- (xiii) Role of television in formal system of primary education
- (xiv) Use of TV for non formal education
- (xv) TV as a medium of motivation for adult education
- (xvi) Functional literacy components in adult education

- (xvii) Impact of films on rural development
- (xviii) To utilize the channel of agriculture extension for education of farmers
- (xix) Multi media package for in-service training of primary school teachers
- (xx) To determine the role of TV as a medium of motivation for adult education
- (xxi) To evaluate the effect of alternate channels for primary school education
- (xxii) To evaluate the impact of TV on functional literacy components in adult education
- (xxiii) To evaluate the effects of alternate channels in non-formal education
- (xxiv) Cost effectiveness of in-service training of primary school teachers through various media.

E. All India Radio

- (xxv) Farm school on the AIR—an approach to non-formal education

F. Ministry of Education

- (xxvi) Enrichment programmes for children in school
 - (xxvii) Continuous enrichment programme for teachers
-

Teaching of First Language by Radio

A. Title

Teaching first language in primary schools with the help of Radio.

B Need for the Project

- (i) All India Radio has been broadcasting radio programmes for Schools for almost 45 years now. A large number of these programmes have been addressed to of middle and secondary schools. Considering the rate of dropout, the students number of first generation learners and the general deprived conditions of the primary school, it is felt that this is the stage which needs maximum support in improvement of teaching-learning situation.

- (ii) Learning to speak, read and write first language is one of the most important aims of primary stage. It is felt that radio can provide the necessary support for improved learning of the language on a mass scale.

C. Objectives

- (i) To improve learning of the first language at the primary school level with the help of radio
- (ii) To try out the materials, and the delivery system
- (iii) To explore its feasibility with larger population.

D. Specific Objectives

- (i) To develop radio communications and support materials for children as a complete set of teaching learning materials for first three years of primary schools.
- (ii) To develop teachers' manuals to guide them in organising learning materials/ situations.
- (iii) To develop an effective system of communication with teachers, delivery of support materials, and maintenance of receiving sets.
- (iv) To develop a system for continued and effective feedback from teachers and administrators.

(v) To carry out comprehensive evaluation of the materials produced and system developed.

(vi) To test appropriateness of various formats.

E. Target Populations : Children in Classes I to III in primary schools.

Media : Radio, print and teacher

Duration : 4 years.

PHASE—I : 1977-79

(1) *Plan of work :* A planning group consisting of experts in language teaching, production experts, and research workers will design a radio-curriculum that is support material and teacher intervention based on the accepted curriculum for first language. This group will decide :

(i) Coverage by and content of radio programmes

(ii) Frequency and duration of broadcasts

(iii) Nature and content of support material needed for broadcasts

(vi) Mode of training for user teachers and administrator.

(2) *Curriculum workshop*

Detailed programme schedules will be planned at workshops.

(3) *Workshops for Script Writing and Developing materials*

Workshops will be organised to develop scripts of radio programmes, support materials, teachers notes, etc.

(4) *Production of programmes and support materials*

The programmes and support materials produced will be finalised after testing and necessary modifications.

(5) *In-service training of user teachers and administrators*

Administrators and other resource persons will be trained for training the user teachers.

PHASE—II : 1979-82

(6) *Actual broadcast of the programmes*

This will be done during phase II of the project as follows :

First year-class I

Second year-classes I and II

Third year-classes I, II and III

(7) *Evaluation*

Continuous evaluation will be an integral part of the project. Data will be collected for answering many important questions during three years of Phase II.

PHASE III : 1982-83

(8) *Analysis of data and report writing*

Project will continue for at least 8 months in 1982-83 to analyse data collected during Phase II and also Phase III and prepare a report of the project.

PROJECT (II)

A Demonstration Project for Non-Formal Education of Out of School Children of age-group 11 to 15

This will be an attempt to facilitate education of out of school children who are semi-literate or illiterate. They are likely to be assisting the adult labour force, sharing smaller responsibilities. It is assumed that they have neither the inclination nor the facility to attend the formal elementary school. Also they are too mature to learn at the rate and with the materials which are used for beginners in the school.

Objectives

- (i) to motivate and help children to learn to read, write and do simple computations relevant to their day to day living.
- (ii) to develop positive attitude to learning

Target Audience

All non-school going children in the age-group 11-15 years in 400 TV villages of one of the SITE States.

Duration

Five years of which the first two will be used to develop the curriculum, produce the materials, identify adult contacts and to train them. The remaining three years will be for the operation and evaluation of the project.

Media

TV, Radio, Print and inter-personal communication.

Methodology/Procedure

This pilot project is primarily aimed at facilitating acquisition of basic skills of learning namely reading and writing for the children of 11-15 years of age through non-formal education by using a multi-media mix consisting of TV, Radio programmes, picture posters and other print materials and person to person contact with the help of specially trained adult intervener. The adult intervener can be a youth leader of the village and will be selected and paid for the job suitably. The total clientele will consist of 10 to 12 thousand children residing in 400 TV villages in the SITE continuing areas of one of the States. The daily programme will be planned for duration of two hours. For 4 days in a week, there will be a TV programme for half an hour, on the two other days

of the week radio will replace TV. Sunday will be a holiday. The rest of the 1½ hours will be devoted to discussions, activities suitable for developing skills mentioned earlier. The radio and TV programmes will be used for motivating children to learn, in getting them interested in reading/writing. Different kinds of format of radio and TV programmes will be tried for their effects on the audience. Generally, the cost of programming, production and delivery will be on the high side during the pilot project, but the multi-media package, once developed, will be capable of being repeated for several years on similar target groups and thus the per capita cost of educating these deprived group of young children may finally be lower than the normal per capita cost on formal education. The project will comprise the two phases described below :

PHASE—1 : 1978—80

Planning

The detailed strategies relating to the planning and operation of the project will be chalked out. The detailed curriculum to be covered through radio, TV, posters, pictures, books etc., and through person to person contact will be worked out by organising a series of workshops involving knowledgeable persons and experts in different areas. It would be desirable to explore the environment and interests of the target audience. These information will provide situations etc. for utilization in communication production.

Having worked out the detailed curriculum, the next step will be to develop TV and Radio programmes, scripts, design of posters, pictures and other allied print materials. This will be done through workshops and by commissioning individual assignments on payment basis.

The production of TV and radio programmes and allied print materials will start at least one year before the actual operation of the project and will continue throughout the project. Production involve tryout and revision.

Training of Adult Intervener

Adult interveners will be appointed to organise, conduct and supervise the programme at different camps. They will be given a week's training and provided with guide books.

PHASE—2 : 1980—83

Actual Operation

This phase will be of three years. All the 400 TV centres will receive broadcasts every day. In 200 of them adult interveners will work everyday while in the others, they will meet the group once a week. This will enable us to study how far the media alone (without the intervener) can influence the viewers.

Evaluation

Evaluation will be an integral part of the project and will be conducted on a continuous basis. Data will be collected for effecting mid-course corrections and modifications.

PROJECT (III)

A Demonstration Project for Inservice Training of Primary School Teachers

Although most of the teachers in primary schools have received training for two years before employment, inservice training is needed for all professional personnel to refresh their competence and imbibe new knowledge related to their work. The primary school teacher needs it most as very frequently he/she is deprived of the most common source of knowledge namely books (library). This training programme provides an opportunity for the teachers to learn at their own place of work through multi media.

Objectives

To help teachers to understand such variables and situations that need to be kept in mind when designing teacher-learning strategies in the classroom as would maximise learning for each child.

Specific objectives

The teacher would consolidate and be able to apply knowledge of the following towards improvement of learning of his students :

- children are different from each other
- physical, intellectual, social, emotional development of children of 5—14
- teaching-learning strategies in the classroom
- learning by doing
- learning the play way
- children learn at different rates
- providing for individual differences in group situations
- children learn from each other, from home and community.

Target Groups

All teachers in primary schools equipped with a TV monitor in any SITE State.

Media

TV, radio, print, and contact programme.

Methodology/Procedure

The pilot project will be operated in 400 TV villages of the SITE continuity areas of one of the SITE States. The approximate number of teachers likely to benefit from the programme will be about 1,000 to 1,200 in the first instance. A programme will be telecast once a week preferably on every Saturday during the last hour of the school time table which will be made available for this purpose. The children will be let off on Saturdays one hour earlier than the usual closing time of the schools. During this one hour period the teachers will watch a 20 minute TV programme followed by a 20 minute discussion. A radio communication of 15-minutes may follow this. They will also be provided with relevant reading materials. The printed materials will be written on self-instructional style and the teachers will be able to use them independently.

The contact programme will be carried out in two years. Firstly, the teachers will have a two hour contact programme once a month at the office of the A.D.I., as the present practice goes, the teachers assemble every month to get their salaries. The area inspectors/ADIs will be given special training for this teacher contact programme. They will also be requested to watch and listen to all broadcasts and keep abreast of the print material sent to the teachers, this would help them to lead the group discussion every month.

Secondly, a talk back system through the TV will be evolved to have contact with the teachers. This will be done by inviting queries and clarifications from teachers by post and answering them through television programmes once a month, say on every second Saturday of the month. A provision for pre-paid postage facilities will have to be made for eliciting teachers reaction on TV/Radio programmes.

The pilot project will last 2½ years and will consist of the following two phases :

PHASE I (first 18 months)

Curriculum Planning

Under the first phase a detailed curriculum for the entire project will be worked out. This will be done in a series of workshops involving educationists, teacher trainers, media experts, State Departments of Education etc. Role of various media in the programme will be clearly defined. Intermixing and interdependence will be seen as strengths.

The scripts for radio, TV and print material may again be developed in special workshops with opportunities to persons involved to meet and interact whenever necessary. Alternatively a small team of 3 to 4 persons may develop the total materials for a sub area (topic).

All materials would keep the rural situation in mind. Materials should also be tried out and revised suitably before the same are actually extended to the teachers.

Simultaneously, some training/orientation will have to be imparted to ADIs concerned. Since this will be a small group, it can be trained directly by the agency responsible for preparing and executing the programme.

PHASE II

The programme will be offered for one academic year.

Evaluation

Evaluation will be an integral part of the project. Teachers' participation in evaluation will be ensured by eliciting their reactions, comments and answering their questions. The executing agency will try out the materials before the programme is received by the teachers. Quarterly evaluation of changes in teaching practices/organising learning environments would be made by executing agency. Evaluation by an independent agency would be desirable.

The unique feature of this pilot project of training inservice teachers is that it cuts down heavily on the expenditure usually incurred on TA, DA, honorarium etc. on the participants and resource persons. The expenditure on all these items will be nil. The total cost on planning and production of materials will be further lowered if the pilot is repeated and the programmes are used again and again, at different places. Estimates of other expenditure are appended separately.

Tentative Budget Estimates for the Demonstration Project for In-service Training of Primary School Teachers.

A. Planning and development of detailed curriculum for the entire project, (3 workshops @Rs. 7,000/- per workshop).	21,000.000
B. Development and Tryout of film/TV, radio scripts and MSS of print material. (2 workshops each for Film, Radio and Print Materials 2 x 3 x 14,000/-)	84,000.000
C. Production of Film/TV, Radio programmes and print materials	
40 films (2 reeler) @ Rs. 50,000/- each	20,00,000 000
40 Radio programmes @ Rs. 500/- each	20,000.000
Print materials Rs. 25,000/-	25,000.000
D. Training/Orientation of ADIs/Contact persons.	10,000.000
E. Supporting staff for the project 4 Project Officers @ Rs. 1500/- p.m. for 30 months	1,80,000.00
F. Miscellaneous Expenditure on TA/DA, Contingencies, Secretarial assistance, office stationery and other sundry expenditure.	60,000.00
Total ...	24,00,000.00

PROJECT (IV)

Project Discovery : Educational Materials for Children Based on Print Media

There is continuous need to improve educational materials for school children especially for rural schools where the educational materials, mainly textbooks are colourless, drab, uninteresting and of little relevance to their needs. It has been generally felt that prototypes of materials based on an extension approach as different from classroom approach are needed

Objectives

To assess the need for “extension” materials for school children and determine the “product profile” for them

To prepare 12 packages of such materials based on self and programme learning principles

To evaluate these packages

To assess the cost of adapting/adopting these extension learning materials for all over the country and then to prepare a scheme for producing them on a regular basis.

Methodology

A small creative group will be formed for this project consisting of a pedagogic expert, a programmed learning specialist, a visualiser, a writer of children’s literature and/or text books and an editor of school books/children’s literature, who will also head this group.

This group will visit schools on a random-sample basis and meet with persons concerned with juvenile media and school education. These visits and discussions will help them develop a profile of the extension material needed.

On the basis of these profiles the creative group will then proceed to sub-contract the work of developing the actual prototypes to individuals or institutions. The creative group will interact with the sub-contractor developing the package at all stages and will closely supervise its development.

Once the material is ready, the creative group will coordinate its field testing with the State Educational Technology Cells/State Institutes of Educational Technology.

A package would consist of printed material, small objects, photographs and hand operated film/filmstrip/slide viewer. The package would be open ended to provide a process of discovery for the child. A high quality will be maintained.

Distance Learning Experiments for Non-Formal Education of Children

According to the Interim Report of the Working Group on Universalisation of Elementary Education, the clientele to be served by non-formal part-time programmes of education would largely consist of the following :

- children of the weaker sections like the scheduled castes, scheduled tribes, those in hilly areas, tribal areas, urban slums and other economically backward rural areas. There are a large number of children among these sections in the age group 6-14 who have either never entered the formal school or have dropped out. They are helping the family in a number of ways and the school time does not suit them. Given the facility of schooling at a suitable time and place and with relevant curriculum, they might like to avail themselves of the educational facility and might like to rejoin the formal school system at some appropriate stage.
- girls in the age group 6—14 who are not attracted by the existing programme of education being offered by the formal elementary school. These girls may generally not be interested in joining the formal school at any stage. Thus they would need an educational programme tailored to suit their requirements as citizens and future house-wives and mothers.
- boys and girls (generally boys) in the age group 6—14 who are employed in professions like carpet-weaving, pottery, etcetra. These children need only a part-time programme of general education which may be focussed around literacy, numeracy and citizenship training.

Objectives

To examine the feasibility of part-time non-formal elementary education for children in rural areas using distance learning methods.

To identify the possible (and unique) role that distance learning systems like radio, television and learning packages can play in the process. Also to determine whether these can provide an independent learning system.

To assess the cost-effectiveness of the alternative independent distance learning system. The expansion of the formal school system to reach these children would involve the kind of resources that are not likely to be available in the near future.

To evolve a working culture which will support a holistic system involving the elaboration of the underlying philosophy, statement of the hypothesis, planning the infrastructure necessary to support the experiment, training, formative research, evaluation and of course the implementation of the project.

Methodology

This experiment will emphasise the entertainment aspect for motivating children to be drawn towards the learning process.

According to Albert Einstein, "combinatory play seems to be the essential feature in productive thought" and "Broadcasting is entertainment. Neither radio nor television has any function if it does not promote enjoyment. Entertainment is more than relaxation. It implies pleasure, laughter, the awakening of interest, and recreation". (Working Group on Autonomy for Akashvani and Doordarshan).

Four different sites will be selected for this experiment. The principal medium in each will be

- Radio
- Television
- Print plus films
- Printed books.

A Working Group for this experiment will be created consisting of the following :

- Joint Secretary in the Union Ministry of Education and Social Welfare responsible for educational technology
- Joint Secretary in the Union Ministry of Education and Social Welfare responsible for non-formal education
- Secretaries of Education of the States in which the experiment is located
- A nominee of the National Council of Educational Research and Training
- Directors of the radio and television centres involved in the experiment
- Five resource persons with expertise and/or experience relevant to the Experiment.

The Working Group will

- prepare a detailed plan of action in consultation with individuals and agencies concerned with the experiment ;
- coordinate all activities for the experiment including research ; programme production, community viewing arrangement, etcetra ;

- provide direction to the experiment ;
- ensure that support material is prepared and is made available for the experiment ;
- ensure that creative and non-formal approach to education is not destroyed by the exigencies of big media like television or the “school” approach to education.

The experiment will not be launched unless the detailed blue print is ready.

As a cooperative activity the experiment will involve all the concerned individuals and agencies in research, field work, programme production and evaluation. Within an overall conceptual framework the programme production will be decentralised and it is expected that substantial use will be made of the programmes produced by other agencies. However, the working Group will be required to nominate a five member Task Force to look after day to day routines like programme/material procurement, scheduling, monitoring, etcetra.

The programme guidelines will be detailed by the Working Group in consultation with researchers so that measurable variables are introduced for a reasonable estimation of the effect of the experiment.

This experiment will be for one year.

Community Education Broadcast Experiment

“There is little doubt that by opening up new worlds of knowledge and opportunity, broadcasting can be a powerful liberating force. It is in this sense and not in terms of formal instruction that radio and television are truly great teachers. Their power to awaken and conscientize is something that no developing nation can afford to ignore.

Development must mean participation. This is what democracy is about. Participation is a process that must begin with awakening, mobilisation, education, organisation, action, consolidation, growth and on to fulfilment. Organisation brings coherence, courage, learning, strength, achievement.

The learning system in the rural area can break away from the heritage of the traditional system and develop the many technologies of learning rather than the dependency skills that we are familiar with, and cooperative endeavours, where there can be a sharing of knowledge and investing of aptitudes, when confronting a problem. It is a system of self-reliant, problem solving, liberating-learning that is envisaged, which is exactly what we mean by education for rural development”.

Objectives

The objectives of this pilot project are to determine the validity of applying community involvement and community development techniques to give the people of rural India a new means of assessing their own values, problems and development goals, as well as new techniques and tools to assist them to work towards these goals. The purpose is to open up communication channels within communities, between communities and decision makers. The objectives for the research will be :

- To investigate the practical difficulties of introducing community video approaches into India
- To investigate the extent to which the community video project increases communications within and between small rural communities, and between rural communities and decision-makers
- To determine the extent to which improved communication leads to social change
- To investigate the social and cultural impact on villagers who have been involved in community video experiments
- To investigate the extent to which the community video experiment leads to better decision making in the community

- To investigate the possibility of extending the project, taking account of costs, village interest, and the extent to which communication beyond the originating village takes place.

Methodology

The project will be located in one of the following areas covered by Doordarshan :

	Population covered		in lakhs Total
	Urban	Rural	
Srinagar	5	20	25
Amritsar	6	14	20
Lucknow	9	46	55
Mussoorie	19	93	112
Raipur	5	6.5	11.5
Muzaffarpur	1.8	17.2	19
Gulbarga	2	4	6

A team consisting of a social animator and two participant observers, who will be primarily researchers, but who must be prepared to assist as much as the experiment permits with the on-site production and organisation of the video experiment. There should also be a centrally-based, more senior researcher, who will coordinate the research activities, and to whom the field-based researchers will report. The following information will be required :

- Description of difficulties or problems in village cooperation
- Reliability and ease of operation of equipment
- Extent to which "professionals" are needed
- Accurate record of costs, manpower, and support services
- Reaction of local government officials and leaders to the project
- Methods by which programmes are communicated, and to whom
- Topics chosen, and method of initiation
- Attitudes of villagers to the experiment
- Changes in social and cultural patterns within the village, as well as improvements in physical amenities that can be traced to the experiment
- Differences in programme format and style associated with different levels of village participation.

This information can be collected as follows :

- Direct observation
- Interviews and written questionnaires
- Official statistics
- Sociological analysis of the villages involved before and after the project
- Survey of neighbouring villages' awareness of the community video project
- Estimates of cost and manpower requirements for extending the experiment
- Analysis of content and style of programmes.

It is important that these community field workers actually stay in the community in which they are working. Thus after training their initial task will be to get to know and be known by all segments of the community to explain their role, to win confidence, to begin to clarify conditions and concerns within the area, to become acquainted with all local government officials at the district and block level with whom the communities must work, and to develop good working relationships. It is a period of research and assimilation, after which the worker and the villagers will begin taping representative monologues, dialogues and meetings which present views and opinions on aspirations, community problems and needs, possible solutions to problems, community values etc. Screenings will then be held throughout the community with existing groups and in addition special village meetings for screenings might be held. It is hoped that through the discussions which develop around these screenings some of the objectives of the project, as outlined above, can begin to be achieved.

In much the same way the worker will try to develop inter-community communications within his area, as well as communications between villagers and government officials. In the latter case, villages might decide to make a video presentation on a particular problem to particular official, and the official might reply in the same way. In addition both radio and television programmes will be produced, mainly by the project staff, to provide the entire country with information on micro development problems. For these purposes as much material as possible should be recorded in the villages.

Once every three months there should be a field staff conference involving all the community field workers. At the end of the second year a thorough evaluation of the work should be conducted, and recommendations made either to terminate the experiment at the end of the third year, to allow it to continue without expansion or modification or to expand it (with or without modification). This pilot project will also simultaneously develop a method for training of field workers for expanded projects.

A detailed diary will be required to be kept independently by each worker.

Cost Estimates

Rs 7.5 lakhs for three years.

PROJECT (VII)

Contact Programme For Elementary School Teachers

Any improvement of education is dependent on the motivation and the development of the teachers of the rural schools. The need to improve the quality of teaching in rural schools is recognised by all. There is an urgent need to determine why the quality of teaching is poor.

An assessment of what is wrong with primary school teaching/teachers is likely to suggest that poor quality of teaching/teachers could be improved by

- a change in attitude
- increased motivation and a sense of belonging
- new pedagogy (for the oppressed)
- enrichment of knowledge (widening their horizon).

Objectives

To establish a computerised mailing list of teachers in rural school.

To develop a set of publications/periodicals which will be mailed on a regular basis. However, these mail shots will be prepared at the State level.

To evolve a method whereby these mail shots serve as a means of communication between the teachers and educational administrators, besides a channel of communicating ideas about the new pedagogy.

Methodology

The project will consist of two streams : (1) collection and verification of addresses alongwith categorization and (2) developing the State level infrastructure for a series of mailings. The mailing list will be computerised using the SESAME programme developed by ILO. This programme is available in India under an agreement between UNESO-ILO and CENDIT. The State-level editorial cells will be required to prepare atleast 100 mailings per year consisting of press clippings, departmental news, new production programmes and activities, pedagogical notes and letters from teachers to the editors. These mailings would be in local language and can be printed at the SIET's reprographic unit.

The Central Mailing System responsible for mailing on a nationwide scale will also be able to arrange for regular exchange of material between state-level editorial cells as also for serving as a clearing house between these cells.

The Central Mailing System will be located in the Ministry of Education and will also provide a mailing list for future educational surveys.

Cost Estimates

Rs. 6.5 lakhs per year.

PROJECT (VIII)

Film Resources Project

A large number of films are produced by Films Division and other agencies. They represent a potential and substantial resource material which can be used in any educational technology programme. Some of the films can be used as they are, some need to be modified, and many films can yield useful extracts.

Objectives

To collect information about films available for educational use on an ongoing basis.

To preview these films with a view to (a) preparing subject-wise and level wise resource list of films (b) extracting film clips which can be used as film inserts in educational television programmes and (c) producing educational films using stock shots in order to test the viability of this method.

Methodology

The institution desirous of undertaking this project will be given a preparatory grant of Rs. 5,000 to prepare a detailed project design and submit it for the consideration of the Ministry of Education, Government of India. The project design should cover the following: (a) A survey of availability of films for educational use; (b) operational objective of the project related to "hard copy" outputs at various stages; (c) estimated number of films which will be previewed and the criteria for selection; (d) the method of indexing and information retrieval; (e) continuous evaluation procedures which should be built in; (f) proposals for preparing four or five film prototypes from stocks; and (g) periodical reporting procedures. Beside the project design, the institution would be asked to submit a note on its capability to undertake this project.

The project will be founded on annual basis. The contracting institution(s) will be required to submit quarterly reports and resource lists, the latter to be published under the Ministry's imprint

This project would contribute (a) to better utilisation of available films which represent a substantial investment of public funds; (b) avoid duplication of efforts for educational television, and (c) reduce the start up time in case of projects which are dependent on film inputs.

Cost Estimates

Rs. 12 lakhs for five year period.

Evaluation of NCERT's Multimedia package for Teachers

The CET of NCERT has developed a multimedia package for science education in primary schools. This package made use of television during the Satellite Instructional Television Experiment and emphasised low cost science teaching aids.

It is suggested that the Union Ministry of Education fund a number of evaluative studies by State Educational Technology Cells to

- evaluate the cost-effectiveness of the package
- seek ways and means to better utilise the already developed materials
- adapt them for local conditions if found suitable
- integrate the package in the regular science education programme thereby hopefully improving the programme
- develop within the ET Cell the capability to plan and execute a meaningful research programme.

For this project an evaluation design (including detailed methodology) would be prepared against a contract by a competent agency with experience of non-formal education, education in rural areas and social science research. Also an awareness of SITE and educational television will be useful in preparing the research design. A suggested model is the manual for block level planning (Macmillan, New Delhi, 1977). The same agency would be required to provide training to the staff of the participating ET cells in research methodology. The primary benefit from this project will be the training of the staff of the educational technology cells in professional research activity. The secondary but none-the-less important result will be the in-depth familiarisation of a package of materials prepared by NCERT which needs to be tried out widely so that the lessons learned could then help policy formulation in this very important area of teacher training.

Children's Textbook Research and Prototype Production Project

A cursory look at the school books reveals that many are inappropriate and inadequate. Very few books are interesting enough for the child. Most of them are badly designed. The need to improve the quality is obvious. Both the contents and the form need innovation. The publishers are concerned with so called "popular" editions—popular because of being prescribed by the largest number of educational authorities. On the other hand there are colourful and unmindful "Indianised" versions of comics. This situation needs to be altered.

Objectives

To survey the quality and nature of books available for children in elementary schools and assess their "appropriateness".

To analyse their suitability and their shortcomings.

To develop prototypes for children's textbooks based on the above analyses.

To field test these prototypes in a number of randomly selected schools.

Methodology

Similar to Project Discovery.

Cost Estimates

Rs. 1.2 lakhs for the survey and analyses.

Rs. 10,000 per prototype for development.

Rs. 2 per copy of prototype books. Atleast 1000 copies of each prototype will be necessary for evaluation.

Experiment in Slow Scan Television

An interesting possibility for India on which the Space Application Centre and the Centre for Development of Instructional Technology are working lies in the development of what is known as slow-scan television systems which can be exploited for educational applications. NCERT's Centre for Educational Technology is also experimenting with simple "radio-vision" techniques such as the use of flash cards, illustrations, graphs and charts that can be used with particular school broadcasts and which can be prepared by teachers or others ahead of time.

Slow-scan television entails the use of very narrow bandwidths to transmit low resolution pictures including pictorial slides, charts and diagrams. The importance here again is that these "slow-scan" television pictures can be transmitted over a radio transmitter though they can only be received on normal television sets or similar (but low cost CCD) "electronic blackboards". Thus, educational and extension programmes could be pictorialised and transmitted from the radio stations. Although reception would still require a television set or a specially developed low cost CCD "electronic blackboard", transmission cost could be reduced greatly through this use of appropriate technology, which lies between conventional radio and conventional television.

It is proposed that an experiment be conducted in the area of adult education. The emphasis will be on functional literacy. This experiment could be jointly conducted by the four agencies concerned, viz, NCERT's Centre for Educational Technology, Space Applications Centre, Department of Non-formal Education, and the Centre for Development of Instructional Technology. The supplementary funds for this experiment should be provided from the Educational Technology Programme and the funds for hardware development can be obtained from the Technology Development Programme of the Electronics Commission. It may be mentioned here that both SAC and CENDIT have an on going technology development project in the field of slow-scan television and therefore most of the funds necessary for hardware will be for the equipment required to be built for the actual experiment.

Open School Project

1. Need for the Programme

In recent years, there has been a phenomenal increase in the facilities for elementary education. In 1974-75, 83.5% of the total population in the age group of 6-11 were enrolled in the primary classes. In classes 6-8, this percentage had a sudden fall from 83.5 to 35.6. Majority of the students drop out on account of various economic and social factors ; chief among them is the inability of the parents, particularly those belonging to backward classes, to finance the education on a long term basis. The children are also needed to help their parents in their pursuits, e.g. agricultural operations. Geographical remoteness is another factor. The middle schools are not easily accessible and the child has to walk a long distance to get education. Furthermore, the girls, education has been the worst sufferer partly on account of the above factors and partly due to other social reasons such as child marriage, unequal status of women etc.

There is a growing realisation that formal schooling system with its limited resources may not be able to cope with the new demands. Necessary efforts, therefore, will have to be made to make Secondary Education available through non-formal channels to as large a population as possible, particularly to disadvantaged groups like backward classes and girls.

2. Open Schools and the Secondary Boards

The Board of Secondary Education in the country have a crucial role to play in extending the facility of education through non-formal channels for they already possess a machinery for preparing syllabi and text-books and conducting examinations. With the infrastructure already existing, it would be easy for the CBSE to run an open School. The schools of CBSE are located in different parts of the country both rural and urban. These schools can act as frontier agencies of the Board in extending the benefit of non-formal education to needy people and girls.

3. Purpose and Objectives of the Programme

CBSE has a large clientele in the form of wards of transferable and migratory employees of the Central Government and other public undertakings. Besides this the Indian community settled abroad in various countries wishes to provide education to their children on the CBSE pattern. Such a clientele, therefore, looks towards a syllabus of all India character and channels other than formal schools.

The CBSE is already examining students who have taken correspondence courses for Secondary (class X) and Higher Secondary (Class XI & XII) examinations for the last

few years. These courses are provided by the Patracher Vidyalaya (School of Correspondence) of the Directorate of Education, Delhi Administration and the syllabi and courses are laid down by the CBSE. At present the lessons are sent only in Hindi. The Board wishes to expand the scope of the programme with a view to covering a large population on a national and international scale, by making the courses available both through the medium of English and Hindi.

Further, the CBSE is in a much advantageous position to bring about qualitative changes in the Courses and processes of non-formal education. By operating on a larger scale, it may also be in a position to provide more enriched inputs and thereby raising the quality of lessons and other programmes it envisages to make available.

The purpose of the programme will be to provide a course of general education outside the formal system. The broad objectives would be as follows :—

- (a) To impart a body of knowledge so that the students may become more enlightened and well informed citizens.
- (b) To develop the habit of self-learning and thereby to generate confidence in themselves so that they are brought back to the main stream of education.
- (c) To enable them to link up the acquired knowledge with their own background and observations so as to develop ability to utilise knowledge for their own personal growth and profession.
- (d) To develop some positive attitudes towards one's community, nation and humanity at large.

4. Target Population

The Open School is aimed at covering the following categories of persons above age of 14 :

- (a) Male students who have cleared the elementary stage from a school.
- (b) Girl students who can demonstrate their competence to undertake the course through a procedure to be laid down by the Board.

5. Nature of Courses

- (a) The courses at the secondary stage would be the same as prescribed for Delhi/All-India Secondary School Examinations except that the students will be exempted from Physical & Health Education and Work Experience. Among the languages, only English and Hindi will be offered.
- (b) At a later stage when the scheme is extended to the senior secondary stage, the Board would offer the courses only in the General Education spectrum preferably non-science areas.

6. Duration of Courses

The duration of these courses will normally be 2 years. At the end of each course the candidates will appear at the Secondary or Senior Secondary Examinations of the Board, as the case may be, and the successful candidates will be issued certificates by the Board. In order to attract the students and allow them to learn at their own pace, they will be given opportunity to enrol themselves at any time of the year, but they can take the examination only after a period of not less than 2 years.

7. Contact Programmes and use of Multimedia

The main quantum of knowledge will be provided through a well organised correspondence-cum-contact programme. Initially four contact centres will be set up at Delhi, Bombay, Calcutta & Madras with library and other facilities. As the programmes gathers momentum, more centres may be opened at smaller towns and villages.

Although the printed material supplemented through contact programme would be the main tool to be used in the Open School, other media like Cassettes, radio and TV, would also be uses.

8. Phasing of the Programme

The programme would be phased as follows :—

1978-79—Preparation for the Open school at the secondary stage

- (a) Organizational and administrative steps for setting up the machinery.
- (b) Training of Board Officers.

1979-80—Further Preparation

- (a) Training/Orientation of lesson writers and tutors.
- (b) Preparation of lessons for class IX.

1980-81-Starting the Open School

- (a) Admission and Correspondence Education of students for class IX.
- (b) Preparation of material for class X.
- (c) Setting up of contact centres.

1981-82-Further Consolidation

- (a) Providing correspondence education to the second batch of class IX and first batch of class X.

- (b) Analysis of the feed-back received from the students and the exercises attempted by them. Review of the lessons and evaluation exercises in the lessons for class IX.
- (c) Preparation of materials for class XI for the next session.

1982-83-Extension to Senior Secondary Stage

- (a) Admissions to Senior Secondary students.
- (b) Providing education for Secondary School Examination.
- (c) Review of the lessons of class X.
- (d) Preparation of new lessons for class XII.
- (e) Opening more contact centres.

1983-84—Use of Multi-media

- (a) Planning Radio & TV programmes.
- (b) Review of the class XI lessons.
- (c) Consolidating the centres and the contact programmes.

9. Staffing

Additional posts needed initially would be—

- (i) Officer on Special Duty/Academic Officer—1
(Officer of Reader's rank to be taken on deputation)
- (ii) P.A. (Rs. 425-700)—1

10. Financial Implications

The Programme would be carried out in collaboration with the British Council and the NCERT. But for this assistance, the Board would try to design the programme so as to become self financing in due course of time.

PROJECT (XIII)

Role of TV in Formal System of Primary Education

The various studies undertaken during SITE have indicated the need for improving, adjusting and manipulating the software for deriving the maximum benefit of ETV for primary school education.

It is proposed to produce and telecast special ETV programmes based on need assessment studies and opinion of experts. The printed materials prepared to support this programme will be supplied to teachers in order to enable them to prepare themselves to interpret the programme correctly and effectively.

The programme will be confined to about 50,000 primary school children of 6—11 years in and around villages of Jaipur district of Rajasthan.

Planned for one academic year, Pre and post experimental evaluation study will be conducted to assess effectiveness to carry out corrections.

PROJECT (XIV)

Use of TV for Non-Formal Education

This programme may be designed for the children who dropped out of the educational stream at the very early stage and for those who never entered the formal system of education.

This programme may be demonstrated in the State of Bihar (Distt. Muzaffarpur) where some 300 community sets will soon be in operation. Based on the need assessment survey of children in 9—14 age group, special programme for this age group may be prepared and beamed at a suitable time. The beneficiaries of this programme may be listed and assisted by a part time teacher as under the existing system of non-formal education centres. It is expected that about 40,000 children will be benefitted by this programme.

The duration of programme will be one year. An evaluation of the programme needs to be done by using a pre-post technique on a sample basis which may also be used as a mid course correction.

It is estimated that the evaluation study of this programme will cost Rs. 60,000/-.

PROJECT (XV)

TV as a Medium of Motivation for Adult Education

In this programme we wish to examine if appropriate forms of media programming (in this case Television) could motivate the viewer over a period of time to gain education. It is, therefore, essentially a behavioural project for isolating the motivational component for programming.

The characteristics of such a system would include the following; first treating the receiver of communication as a "whole" human being and not just as a farmer or cowherd or contraceptive user ; second, that the system ought to have built in instantaneous feedback ; third, the communication process be through multi-channels to have an impact on all human senses and not just one ; and finally that the process ought to allow for raising conflicts as well built-in modes of conflict resolution.

It would seem reasonable to assume that the media have probably not played a spectacular role in education or development so far primarily because of the software content. It is also, therefore, reasonable to deduce that appropriate software manipulation leading to creative modes might impinge on psychic factors of the viewer/listener and act as an impulse for motivation. The assumption, therefore, would be that if appropriate creative software could be produced and beamed at the target audience it might lead to the desired motivation.

We propose to conduct this experiment in Andhra Pradesh in Hyderabad. At present there are 360 community sets already installed and some more sets will be installed shortly.

Through these TV sets, specially designed programmes based on assessed needs and the opinion of the panel of experts will be beamed at suitable times.

It is a two facet programme :

- (a) To motivate the adults by bringing in them the attitudinal and behavioural changes to receive the education ;
- (b) To impart adult education through TV.

It is expected that a total number of 2 lakhs adults will be benefitted from such a programme.

An evaluation study using pre and post experimental and control design need to be carried out on the completion of the first six months of the programmes. Such an assessment will provide insights for the future planning. The assessment study will cost Rs. 20,000/-.

PROJECT (XVI)

Functional Literacy Components in Adult Education

It is evident from SITE experience that TV programmes failed to have the desired impact in imparting functional education to the rural adults mainly because the programmes were not need-based. It is therefore, proposed that special functional literacy programmes be designed based on the need-assessment survey and the opinions of the panel of experts.

The programme may be carried out in the State of Madhya Pradesh (Raipur District) where about 200 community sets are presently in operation. The number of sets are likely to be doubled shortly. This programme may be tried for one year. Pre and post achievement tests of some sampled viewers in the experimental and control villages shall be conducted to reveal the impact of TV programmes, specially of functional literacy components.

This programme is expected to benefit 1,40,000 adults and will cost for evaluation and study Rs. 30,000/-.

PROJECT (XVII)

Impact of Films on Rural Development

Films can prove to be a very potential medium of mass education. In the field of rural development too, this medium can be exploited successfully. Perhaps the impact of films can be substantially enhanced by intermixing it with other channels of communication. Accordingly it is proposed to prepare and expose the village folk to a package programme of rural development comprising a number of films about various important areas e.g. agriculture, health and hygiene, social culture, education, village industry etc. etc.

It is proposed that an experiment on the lines mentioned above be carried out in the villages around Poona. A number of short films using Feature Film Format wherever possible (in order to combine education with entertainment) will be produced with the help of panel of experts from various fields. It will be advisable to use the existing documentaries also on the relevant subjects. To start with, these films will be screened in about 200 villages at periodical intervals through the agency of Field Publicity Units. It is expected that this powerful audio-visual media will be able to have its longer lasting effects in educating the people.

It is also suggested that an evaluation of impact of these films be carried out on sample villages using a pre and post control experimental design. It is estimated that this evaluation will cost approximately Rs. 70,000/-.

PROJECT (XVIII)

To Utilize the Channel of Agriculture Extension for Education of Farmers (Functional Literacy)

The channel of Agriculture extension has been utilized right from its inception as the source to educate and guide the farmers for his various agricultural needs. The expectation and performance of this agency has undergone many changes depending on the assessment of needs and also views of experts. The latest concept under Benore Plan of the agriculture extension is to guide and assist the farmer in his day to day working. Such an arrangement does not provide to educate the farmer in his trade. In fact, it might help in more production of the crops rather than making him a good farmer. Therefore, there is need to educate him about agricultural and allied practices and also to teach him reading and writing of functional terms in order to enable him to record, remember and retrieve the knowledge.

In view of the above it is proposed to gear up an experiment with VLW, who has a close link with farmers and where he can be utilized as a channel of education and to impart functional literacy to farmers. Since the 6th Five Year Plan envisaged a part of allocation for 'farmers literacy projects' out of the outlay for rural development and agriculture, it will be advisable to have an integrated approach for functional literacy through agriculture and extension and rural development.

The experiment will be carried out in the State of Tamil Nadu and Punjab where the extension work is being carried out with a reasonable regularity. In each State, a suitable number of Adult Literacy Centres will be selected. These centres will provide special literacy classes for farmers along with the general regular extension activities.

The VLWs will be given special assignment to carry out the special Literacy classes to impart knowledge (i.e. reading and writing) to the farmers. This will be of one-year duration, but at every 6 months interval, an evaluation will be done in order to assess the level of knowledge gained, comprehension and attitude towards various agricultural practices. Pre and post tests of experimental type will be use in order to improve upon the special literacy programmes specially designed for the farmers. For such an evaluation, cost estimate is Rs. 50,000.

PROJECT (XIX)

Multi-media Package for Inservice Training of Primary School Teachers

As far as primary school teachers are concerned, there are two main problems in the Indian rural situation : (a) their present educational and intellectual level is extremely low. Therefore, by and large the education they impart to rural primary school children leaves much to be desired ; (b) with ever expanding population the problem of training these teachers is assuming horendous dimensions

It is proposed that the primary school teachers be given orientation courses in order to augment and up-date their knowledge with the use of TV along with other support material. To start with, this programme will be carried out in the States of Rajasthan (Jaipur) and Karnataka (Gulbarga).

At present about 80 community TV sets have already been installed and some more are likely to be installed in the near future in the Jaipur cluster. Gulbarga has 119 sets in position and another 121 sets will be installed in the near future.

It is suggested that by organising a two week orientation course during the summer vacation or the winter breaks, where a manageable number of 380 teachers can be imparted training with the help of especially structured TV programmes and with the support of printed material, resource person and radio programmes.

It is expected that all the primary school teachers in the district of Jaipur and adjoining areas within the TV transmission range will be trained through these camps. The location of the camps and the trainees will be decided keeping in view the distances from their headquarters to the TV villages and the availability of the transport.

In order to isolate the role of TV for the purpose of teacher's training along with its cost effectiveness, the cost factor of each of the proposed media mix shall be computed and an index of benefit will be constructed taking into account such factors as advancement of knowledge of the participants, his performance in the class room and his self evaluation of training programme. The following media mix are proposed to be utilised (a) Printed material, Resource person, TV and Radio, and (b) Printed material, Resource person for the purpose of isolating the impact of each media mix.

This programme is to benefit 2,500 primary school teachers, and the cost of this study for evaluating the impact and cost effectiveness will be Rs. 30,000/—

PROJECT (XX)

To Determine the Role of TV as a Medium of Motivation for Adult Education

Objective

In this particular project we are concerned primarily with effecting basic attitudinal and behavioural change. We wish to examine if appropriate forms of media programming (in this case Television) could motivate the viewer over a period of time to gain education. It is, therefore, essentially a behavioural project for isolating the motivational component for programming.

The characteristics of such a system would include the following : first treating the receiver of communication as a "whole" human being and not just as a farmer or cowherd or contraceptive user ; second, that the system ought to have built in instantaneous feedback ; third, the communication process be through multi-channels to have an impact on all human senses and not just one ; and finally that the process ought to allow for raising conflicts as well as built-in modes of conflict resolution.

Hypothesis

It would seem reasonable to assume that the media have probably not played a spectacular role in education or development so far primarily because of the software content. It is also, therefore, reasonable to deduce that appropriate software manipulation leading to creative modes might impinge on psychic factors of the viewer/listener and act as an impulse for motivation. The assumption, therefore, would be that if appropriate creative software could be produced and beamed at the target audience it might lead to the desired motivation.

Design and Methodology

Four matching villages having adult education centres will be selected ; two of which are equipped with T.V. and the other two are without T.V.

The two villages T.V. (controlled villages) shall continue to run their adult education programmes (using T.V. also) in usual way.

From each Adult Education Centre 20 regular participants will be included in the sample for observation.

The other two villages without T.V. (experimental villages) shall also have their usual adult education programmes with additional input of specially structured, need base, often repeated programmes on V.T.R.

Through pre and post achievement tests and interviews the gains of the two groups and also gains by individual groups can be compared.

This study will be conducted in Madhya Pradesh (Raipur District) and will be of one year duration.

Cost estimate : Rs. 20,000/—.

PROJECT (XXI)

To Evaluate the Effect of Alternate Channels for Primary School Education

Objective

To determine the impact of alternate channels for imparting education at the primary level.

Design and Methodology

This study will be confined to primary school children of 6-11 years age group.

Preliminary assessment will be carried out in order to assess the minimum educational needs of children in the age group of 6-11 years with a view to making the programmes.

Basing on the assessed need special curriculum programme on TV will be produced by Doordarshan in consultation with educational experts.

The support printed material will be produced by educational experts and will be made available to the concerned teachers well in advance.

12 matching schools—8 with TV and 4 without TV with 20 average and regular students in each will be selected for evaluating the effectiveness of TV programmes. To isolate the role of alternate channels these schools will be divided into three groups :

- One group will be exposed to TV alone ;
- One to teacher alone ; and
- One will be exposed to both—TV and Teacher.

The total sample therefore, will be of $4+4+4=12 \times 20=240$ students.

An experimental design of pre and post measures will be used to collect data from the selected sample to isolate the impact of alternate channels.

The study will be conducted in the villages of Jaipur district in Rajasthan. The duration of the study will be one academic year.

Cost estimate : Rs. 60,000/-

**To Evaluate the Impact of TV on Functional Literacy Components
in Adult Education Programme**

It is evident from SITE experience that TV programmes failed to have the desired impact in imparting functional education to the rural adults. The SITE continuity programme is undertaken with a view to improve the situation on the basis of our past experience. Therefore, there is need to evaluate the functional literacy aspect of the TV Evening Programmes.

Objective

To evaluate the impact of TV evening programmes specially of its Functional Literacy Components.

Design of the Study and Sample Size

The study will use an experimental design based on three sets of villages, two 'experimental and one 'control'. From each of the six clusters 12 villages of the following categories will be selected :

- 4 experimental villages from among the old SITE village covered again under the continuity programme;
- 4 experimental villages newly brought under continuity;
- 4 non-TV control villages.

The control villages will be selected from the same tehsil/taluka, where the sampled experimental villages are located. Matching will be done in terms of the following characteristics : Population size, absence or presence of a post office, highest level of educational facility existing and the modes of transport available. Within each villages chosen for the study a sample of 50 households will be selected at random by using the electoral roll for the villages as a sampling frame. In each sampled household all the members, aged 18 years or above will be enumerated and one among them will be selected for interview.

Pre and post achievements test of all the respondents shall be conducted to reveal the impact of TV programmes. The study will be undertaken in the State of Madhya Pradesh (Raipur District) and will be one year duration.

Cost estimate : Rs. 30,000/-

PROJECT (XXIII)

To Evaluate the Effects of Alternate Channels in Non-Formal Education

Universalization of elementary education in the minimum number of years has been accepted as a national policy. For the children who dropped out of the educational stream at the very early stage and for those who never entered the formal system of education, non-formal system of education has to be improved. TV as a potential mass medium plays an important role in elementary education. By structuring well-knit need-based educational programmes, TV with adequate support material can be used as an important channel. However, its effectiveness in comparison to the traditional teacher has to be evaluated.

Objective

To evaluate the impact of TV in non-formal education system as an alternate channel as compared to teacher.

Design and Methodology

Preliminary survey to assess the needs of children in 9-14 age group in selected areas will be carried out.

Well-knit educational TV programmes based on assessed curriculum with adequate support material shall be prepared by a panel of experts.

12 Non-formal education centres; 8 equipped with TV and 4 without TV, each with 20 average and regular students will be selected for evaluating the impact of TV programmes.

To isolate the role of TV, out of the 8 centres equipped with TV, 4 will be subjected to TV alone and the remaining four to TV plus teacher. The other four centres without TV shall have teacher alone as the medium.

Pre and post tests shall be used to isolate the impact of these alternate channels.

The study will be carried out in the State of Bihar (Muzaffarpur) and will last for one academic year.

Cost estimate : Rs. 60,000/-

**Cost Effectiveness of Inservice Training of Primary School Teachers
Through Various Media**

As far as primary school teachers are concerned, there are two main problems in the Indian rural situation ; (a) their present educational and intellectual level is extremely low. Therefore, by and large the education they impart to rural primary school children leaves much to be desired ; (b) with ever-expanding population the problems of training these teachers is assuming horrendous dimensions. With this in view it is proposed to investigate what role, if any, the mass media could play in the Indian rural situation to augment traditional methods of teachers' training.

Objective

To determine the relative cost effectiveness of imparting inservice training to primary school teachers through alternate channels.

Design and Methodology

Special teachers training programmes shall be designed for this purpose by experts. The following media mix are proposed to be utilised : (a) Printed material, Resource person, TV and Radio, (b) Printed Material and Resource person for the purpose of isolating the role of each media mix.

The study will be undertaken during the vacation by organising two two-weeks orientation courses. In each course 30 teachers will be given orientation. One camp will be organised for each experiment mentioned above. Thus total sample will be 30 (participants) $\times 2$ (media mix) = 60×2 (clusters) = 120 .

The cost factor of each of the proposed media mix shall be computed.

In order to determine the benefits accrued a composite index of benefits will be constructed taking into account such factors as advancement of knowledge of the participants, his performance in the class room and his self-evaluation of the training programmes. .

This study will be undertaken in the SITE continuity clusters of Rajasthan (Jaipur) and Karnataka (Gulbarga).

Cost estimate : Rs. 30,000/-.

Farm School on the AIR-An Approach to Non-Formal Education

The basic problem in this country is not the poverty of natural resources but the development of human resources. Unless we develop our human resources, we do not develop much else materially, economically, politically or culturally.

Education plays a vital role in development of human resources. But the formal system of education is neither viable nor efficient in coping up with the problem of educating large number of rural adults. It is necessary, therefore, to use methods of non-formal education to provide learning facilities to large number of rural adults.

The task of educating millions of rural adults is a gigantic one. It cannot be achieved without using all possible and available educational technology resources. The need for using radio in non-formal education has been felt for quite sometime and Radio has been used, in a small way, in non formal education.

The experience shows that learning is faster if it could be geared to economic activity of learner. Agriculture being the primary occupation of majority of the rural population, agriculture education through radio would benefit a large number of rural population.

In recent years, AIR has used Farm School on the AIR programme quite successfully in many parts of the country and the experience gained thus far shows that this programme has great potential.

Objectives

The purpose of Farm School on the AIR programme is as follows :

- to educate the farmers about new agricultural technology
- to improve farmer skill in application of agricultural technology
- to inculcate scientific temper among the rural adult population.

The overall objective of the programme is to popularise improved agricultural practices to increase agricultural production.

Methodology

“Farm School on the AIR” programme is a systematic method of providing to the listeners, relevant and useful information on selected subject over a period of time in an interesting manner. The selection of the subject is made by a specially constituted

committee consisting of agricultural experts, agricultural development officials, extension workers and farm broadcasters. The committee decides the number of lessons to be broadcast on a particular topic and as also the subject matter specialists to be involved in the broadcasts. The Committee with the help of other specialists designs the syllabus for the Farm School on the AIR.

In order to ensure regular listening the farmers are motivated to register with the station to participate in a particular Farm School on the AIR programme. The registration is down with the help of State Department of Agriculture, Animal husbandary and all other rural development agencies. The registered listeners are given a registration number which is used for further correspondence.

The programme is presented in the lecture-cum-discussion format in which specialist, extension worker and a farmer take part. The programme is broadcast twice a week, keeping in view the calendar of agricultural operations of the selected crop. The programme starts with a brief summary of the previous broadcast followed by a detailed discussion on day's lesson and ends with a brief summary of day's lesson, answers to questions of the listeners and at the end the specialist asks a few questions based on the information presented in the day's lesson and the listeners are supposed to send the correct answer to the radio station for evaluation. All such letters received from the listeners are sent to the specialist concerned who evaluates the listeners' response and gives them scores. These scores are entered against the registration number of each farmer.

To supplement the broadcast, the lessons are published in a booklet form and are distributed to each listener at the end of the course. Based on the cumulative score obtained by the listeners, certain prizes are also awarded. The listeners who respond regularly are given a certificate for participating in the programme.

It is proposed to add another component to this programme in the particular experiment, i.e. contact programme. After the registration, the listeners will be divided into different groups according to geographical area. The criteria for dividing the listeners into different groups would be the location of their village under a particular farmers training centre. The listeners will be requested to come to the farmers training centres on specified days every month where the instructors in the farmers training centre will give them demonstrations and also other useful material and guidance on the topics covered during that month. The training centres will maintain a register of such farmers who participate in the contact programme. If the number of listeners in a particular farmers training centre is so large that it is unmanageable to carry out the contact programme, the training centres will divide the listeners into further groups and will call these groups on weekly basis i.e. one group will come for training in the first week and the second group in the second week and so on. The programmes chalked out by the farmers training centres for the contact programme will be announced on the radio so that the registered listeners can benefit from the contact programme.

Location

The programme will be carried out from our AIR stations, namely, Baroda (Gujrat), Jabalpur (M.P.), Gorakhpur (U.P.) and Udaipur (Rajasthan).

Time Schedule

The project planning must start from the month of June but the real organisation of the programme will start from the next Rabi season and the course will focus its attention on the most important Rabi crop in the listening range of each station. The subject of the course will perhaps vary from station to station depending upon the importance of the Rabi crop in the listening range of each station.

Target Audience

It has already been stated in the beginning of this paper that the programme will be aimed at the adult farmers. Only operational farmers will be registered for the course.

Evaluation

There will be two types of evaluation (1) during the course evaluation and (2) after the course evaluation. During the course the Audience Research Unit of AIR or any other organization will evaluate the response from the farmers based on the number of letters received in response to the questions asked at the close of each lesson. After the course evaluation will examine the retention, comprehension and application of the information presented during the period of the course. It will also examine the effectiveness of the programme format and the usefulness of print media support as well as the contact programme. It will also suggest measures for improvement in the ensuing courses.

Enrichment Programmes For Children in School

This project will examine in detail the role that radio and television can play in improving the quality of education and making the school a more attractive and relevant institution in the life of the child and in the community.

The impact of this project will be measured, among other ways, in terms of the improvement in the attendance of children in school.

For purposes of the project, improvement in the "quality of education" will involve

- identifying those areas of content which are not adequately covered in text books or are found difficult to expound by the teacher ;

- identify themes which can further the broad goals of education, at the same time lending themselves to treatment by radio/television ;

- investigating themes which could be treated more or less independently by the media programmes with a view to encouraging habits of self-learning and self-reliance among the children. This will reduce the tedious aspect of the workload of the teacher, and give him a new and exciting role.

In this project, the radio and television programmes will be planned with a special awareness and directed to the primary school as a whole, and not class-wise. The limitations of listening/viewing conditions in cramped space, particularly in rural schools, will necessitate the selection of a smaller group within the primary school group which could preferably be children in classes III/IV and above where some observational and literacy skills have been developed. While planning the programmes under this project, the greatest conceptual clarity will have to be brought to bear on defining the approach to programming and the consequent selection and sequencing of topics and most important of all the unfolding or development of the content. Hence again, the prime consideration will be to entertain the child, through wholesome laughter, by kindling curiosity and interest in what is put across and by personal involvement. Stories and themes will be selected which widen the horizons of children by expanding their powers of observation, leading them on to various kinds of action and participation. The programmes will be made so as to provide substantial points of interest to the target group of children. Essentially it will be the freshness of insight rather than merely subject matter that will characterise these programmes. Fortunately the nature of the media of

mass communication is such that they compel the attention at all levels of comprehension and ages of a script directly stated and worked out with an awareness of its social and educational implications. This conceptual framework will have to be put across to the producers and educationists concerned.

Under this approach, the planning and content will be radically different for educational programmes using radio and television.

In view of the transitory character of both these media the programmes will be supported by a variety of printed material which will :

- awaken the interest of children by the provision of novel visual material which they can use and retain ;
- re-inforce significant educational points covered by the programmes through illustration or written matter ;
- suggest or lead on to activities and action ;
- encourage reading and drawing skills ; and
- stimulate group activity and work among children.

A second major objective of the programme will be to indirectly improve the quality of teaching. It is hoped that the continuous and long term exposure of teachers to new approaches and methods will provide them the kind of suitable and imaginative training that is necessary for the appreciation of these media, which cannot be imparted by existing formal teacher training institutions nor achieved through forced crash orientation programmes. The sensibilities of teachers (already trained) can be awakened and quickened only through prolonged exposure to the best possible creations of the media.

The non-formal approach which will be the characteristic of good media use in the present context, should have, hopefully, an impact on the rigidities of curricula of the traditional system and lead to its eventual restructuring. The project is aimed as a new focal point of interest for children and teachers.

Methodology

A study group will be set up by the Ministry of Education involving all producers of ETV and childrens programmes and those responsible for planning policy. The group will plan implementation of the new approach in all detail.

A second study group will be set up for developing the plan for radio utilization. This group will involve producers of children's programmes and those responsible for planning policy.

A small group will oversee the production of these programmes to ensure that the conceptual approach is not lost sight of in the actual preparation of content, and that quality of freshness and imaginativeness is maintained. It will also bring about an exchange of materials, particularly television programmes which can be adapted in different language areas.

This group may also assist in developing a simple methodology for evaluating the impact of the programmes.

Duration

The projects will be developed in areas where television and radio programming is already taking place. As such this work can be taken up immediately. However, for the formal evaluation of the project it would be desirable to have one full year, though individual programmes will be under a constant rough and ready system of assessment.

Continuous Enrichment Programme for Teachers

Introduction

While ET can be used in a variety of ways to improve the qualifications and training of elementary school teachers, it is of paramount importance to establish continuous contact with all teachers with a view to providing them with educational information and materials relevant to the teaching programme. It is proposed to select the print media as the main channel for maintaining continuing contact with all teachers. This contact will be irrespective of accessibility by radio or television, and will ensure the retention of materials by the school and teacher. The contact programme will be based on a suitable distribution network making use of the existing postal system.

The main focus of this programme will be to break the isolation of the teacher, particularly in rural schools, and a start will be made with the far flung and outlying areas. The establishment of this channel will lead to a sense of belonging on the part of the teacher, will motivate him and will enable the supply of educational resources. This system will have an in-built feedback mechanism to provide information about the needs of teachers in remote areas.

The project will be developed by close collaboration between the SIE responsible for elementary school teacher training and the SIET.

Educational Materials

To begin with, a selection of information materials and resource materials already available with the State Departments and Institutes of Education will be mailed periodically.

The demands made by the individual schools/teachers will be catered to.

The new materials developed by SIETs will be distributed to them for testing and getting the feedback.

The information about ET programmes will also be sent out through this channel.

Programme Operation

Each SIET in collaboration with the State Department and SIE will create a suitable mechanism for planning the programme, preparing the materials, mailing schedules, analysis of feedback response and periodic reviews.

As most of the teachers and schools may not be equipped to pay the postal charges, it will be necessary to make arrangements for reply paid postage.

Although it will be desirable to establish individual contact with each teacher, certain problems are foreseen such as mobility of teachers due to transfer, resignation etc. It will therefore be necessary to mail materials to schools in the beginning and then develop personal contact with teachers.

Costs

The cost will vary according to the number of teachers and frequency of mailing. It is suggested that the cost per teacher may be assumed at Rs 30 per year.

A BRIEF HISTORY OF THE EDUCATION TECHNOLOGY PROGRAMME : REVIEW AND DEVELOPMENT

I

TIME SPAN OF THE PROJECT

The educational technology programme was developed as a new scheme for the Fourth Five Year Plan. The memorandum for the Expenditure Finance Committee* was submitted on October 21, 1971 and considered on November 19, 1971. The programme was approved in principle subject to the major proviso that the finances for the scheme would be found from the funds already allocated to the Ministry of Education.** It was envisaged that the implementation of the scheme would involve :

- the setting up of an Educational Technology Unit in the Ministry of Education ;
- the setting up and maintenance of a Centre for Educational Technology in the NCERT with UNDP assistance ;
- the setting up of Educational Technology Cells in all the State governments, twelve in the first year and the remaining six in the second years.

(while approving the scheme this was modified to the setting up of ET Cells to begin with in only three States where terrestrial television facilities were then available or were likely to be available in the foreseeable future. The States were Jammu & Kashmir, Maharashtra and Delhi.

It was also envisaged that the scheme would be fully implemented during the three remaining years of the Fourth Five Year Plan that is, 1971-72, 1972-73 and 1973-74.

The first circular letter@ conveying the sanction of the President to the implementation of the Educational Technology Project to the Accountant General, Central Revenues New Delhi and creating the posts for the Educational Technology Unit in the Ministry of Education was issued on March 18, 1972. This was copied to Education Secretaries of all State Governments and Union Territories. It was stated therein that the Educational

*No. F. 24-15/70 School 3, Ministry of Education and Social Welfare (Bureau of General Education) dated the 21st October 1971 (Enclosure I).

**Memo No. 9028-Edu. Unit/71 dated 29.11.1971, Ministry of Finance, Department of Expenditure, Education Unit (Enclosure II).

@Letter No.F.24 15/70 School 3 dated 18.3.1972, Ministry of Education and Social Welfare (Department of Education) (Enclosure III).

Technology Cells would be set up in various states in a phased manner, to begin with in the states served or shortly to be served by All India Radio Television Stations as also by satellite broadcasting. It was also clarified that the ET Cells would be set up by the States and administered by them on behalf of the Government of India during the Fourth Plan period and that with effect from 1st April 1974 the financial responsibility of the Cells would be transferred to the respective State Governments who would then maintain and administer them without any financial assistance from the Government of India. Further, the Cells would be established only after the State Governments had given an undertaking to run these centres at their own cost from 1974-75.

Thus with the issue of this letter the States were invited to participate in the scheme on the offer of central assistance for two years and on the condition that they would guarantee to maintain the centres thereafter at their own cost. However, the letter creating the posts for the State Units was issued seven months later, on October 19, 1972, and was confined initially to the States of Maharashtra, Punjab and Jammu & Kashmir*. Thus the effective period of central assistance was further reduced to one or one and a half years.

In these circumstances it is not surprising that by the time the Fourth Plan came to a close, ET Cells should have been set up in only two States, namely, Maharashtra (1972-73) and Rajasthan (1973-74). No ET Cell was, or could be, set up during the first year of the three years of the scheme.

The States were unwilling to set up ET Cells unless central assistance was made available for the full period of five years of the Fifth Plan. Consequently the Ministry of Education took up the case for continuation of financial assistance during the Fifth Plan and this was accepted by the Planning Commission vide para 8-68 of the draft Fifth Plan.

“The adoption and adaptation of modern means of mass communication, particularly the radio and television, as support to the teaching-learning process would require considerable research and development effort. Provision has been made to give radio sets to schools. Educational institutions will also use community television sets. For the development of the software component of the programme, the Educational Technology Cell at the Centre would be strengthened. At the State Levels, the existing Educational Technology Cells are being strengthened and new ones will be established with the assistance of the Government of India. These Cells will also prepare educational films and other audio-visual materials.”

Notwithstanding the necessity for considerable research and development effort as the basis for the implementation of the programme pointed out by the Planning Commission, the Ministry of Finance agreed to central assistance being made available only for the first three years of the Fifth Plan i.e. up to March 1977. Their point was that in the original proposal central assistance was envisaged only for three years of the

*Letter No. F.2-3/72 ETU dated October 19, 1972. Ministry of Education and Social Welfare (Department of Education) (Enclosure IV).

Fourth Plan, and that by agreeing to provide assistance for the first three years of the Fifth Plan, the two States which had already joined the programme would get five and four years of assistance, while the remaining states would get the originally proposed full period of central assistance that is, three years. Further they argued that

“when the states who have not yet set up ET Cells come to know of the limited period of financial assistance from the Centre during the Fifth Plan the process of such Cells being set in these states is sure to be hastened.”

At the Ministry of Education had foreseen, this decision of the Ministry of Finance impeded-not hastened- the setting up of the ET Cells. By March 31, 1975 only five additional ET Cells were set up and these were in the states to be covered by the Satellite Instructional Television Experiment which was to commence on August 1, 1975. Thus the exigencies of the SITE almost compelled the states of Andhra Pradesh, Bihar, Madhya Pradesh and Orissa to set up ET Cells notwithstanding the inadequate conditions of central assistance. Rajasthan, the sixth State to be covered by SITE, had set up an ET Cell a year earlier. By the end of 1974-75, there were ET Cells in only seven States-Maharashtra, which was the first to come in, and the six SITE States. Most of the other States which evinced interest in the scheme said that they were unable to set up an ET Cell unless five years of central assistance was promised,

Consequently the Ministry of Education again took up the question of further continuation of financial assistance with the Ministry of Finance. After considerable persuasion, agreement was obtained to the position that holds today that is, continuation of assistance to the State units for five years or up to the end of the Fifth Plan, whichever was earlier. Accordingly, Maharashtra, ceased to qualify for assistance after March 31, 1977. However the State governments are pressing their case for continuation of assistance on the ground that although the sanction was issued in 1972-73, on January 29, 1973 to be exact, actual work commenced only in 1973-74. Ministry of Finance have not so far agreed to continue assistance to Maharashtra, Rajasthan will also cease to qualify for assistance on March 31, 1978 i.e. the year before the close of the Fifth Plan.

The operational plan reveals that assistance for the State Units was first proposed for three years ; it could be only offered for two years or less ; it was extended by three years and then extended again to the end of the Fifth Plan or for five years in all whichever was earlier. Thus to all those States which joined the programme late or, which have not yet decided to join the programme five years of assistance will not be available.

The States have revealed understandable hesitation to take on the responsibility of a new scheme without assured assistance for even a period of full five years. By the time the scheme was introduced there were only two years of effective assistance and by the time continuation of assistance was obtained, there were still only a few years for those States which had not joined the programme earlier. And this process continues till today. For the States which have just joined the programme or not yet done so we may at best offer only a year or to of central assistance.

The piecemeal basis on which assistance has been offered has been one of the most inhibiting factors in the acceptance of the programme. On our part, it was perhaps an

ambitious thought, lack of foresight or full appreciation of the implications of the programme to propose that the scheme would be "completed" within three years. To an extent the Ministry of Finance have gone along with us in agreeing to continuation of financial assistance, but the fact remains that the concessions were obtained too late to avoid the impression of ad hocism in planning and financing the scheme.

As a result of an intensive persuasive effort on the part of the Ministry of Education in the post-SITE phase, and the elaboration of the implications and potential of the programme all States except Tripura and Assam have either joined the programme or expressed their agreement in principle to participate in it

The position as on 1.2.1978 is as follows

- ET Cells have been set up in 16 States.
- Two States have decided to set up ET Cells and details are being worked out and/or sanctions are being issued. The States are Meghalaya and Sikkim.
- Two States have not taken any decision so far. These States are Assam and Tripura.
- Two States have decided in principle to set up ET Cells but formal communications are awaited. These States are West Bengal and Haryana.
- The Union Territories have not yet been invited to join the programme.

As far as the duration of financial assistance to the ET Cells is concerned, the position on March 31, 1979 when financial assistance under present arrangements cease, will be as follows :

March 31, 1977	March 31, 1978	March 31, 1979
Assistance to Maharashtra ceased after five years	Assistance to Rajasthan will cease after five years	Assistance after five years will cease for—Andhra Pradesh, Bihar, Karnataka, Madhy Pradesh and Orissa. For Gujarat and Punjab it will case after four years. For Tamilnadu and UP it will cease after three years. For Himachal Pradesh, Jammu and Kashmir, Manipur, Nagaland and Kerala it will cease after two years. For the remaining six States assistance will be available for one year or not at all.

Thus only seven of the 22 States will have received five years of central assistance while for seven States the assistance will be for one year and less. For nine States the period of assistance will have been between two and four years. The Union Territories, which have not yet been invited to participate in the programme, are presently out of the purview of central assistance.

II

FINANCES

In financial terms, the proposal was sent up to the Expenditure Finance Committee with a modest layout of Rs. 134 lakhs. Out of this Rs. 58.40 lakhs was expected foreign assistance from the UNDP and the Indian expenditure was to be of Rs. 75.54 lakhs, spread over the three years period, from 1971 to 1974 as follows :

ET Cell in the Ministry	...	Rs. 1.38 lakhs
ET Cell in States	...	Rs. 21.31 lakhs
ET Centre at NCERT	...	Rs. 28.15 lakhs
Foreign experts (Indian share)	...	Rs. 4.70 lakhs
Building	...	Rs. 20.00 lakhs
TOTAL		Rs. 75.54 lakhs or Rs. 76 lakhs

As the scheme was approved subject to the proviso that expenditure on it during the Fourth Plan should be accommodated within the existing Plan allocation of the Ministry of Education, the funds made available for it were only Rs. 21.31 lakhs.

However the actual expenditure incurred on the scheme in respect of the CET and the ET Cells during the three years of the Fourth Plan was Rs. 8.42 lakhs. Of this amount Rs. 6 lakhs were sanctioned to the CET and the remaining to the ET Cells in Maharashtra and Rajasthan as follows :

	1970-71	1971-72	1972-73	1973-74	TOTAL
CET	23,350		1,00,000	5,00,000	6,00,000
ET Cells					
Maharashtra			50,000	1,70,048	1,67,048
Rajasthan				75,762	75,762

The overall provision for the scheme during the Fifth Plan was Rs. 200 lakhs which has been increased to Rs. 269-06 lakhs. As on 1.2.1978 the expenditure on the CET and ET Cells during the Fifth Plan has been as follows :

CET	...	Rs.	63.50 lakhs	
ET Cells	...	Rs.	56.34 lakhs	(See Table I)

It will be seen that expenditure on an ET Cell (Maharashtra) which has been the recipient of five years of assistance was only around Rs. 6 lakhs. On a SITE state, the corresponding expenditure may be estimated around Rs. 7 lakhs. A rough breakdown of the expenditure reveals that a major portion of the amount has so far been incurred on the maintenance and establishment of ET Cell, including purchase of equipment, while that on programme has been very small. The average annual expenditure on an ET Cells has so far been around Rs. 1.27 lakhs.

It may be concluded that the expenditure on the ET Cells has so far been nominal. There are various reasons, to be discussed in the subsequent sections of this paper, why the states have not so far been able to use or ask for larger assistance. However the most important reason appears to be the inadequacy of appreciation of the implications of the programme and supports the case for continuation of Central assistance till the programme is well established and capable of being transferred to the states. If assistance is not continued, even a State like Maharashtra is likely to rest content with providing routine support to a small scale etv programme in Bombay city schools leaving untouched the larger educational problems of the State of Maharashtra. The small provisions made for the scheme need to be increased manifold to realise the potential of educational technology. When one considers that the Centre spends as much as Rs. 4 crores annually on a single Institute of Technology, it is unrealistic, to say the least, to expect that educational technology will make an impact on all education in a state with an annual expenditure of a lakh of rupees or so.

III

CONCEPTUAL FRAMEWORK

Conceptually the scheme was spelt out in the following basic documents :

- (a) the memorandum prepared for the EFC No. 24-15/70 School 3 dated the 21st October 1971 (Annex 1)
- (b) the minutes of the EFC meeting which considered the memorandum No. 9028-EDU. Unit/71 dated the 29th November 1971 (Annex 2)
- (c) the Ministry of Education letter No. F/24-15/70 School 3 dated 18th March 1972 to the AGCR New Delhi and copied to the state governments (Annex 3)
- (d) the Ministry of Education letter No. F. 2-3/72 ETU dated October 19, 1972 issued initially to the State Government of Maharashtra, Punjab and Jammu and Kashmir (Annex 4)
- (e) the UNESCO/UNDP project document IND/71/612 which governed the plan of assistance and set out the objectives of the Centre for Educational Technology

The scheme was formulated in the context of expansion of television facilities and of the possibility of a satellite being made available for educational purposes. It was an attempt on the part of the Ministry of education to create an infrastructure at the Centre and the States which would make it possible for education to drive the advantage of the new medium of television. The greatest need visualised related to the preparation of materials, primarily for use in or with television, which was to be made available either through the satellite or through terrestrial television stations.

Realising the fact that the proposal to create a countrywide infrastructure for educational television could relate only to terrestrial television expansion (and not short duration experimental satellite broadcast) and that the proposals for the setting up of television stations in the Fourth Plan would fail far short of covering the country with television facilities, the Ministry of Education widened the scope of the materials intended to be produced. It was stated that basic audio-visual instructional materials would be produced either in the form of 16 mm films or as recorded television tapes to be used via television transmitters for schools equipped with television or through film projectors for schools which did not have television receivers. It was estimated that 20,000 schools had film projectors.

The objectives of the scheme were generally appreciated by the EFC but there was considerable questioning regarding the details, specially the functioning of the State

Units. The point was made that there was need to relate the phasing of the setting up of the State Unit with the television expansion programme of the Ministry of Information and Broadcasting which was slow. There was also the suggestion that the scheme was postponed in the context of the then prevailing economy drive. However, the scheme was approved but with serious limitations. It was decided to cut down the expenditure on buildings and also that funds for the scheme should be found from within those already allocated for Education under the Fourth Plan. It is interesting to note that the reason which seems to have been the deciding factor in the approval of the scheme was the recognition that preparation of the software for instructional purposes through television was a long drawn out process and it was desirable that a beginning should be made as early as possible.

Thus the educational technology programme was essentially conceived as a production programme. However the relationship between the AIR (which then also controlled television) and the production agency of the Ministry of Education to be created under the scheme was not spelt out clearly. It appears that the intention was that the production of basic audio-visual instructional materials should vest in the agency to be created by the Ministry of Education, the materials so produced would be used in all feasible forms including via television and that it would be at the time of broadcasting the materials that the AIR would have to come in.

In respect of arrangements to be created for the satellite programme the EFC memo is more explicit and states as follows :

“While the Ministry of Information and Broadcasting will be in charge of the actual broadcasting of the programmes and other technical details and the Department of Atomic Energy will be responsible for the hardware segments relating to the satellite, the Ministry of Education will be concerned with educational planning, fixing of priorities for television in educational fields, development of curriculum, preparation of basic scripts and television lessons, preparation of graphics, multi-purpose kits, models and other audio-visual materials which will not only serve the needs of television lessons but will also be useful for other mass media, such as the film projector, to be employed to serve educational ends. Trial runs of experimental materials and television lessons will be required and the Ministry will have to ensure that regular feedback is received to continuously assess and improve the programme.”

Furthermore, the memorandum continues,

“It will arrange for the preparation of instructional materials for guidance of classroom teachers. It will be concerned with the training of basic script-writers, full-time television teachers, part-time television teachers and user teachers in the classroom.”

And these sentences also embodied that became eventually the role identified for the ET Cells.

No yield was estimated from the project and it had no economic implications. It was intended to stimulate education at the primary, middle, secondary levels; it would promote national integration as the programmes would be structured as national programmes to be used all over the country; it would make primary school instruction more interesting and thereby contribute towards reduction of wastage at the school level particularly at the primary school.

As there were 1,50,000 educational institutions in the country, the scheme would stimulate the television receiver industry and ancillary repair and supply service in the country. The area of operation of the scheme was clearly school education.

Within this scheme of things the following basic roles were visualised for the three main implementing agencies :

- coordination role for the ET Unit at the Ministry of Education;
 - production role for the CET; and
 - supportive role for the State ET Cells
-

IV

FUNCTIONS OF IMPLEMENTING AGENCIES

We may now consider in some detail the functions assigned to the three main components responsible for the implementation of the scheme and the facilities provided to them for realising those functions.

1. The ET Unit in the Ministry of Education

The Unit was set up to administer the Project. Besides dealing with policy matters the Unit was expected to coordinate activities of the NCERT, Ministry of Information and Broadcasting, Department of Atomic Energy and State Governments on the one hand and foreign governments as well as international agencies such as UNESCO, UNICEF, UNDP on the other.

The staff sanctioned for the Unit consisted of a divisional head, an assistant educational adviser, one assistant and one lower division clerk.

2. The State ET Cells

The State Units, to begin with, were to be set up in the states served or shortly to be served by television stations. They were to provide the support necessary for the utilisation of television programmes and other materials to be produced. Two letters issued by the Ministry of Education formed the basic communications about the Project. These letters contained the overall objective of the Project and the responsibilities of the ET Cells, provide information about the staff sanctioned and also specified the functions of the academic staff. Accordingly in the first letter (dated 18th March 1972) the States were informed that the Ministry had formulated a project for "integrated audio-visual instruction by making full use of films, radio broadcasts, the expanded television coverage of the country and the new educational techniques such as video-audio recorders, programmed learning etc." The objective was further defined as "intended to stimulate education at all levels and to bring about qualitative improvement in education. It is also expected to contribute towards reduction of wastage at the school level, particularly at the primary level, by making the primary school instruction more interesting by supply of audio-visual instructional material and training of personnel required."

In the same letter the responsibilities and functions of the State ET Cells were defined as follows :

- (i) to prepare printed literature required for the broadcast lessons ;

- (ii) to train user (i.e. classroom) teachers who will pre-broadcast instructions and conduct post-broadcast discussions in the classrooms ;
- (iii) to coordinate the class timetables with the All India Radio's television and radio broadcast programmes ;
- (iv) to arrange to produce certain programmes of a local nature some of which may be live broadcast programmes ;
- (v) to arrange to exhibit educational films in a planned manner related to the curriculum ;
- (vi) to make use of all audio-visual and other modern technologies to improve education ;
- (vii) to assist in the selection of script-writer teachers for training ; and
- (viii) to do the necessary liaison work *vis a vis* Government of India, Ministry of Education on the one hand and the State Departments of Education and the schools, on the other.

In the second letter (dated October 19, 1972) the States were informed of the staff sanctioned for the ET Cells and the functions of the officer-in-charge and two programmers-cum-script-writers were specified. The officer-in-charge would be in the scale applicable to Under secretary in the State government while the programmer-cum-script writers would be in the scale applicable to senior post-graduate teacher of the State government and would be given an additional 10% as deputation pay.

The functions of the officer-in-charge would be to :

- (i) draw up a programme for the State for making efficient use of mass media and modern educational technology for education, including school and college education, open schools and open universities, literacy, further and continuing education and scientific ; cultural and technological education of those already employed in various sections of the economy ;
- (ii) coordinate with local All India Radio stations for the production of suitable educational programmes on radio and television ;
- ((iii) prepare a State plan for producing films for all stages of education and for out-of-school informal and adult education and teacher education particularly for work experience programmes and for craft education at the school level ;
- (iv) assist in the selection and training of script-writers, presenters and classroom teachers required for the implementation of educational technology programme of the State : and
- (v) liaise between Government of India, Ministry of Education on the one hand and the State Department of Education and Educational institutions on the other.

The functions of the programmers-cum-script-writers were specified as follows :

- (i) to write scripts for radio, television and other educational programmes ;
- (ii) to assist the local All India Radio stations in the actual production of radio and television programmes ;
- (iii) to prepare classroom materials to supplement the radio, television and other programmes ;
- (iv) to coordinate the class timetables with the All India Radio's television and radio broadcasts ;
- (v) to produce certain programmes of a local nature some of which may be live broadcast programmes ; and
- (vi) to generally assist the officer-in-charge in the implementation of the State programme for making efficient use of mass media and modern educational technology for education.

It might be mentioned that the two letters provided the total guidelines and concept of the Project so far as the Ministry of Education were concerned. As no element of expertise have been built into the staffing pattern of the ET Unit of the Ministry of Education, the elaboration of the ideas and other operational details were left very much to the ET Cells and their State Governments. It is only after SITE that the Ministry undertook a series of steps to provide guidelines and other kinds of assistance for the development of the programme.

3. Centre for Education Technology

As the functions of the Centre were spelt out in considerable detail in Project Document IND/71/612, it may be worthwhile to devote some consideration to it.

Having identified the problems in the Indian education system (rapid decrease in teacher-pupil ratio, inadequate pedagogic and subject qualifications of teachers, reluctance of teachers to move to villages, inadequate building and materials, high dropout rates, authoritative and traditional teaching methods) the project document suggests two alternatives for its improvement :

- (i) rapid expansion of education (presumably under the existing traditional system) dependent on vast resources in terms of plants, trained manpower, and money ; and
- (ii) a complete transformation of the educational process by taking recourse to new methods and bringing technological advances to bear on the field of education. The second alternative would also involve heavy capital, manpower inputs, but if rightly used it would be capable of giving

multifold results which traditional processes by their very nature are not able to do so.

In the wake of expansion of television in the country the technological advances were visualised in terms of television and the mass media but after further consideration it was felt that the project should not be restricted to mass media only but should cover

“the whole of educational technology using whichever media or combination of media is most appropriate to find solutions to diverse situations and problems. Learning systems would use the widest possible range of media, not only radio or television broadcasts but also films, film loops or cassettes, slides or filmstrips, video-tapes, sound tape records or cassettes, teachers’ guide or course books, pupils work sheets, graphics, multi, purpose kits etc.”

The project document further states that

“In the adoption of this most modern conception of educational technology India moves away from the traditional attitude of thinking about technology in education i.e. thinking chiefly of the incorporation of technology in traditional teacher centered activities to a new attitude of thinking about technology of education i.e. thinking of a systematic application of all the resources of science to the learning process and ultimately of a reform of the educational system. The introduction of technology in Indian education must not be a palliative but must lead to a comprehensive approach to the introduction of innovations apt to modify the existing structures while lowering the overall and huge costs of education and increasing its efficiency....It wants to be an entirely new approach to educational problems.”

The objectives of the Project were spelt out in some detail. The long range objective was to bring about modifications in the structure of education at primary, middle and secondary levels by redistribution of various human and material resources available. The immediate objectives aimed at were :

- (a) The establishment of a training programme for a wide variety of personnel, who will be responsible for promoting, organising and raising the quality of educational media utilisation at the Central and State level ;
- (b) The production of materials to guide and support the educational uses of the media ;
- (c) The carrying out of research and experimental work aimed at developing innovative approaches which can be applied through the media.

The specific activities to be undertaken to fulfil the immediate objectives of the Project were :

- (i) to improve teaching of social studies in primary and middle schools ;
- (ii) to improve the teaching of science and new mathematics in primary and middle school ;
- (iii) to improve the competence of teachers in new mathematics :
- (iv) training programme for educational television (script/writers, presenters, user teachers, orientation of administrators and planners) ;
- (v) innovative uses of educational technology (open school programme, out-of-school education) ; and
- (vi) special programmes for 4 to 8 age-groups.

The steps involved in carrying out these activities were also stated and basically were : the study of syllabi in the various subjects and for different levels, identification of concepts that could be taught best by using audio-visual materials, choice of appropriate media, preparation of materials, try-out of these materials and eventually their release.

Starting dates and proposed duration of each project activity were also set out by way of indications of an interphase time schedule.

OPERATION DURING PRE AND SITE YEAR

Actual operation started with the planning for SITE, that is in 1974-75 and not in 1971-72 as envisaged in the EFC memo quoted already. If the educational technology programme was a new programme, with no models to emulate, the SITE itself was an experiment which had no parallel in this country or elsewhere. It involved the use of satellite broadcast television for development purposes in remote and backward rural areas of six States which had not been exposed to television and were poorly served by other modern media of communication. There was little idea of the complexity and magnitude of the work involved in the development and utilisation of such a direct reception television system in areas where even electricity was not available or was available only for agricultural purposes. Many agencies at the Central and State levels were therefore involved in preparing the ground for this experiment and in this process, SITE became an experiment in management and coordination as well.

By March 31, 1975, that is a few months before the commencement of the Experiment, ET Cells had been set up in all the six SITE states. The sanctions for the ET Cells in Madhya Pradesh and Bihar had issued on March 4 and March 2, 1975 respectively. These ET Cells whose concepts were not yet clearly defined and which came into existence in the planning for SITE phase, became the natural focal points within the states for all work connected with the implementation of SITE, whether educational or administrative or coordinating in nature. In some states, for instance, the ET Cells were made responsible for selection and appointment of custodians for the TV sets, reimbursement of their salaries, payment of electricity bills and keeping of accounts. Their specific function however was to provide full support to the educational television programmes broadcast in the morning to 2400 primary schools in the six states.

While Doordarshan had in the main the responsibility of production of programmes, the State governments and the ET Cells assisted in planning for them. The ET cells were also responsible for the translation in relevant languages and printing of the necessary support material and its distribution to SITE schools. The material included quarterly time-schedules and teaching notes for the daily transmissions and in some states evaluation proformae as well. The officers of the ET Cells visited schools, developed inspecting arrangements and evaluative studies to ascertain teachers' reactions to television programme. It was a situation peculiar to SITE that the teachers and students were exposed simultaneously to the same instructional material.

In addition the ET Cells made arrangements at the states level in support of teacher training programmes which were organised by the CET.

At the commencement of SITE a two-day orientation programme was arranged for all user-teachers on the handling and maintenance of television sets and the use of television programmes.

A second programme which was more elaborate involved the training of a very large number of primary school teachers in science. Training was imparted by a teacher monitor to ten teacher trainees through a multi-media package of specially devised materials. The groups were assembled at each of the 2400 television centres for the training period of a fortnight during the school vacation in October, 1975, and thus 2400 teachers were trained. The programme was repeated during July 1976 involving the training of another 23,000 teachers.

The multi-media package was devised by the CET but state agencies and the ET Cells were involved in the development of certain parts of the package and in subsequent use of the package for training. Arrangements were made for a three tier training programme : resource personnel were first trained; these trained, in batches, the 2400 teacher monitors who were needed to train the primary school teachers. The organisational effort was considerable. Teachers had to be selected and placed in position, written materials were translated and printed and their distribution arranged along with other components of the package in several instalments to all remote and scattered centres, and travel and daily allowances had to be disbursed, accounts had to be maintained and eventually rendered to agencies concerned.

Thus the ET Cells were kept busy with the exigencies of SITE and they tried to fulfil the various demands made on them and their slender resources. It should be noted *en passant* that the full staff sanctioned for the ET Cells had not been identified or appointed in all the ET Cells in this phase.

The only ET Cell in a non-SITE state was established in Maharashtra. It came into existence on the eve of the introduction of television in Bombay in 1971. The ET Cell has played a useful role in developing a service for educational television in the schools of Bombay and Poona regions. The ET Cell assists in the preparation and production of programmes, train teacher-presenters, prepares and circulates advance information and guidelines for teachers, publishes teachers' guides conducts evaluation, assists in the purchase and maintenance of television sets. In short it provides the support necessary for the production of educational television programmes and their use in the classroom situation.

It should be noted that the building of this infrastructure in Maharashtra is due to the fact that the ET Cell is located in the city of Bombay which also has the television studios. It has thus been a relatively simple matter for the ET Cell to provide a service for schools which are also located in the compact city of Bombay.

VI

POST SITE PHASE, APPRAISAL AND EMERGENT ROLE

I. ET Cells

During the SITE year and thereafter, the Ministry of Education continued with their efforts to persuade the remaining states to participate in the educational technology programme. The response was slow and halting and by 1976-77, in addition to Maharashtra and the SITE states, only Tamilnadu and Uttar Pradesh, had set up Educational Technology Cells. Among the reasons for the slow pace of involvement in the programmes at the states' level were uncertainty over continuation of central assistance after 1978-79, the newness of the programme and consequently inadequate appreciation of its potential, even its relevance and the thinking that the programme was intended only for states with extended television coverage. Some states were unable to see the justification for launching a new programme which appeared very similar to the already existing audio-visual programme. And there was no policy document which could elaborate and clarify the concept of the programmes.

Consequently the Ministry of Education undertook a review of the programme and it may be relevant to briefly examine some of the problems which surfaced in the process.

Scope and Functions of ET Cells

As has already been stated, the purpose, philosophy and operational guidelines for the ET Cells were contained in two letters. On examination we find that these two letters were not entirely in harmony in defining the objective, of the project. In the first letter, which defines the objectives, the focus of the programme was at the school level particularly the primary level. In the second letter, which laid down the functions of the staff, the area of operation went beyond school education. For instance the officer-in-charge was expected to "draw up a programme for the State for making efficient use of mass media and modern educational technology for education, including school and college education, open schools and open universities, literacy, further and continuing education and scientific, cultural and technological education of those already employed in various sections of the economy." He was also expected "to prepare a State plan for producing films for all stages of education and teacher education particularly for work experience programmes and for craft education at the school level."

It is possible that this conflict in the actual area of operation of the programme led to some confusion in the states regarding the status of ET Cells and the State organisations under which they were to be placed. Some ET Cells form part of the SCERT or SIE, one is under the State Department of Higher Education and some are part of the State Department of Education or the DDIs office.

In general terms three basic roles were envisaged for the ET Cells and its officers : first, the liaison function, second, the preparing of State Plans for all levels of education and, third, providing support for radio and television programmes including training of user teachers. In effect we find that the ET Cells (except in Maharashtra) performed the liaison function and arranged the training of user teachers only, without actually training them. All other functions which the ET Cells carried out were not included in the Ministry's letters and certainly were not visualised. The functions have been mainly of an administrative nature. At the same time the manner in which the educational technology programme developed reveals that if the ET Cells have not adhered to the functions specified, it was because it was not humanly possible for them to fulfil some of them, nor will it be possible for them to do so in future and nor should such functions be expected of the ET Cells. Of course it should be said in all fairness to the scheme when it was formulated that the main role for ET Cells was to help in the utilisation of radio, but, more importantly, television, particularly television through the satellite. The natural expectation was that ET Cells would engage themselves in writing scripts for radio and television, coordinate timetables between the media agencies and schools, prepare classroom materials to support broadcasts and assist production agencies in preparing programmes of a local nature. As it happened, radio programmes which have been with us for many decades have not caught the imagination or interest of ET Cells or State Governments. The new thing was SITE and the ET Cells in the six SITE States were drawn into the urgent problems of implementation of SITE.

As for the writing of scripts for television, the ET Cells neither had the training, nor the opportunity to undertake this task. They could not take up the comparatively simpler work of preparing classroom materials to supplement the television programmes. There was no need for them to coordinate timetables since the time for broadcasting through the satellite had already been fixed.

Why the ET Cells could not associate themselves in any way with the production processes has to be understood. Except in the case of the ET Cell in Andhra Pradesh, the television production centres were physically far removed from the State capitals where the ET Cells are located. It was not possible for ET Cells in Madhya Pradesh, Rajasthan and Bihar to provide any meaningful support to the production unit located in Delhi which was producing programmes for these three states. Similarly, the ET Cell in Karnataka, located in Bangalore, could do nothing about the programmes produced in Hyderabad and so also with the ET Cell in Bhubaneswar whose production centre was in Cuttack. The ET Cell in Andhra Pradesh located in Hyderabad was the only Cell which did have comparatively easy access to the production centre also located in Hyderabad. Except, again for the ET Cell in Andhra Pradesh, the ET Cells did not even have the opportunity of monitoring the television programmes because the programmes were intended for rural areas and could not be seen in particular cities.

The story has not ended with the termination of SITE. The same pattern is expected to continue in the post-SITE television programmes. The conclusion must therefore be drawn that the functions of ET Cells in relation to ETV should be redefined so that they can play a purposeful role within the realities of the television situation. The ET Cell in Maharashtra alone has been able to provide the kind of functions envisaged for ET Cells, mainly because educational television in Maharashtra is confined to

Bombay and Poona. In this State most of the television sets are in a compact area of the city of Bombay where the television studios and the ET Cell are also located.

Even if the ET Cells could have performed the functions relating to preparation of scripts and classroom materials etc, the larger objective of bringing about qualitative improvement at all levels could not have been achieved. Inherent in the educational technology programme are problems which are more fundamental than those visualised under the scheme. It is necessary therefore in redefining the functions, to focus on the basic problems. For instance, the induction of educational television in schools of Delhi, for over ten years now, has neither resulted in a significant qualitative improvement in education (in recent years) nor made this medium occupy an integral and purposeful place in the educational system. An assessment of the school television in Delhi is long overdue and would if undertaken probably provide considerable data on which to base television policy.

Similarly we have to examine how the ET Cells could arrange "exhibition of educational films in a planned manner related to the curriculum", another important function assigned to them. This would raise the question why the audio-visual departments in the states and the Department of Teaching Aids in the NCERT have not been able to do this after twenty years of operating film libraries. The emphasis on preparing a State Plan for producing films for all stages of education was also clearly unrealistic at the initial stage of the programme. There is no specialised instructional film making movement in the country and it may not even be economically feasible to branch out into a large scale production of instructional films in the wake of development of television and possibility of an Indian satellite being available by 1980s. In any case the whole area of film for educational purposes bristles with problems which have not been solved, indeed which have not even been posed for consideration.

We may conclude by admitting that the scope of the ET programme was too large and wide-ranging, the functions assigned to the ET Cells too many and too difficult for effective implementation in the context of conditions evolving in the development of the media and the staff provided for the several purposes, too small. If the ET Cells were conceived as nuclei or focal points for development and utilisation of media for education, then this character was neither articulated in the scheme nor subsequently elaborated or clarified.

Furthermore as the first ET Cells came to be established only in states which had television, and as the emphasis of the programme was in providing support for this new medium, the educational technology programme, not understandably, came to be regarded as a programme concerned with the utilisation of television and thus diverted attention from other media, notably radio. There was added justification for looking upon the new programme as synonymous with the utilisation of television and other sophisticated technology as there already were institutions set up under the earlier audio-visual education movement which were concerned with the utilisation of relatively simpler aids such as films, radio, slides etc. Both programmes were intended to improve the quality of education and both had the formal system at the school level as their area of primary concern. The objective to improve quality is in its very nature difficult to realise and to assess, more so in the short span of three years or five years targetted for the educational

technology programme. There was need, therefore, to give a distinctive, purposeful and feasible role to the new programme in conceptual and operational terms.

Need for a Concept

Taking these factors into consideration, the Ministry of Education in continuation of its earlier requests sought the help of the NCERT/CET for a basic policy document for the programme which could be widely disseminated among the States and educational institutions for debate and discussion. The document was not available. However, in June 1976, the Centre for Educational Technology organised a seminar "to thrash out some basic issues relating to adopting-adapting of Educational Technology in the Indian context." The topics for discussion included identification of main problems of education for the application of educational technology; production, utilisation, organisation and management of software; role of national organisations in developing educational technology; and the strategies, organisations in developing educational technology; and the strategies, methods and techniques for tackling some urgent problems of education.

The seminar provided an opportunity to discussing the various aspects of educational technology and how it can help the process of national development and educational reconstruction. It also attempted to define certain tasks in the field of educational technology. The seminar suggested that educational technology "may be taken to mean the application of systems analysis to teaching and learning. It is not the application of technologies to education, but rather applying the technology of modelling to education." The concept of educational technology was defined as "the process of educational structuring and management of educational environment with the help of hard-and soft-ware that is available or that can become available to the best advantage of the learner."

The report on the seminar represented the thinking of a group of participants and could not be accepted for various reasons as laying down the national policy on the subject.

While not disagreeing with the desirability of optimising all resources for all programmes of education, the Ministry of Education wanted a different and clear cut focus for the educational technology programme. It was clearly unrealistic to place the total burden of structuring and management of the educational environment or of optimisation of all resources on the Educational Technology Cells which were themselves part of the larger complex of National and State level institutions whose main functions were in fact such optimisation, integration and management. What was needed for the educational technology programme was an emphasis which would be distinct and which would permit of concentration on aspects which had hitherto not been considered or taken care of in any sufficient detail by the existing institutions.

Taking into consideration the urgent needs of expansion of education and also of improving the quality, the Ministry thought that under the educational technology programme an all-out effort should be made to harness the resources of the mass media for educational purposes. Consequently the Ministry prepared the following First Statement on the subject :

Educational Technology—A First Statement

The stated objective of the Ministry of Education's educational technology programme is to bring about a qualitative improvement in education by stimulating and promoting an integrated use of mass media and instructional technology at all levels of education. No attempt has yet been made to outline the manner in which this can be achieved.

2. The educational technology programme appears to be similar to the earlier audio-visual education programme as both involve the use of instructional media and have improvement of quality of education as their main objective. In Maharashtra an Educational Technology Cell was set up as soon as television came to Bombay and in the six SITE states also the ET Cells were involved in the utilisation of the new media of television. For these seven States, educational technology has come to mean the utilisation of instructional television in the classroom situation.

3. The audio-visual education programme is primarily a programme for the teacher. Over the years audio-visual education has become synonymous with a programme of film libraries and occasional audio visual workshops for teachers. It has involved a very small number of teachers and institutions and is more a ritual than a well established purposeful system. To save educational technology from a similar fate, it is necessary that the educational technology programme should serve *well defined purposes* and above all be *pragmatic*. The educational system should have a stake in educational technology and not permit it to become merely a service to be utilised at the option of a teacher.

4. Important problems facing education are the expansion of educational facilities at all levels and the provision of new types of educational facilities to meet the needs of the large masses of people who are outside the scope of the formal system of education. The educational technology programme should therefore accept expansion as its first and primary objective and not the improvement of quality (which, in any case, should be inherent in any worthwhile programme. An educational technology programme must therefore be a programme intended for large numbers. It must be a mass programme.

5. Expansion under the educational technology programme will be different in character from that occurring in the traditional system, with its insistence on a definite teacher-pupil ratio, the presence of a teacher, need for a building and other such facilities. The educational technology programme, on the other hand, will enable expansion to take place on a much larger scale than is possible under the traditional system (given the limited resources) by making teaching an essentially important process and by doing away with the accepted but arbitrary norms of teacher-pupil ratio. Educational Technology will be applicable in areas which do not form part of the formal educational system and meet needs which it has not been possible to fulfil in the existing situation. It will also be a less expensive system in the overall. The programme must be a programme of excellence as any dilution in or indifference to quality can be disastrous, considering the large scale on which the educational technology programme will operate. For this reason also, qualitative research must be inbuilt into every educational technology programme.

6. The educational technology programme will employ mass media and exploit their characteristic of simultaneous or near simultaneous diffusion to a mass audience. The press, radio, film and television between them have the capacity to reach infinitely large

audiences while the time is not far off when three satellites will suffice for total global communication. By means of the mass media, it is possible to multiply the written and spoken word as well as still and moving images in colour or black and white. The media can inform, motivate, persuade, educate. In fact there is almost nothing that an imaginative combination of media cannot achieve for desirable educational needs. In India for all practical purposes we have only two media at our disposal, the press and radio. Educational technology programmes must therefore concentrate on exploiting the resources of these two media. Where television is or will become available and to the extent that films, filmstrips and other aids can be produced these would also be used but the focus in the educational technology programme must clearly be radio-centered and oriented towards exploiting to the maximum the resources of radio and printing technology. New roles will have to be given both to the broadcasting and the printing organisations in the country.

7. The audio-visual education programme has languished for want of financial and administrative support. As this programme is intended for qualitative improvement within the formal system of education, there should be substantially increased support for it. Production and hardware facilities, training and evaluation should be in-built into this programme as well. There should also be appropriate linkages between the use of educational technology for formal and non-formal systems of education so that the community as a whole can benefit.

This statement might be considered as the first major step towards developing a national policy for educational technology. As will be seen, the main point of the statement was the straightforward emphasis on the utilisation of the mass media for the expansion of education. The ET programme was to be a pragmatic approach to for a first statement resolving the most urgent problem of Indian education. And that was considered enough on the new programme.

Apart from the appraisal of the programme and the laying down of a conceptual statement a number of other steps were taken by the Ministry in 1977 to strengthen the programme and to obtain the interest and support of the State Governments.

Directions to ET Cells

Pending the formulation of a policy document, the Ministry decided to take over the responsibility of directing the development of the ET programme in the States. This responsibility had not been clearly entrusted to any organisation, but as the ET Cells during the SITE phase had participated in programmes arranged by the CET, suggestion about future programming seemed to devolve on the CET. However in view of the Ministry's decision to assign a specific role to the ET Cells, the important decision was taken that the development of the state programme would vest in the Ministry which was also responsible for financing the scheme and approving the programmes. In a meeting held in the Ministry on February 28 and March 1, 1977 the officers of the ET Cell were advised among other things to concentrate on the utilisation of radio and television for educational purposes. It was also suggested that they should create an awareness among their states of the purposes of educational technology and seek the support of state level educational and media agencies for their programme.

Staff Level Discussions with ET Cells and State Governments

The Ministry deputed officers to the States for intensive discussions on day to day problems of ET Cells and appraisal of their working conditions. The following general points were noted :

- (a) The ET Cells were by and large functioning in isolation of the State Government.
- (b) There was very little appreciation at even the senior most levels of the potential of the programme.
- (c) The accommodation for the ET Cells was far from satisfactory. It was usually a room or less, often in depressing and slum like conditions or exposed to dust, wind and variation of temperature, altogether inadequate for a technology programme.
- (d) The staffing position was most unsatisfactory. The ET Cells were not provided even the small staff sanctioned under the scheme, there were frequent changes and vacancies, the officer-in-charge was not appointed for considerable length of time, or given multifarious additional functions not connected with the et programme at all. Even the jeep made available under the scheme to the ET Cell to facilitate its work was taken away and placed under the general pool or utilised for other purposes as and when needed. In some states the officer-in-charge was not encouraged to correspond with the Ministry directly.
- (e) Under the provisions of the scheme, technical personnel are not provided as it was expected that such personnel would be available in the State Audio-Visual set ups. It was found that even the physical and manpower resources of the audio-visual sections were inadequate or non-existence and thus the ET Cells were not in a position to undertake any kind of production or experimental work. It was suggested that the two units could merge to provide complementary support to one another and hence increased overall resources and effectiveness. This has not been implemented in all the States for various reasons e.g, the two units are in different cities or they are under different authorities but considering the poverty of resources, staff and facilities in both types of units, the merger would only have a nominal gain. There is also the very real danger that the slow approaches inherent in the older audio-visual movement would adversely affect the development of the new educational technology programme in its initial stages, particularly when there were lack of dynamic and well trained personnel for these programmes.

Non-participating States

The Ministry kept up a regular correspondence with States which had not decided to participate in the programme and offered to depute an officer for on the spot discussions and clarifications regarding the programme to enable them to take a quick decision. As a result of these sustained efforts, the happy position is that, except Assam and Tripura, all the states have either set up ET Cells or have decided in principle to do so. Assam and Tripura are the only two State which have eluded the Ministry's persuasive efforts and have not even responded to a single communication.

Research Orientation to ET Cells

Realising the importance of research and investigation in this new area of television the Ministry has emphasised upon the ET Cells to undertake preliminary surveys and investigations in various media situations. Importantly, the Ministry sponsored evaluation

studies on the impact of television programmes broadcast in the context of SITE in four States. Apart from the Ministry's own interest in obtaining first hand information on the interaction between satellite broadcast television and new audiences, the effort had several other objectives. The studies were collaborative in nature and sought to bring together the State ET Cells and the production agencies in a common endeavour to appreciate the impact of television in the actual classroom and field situation ; they sought to emphasise the importance of investigation for an indepth appreciation of the problems involved in the induction of new media for educational purposes ; and they also were an attempt to train the ET Cells and others in methods of investigation of the impact of new media.

The report of the study in Orissa has been published while the other studies are in various stages. The major implications stemming from the published report are :

- (i) for proper programming there must be close collaboration between the producers and educationists and appreciation of one another's points of view and problems : and
- (ii) research is indispensable for the planning and development of media in education

Education Secretaries Conference (August 9-10, 1977)

The culminating point of the Ministry's all round effort was the placing of the item on the review of the Educational Technology Project on the agenda of the Education Secretaries Conference held last year. The underlying intension was to invite the attention of educational authorities at the highest level to the potential of the programme for the total educational effort. While reviewing the implementation of the project, attention was drawn to the following points :

- need to prepare for utilisation of increasing television facilities and the Indian Satellite ;
- need to appreciate the full potential of educational technology and to ensure adequate working conditions for the ET Cells ; and
- need to develop a long term or permanent place for educational technology and to consider the First Statement on Educational Technology prepared by the Ministry.

The Conference accepted the First Statement and recommended that the States which have not yet joined the programme may be requested to do so. On the role of radio which had a greater potential in the prevailing media situation, a request was made for documentation on the subject. Consequently, a working paper on Sound Broadcasting was sent by Joint Secretary, Shrimati A. Dayanand to all Education Secretaries on August 13, 1977. The paper discusses some of the problems which have come in the way of proper utilisation of radio in the formal system of education and suggests a new and more purposeful role for sound broadcasting for broadly educational purposes. In her forward-ing letter she stated that deliberate, well-planned and sustained use of technology, including radio, could provide a breack through to the staggering problems facing education and requested the State Governments to give their considered suggestions on how the already available media could be best utilised for serving the ends of education.

So far a few States have responded and the response has been favourable through there is not much indication regarding thinking about what the role of radio should be and how it ought to be exploited.

Working Paper on Educational Technology Programmes in the States

To help the ET Cells and the State Governments in developing appropriate work plans and to streamline operational arrangements, the Ministry prepared a working paper which sets out the broad guidelines and suggests the kind of programme that may be usefully taken up. This working paper was forwarded along with a letter from Joint Secretary, Shrimati A. Dayanand to all Education Secretaries dated, December 31, 1977 and as it constitutes the latest communication on the subject and also a summing up of the programme, it may be appropriate to quote at length from it :

“The programme, it is felt, is not one of marginal impact but rather the only alternative to the existing tradition bound system of education. We are all aware that under the present system it is neither possible to extend the benefits of education rapidly enough to make this country largely literate and self-reliant in a short while, say five years, nor to improve in a significant way the general level of the quality of education where it is available. Even with considerably increased financial resources it will not be possible for this kind of system to resolve, or even minimise, the intractable problems which are being faced not only by us in India, but all the world over and more so in developing societies. The rapid increase in population and the heightened aspiration of the people resulting in the demand for better, more relevant and life long education have created a situation which is absolutely unprecedented. We have to consider whether the present system of education, essentially elitist in approach and created to meet different needs can ever be, on the face of it adequate for the totally changed situation of modern times. It is therefore not a question of replicating an existing system on a much larger scale, given the funds, but of creating a new system which is responsive to vastly changed social needs. In the rush to meet operational exigencies, the basic issue—the inadequacy of the system itself—is lost sight of it. I do not think that much greater thought has to go into this problem and a serious effort made to explore alternative ways and means which can help in meeting national educational objectives.

The educational technology programme may provide the key to the problem. In its simplest essentials the programme is directed towards harnessing the potential of communication technology for educational purposes. Spectacular developments have taken place to enable man to multiply all the physical means by which education is imparted—the written word, illustrations (in colour and black and white), still and moving images and all the nuances of sound (speech, music and effects). Radio and television also have an inbuilt system of distribution which overcomes barriers of distance while written material can reach wherever

there is the infrastructure of a postal system. A communication satellite would further simplify access to education by making it possible for messages from a single source to be received directly, within homes or educational institutions. And it is technologically possible for three communications satellites to cover total global communication.

In India fortunately we have a very well developed infrastructure for all these media of mass communication, and, additionally, the experience of participation in a satellite instructional television experiment. By 1980s when the Indian satellite is expected to become available, we will have the most sophisticated technology at our beck and call. The question however is not the existence of the infrastructure which can be improved, not the availability of hardware which can be provided but the extent of the interest and readiness of educational authorities to use resources of communications technology for educational purposes. The first step is the decision at the conceptual level—appreciation of the inescapable necessity to rely on these resources and thereafter of its implications. The educational technology programme of the Ministry of Education is designed precisely to help the State Governments in preparing themselves for taking advantage of the vast but hitherto untouched resources of communications technology.

As we view it an educational technology programme would be a learning system which can reach out to mass audiences, a system which emanates from a single source where quality can be perfectly controlled, which is a system of direct instruction and therefore fosters the ability to learn on one's own, which gives a new role to the teacher, more of an organiser of resources than an impartte of instruction and which above all is designed to meet a well identified need.

To help the ET Cells and the State Governments in developing appropriate work plans and to streamline operational arrangements, we have prepared a working paper which sets out the broad guidelines which may be kept in view and also suggested the kind of programme that may be taken up. This working paper was used as a basis of discussions at a recent meeting held in the Ministry which was attended by the representatives of some ET Cells. A revised, somewhat amplified version of the paper is now enclosed for your use. I would however particularly wish to invite your attention to the following broad guidelines and would welcome any comments or suggestions that you may wish to make in regard to them.

1. The thrust of the educational technology programme must be in the priority areas of educational development, namely, universalisation of elementary education and adult education. The programmes undertaken by the ET Cells must directly contribute to the furtherance of the objectives laid down in these two areas.

2. The time target for universalisation of elementary education and adult education should be kept as five years. This should be reflected in the dimensions of the approach to be adopted for the development of a technologically oriented educational system.
3. Special emphasis should be given to the needs of scheduled castes, scheduled tribes, backward and other weaker sections of the country. This emphasis should be reflected in the selection of target populations in the initial years, the development of materials and programmes and assessment of needs.
4. The programme will primarily rely on innovative but fundamentally feasible uses of the mass media that is, radio, printed materials, and, where available, television.
5. The main emphasis in all such programmes should be on self-or direct learning. They will be so made as to attract the learners and sustain their interests, foster self-reliance and ability to learn or acquire knowledges on one's own. The programmes will therefore of necessity be programmes of excellence.
6. The new emphasis must permeate all teacher training programmes that will have to be undertaken in the context of the educational technology project. The new role of the teacher will have to be carefully identified and put across in the teacher training programmes. The objective will be to train teachers who are in tune with the needs of a changed social and educational situation.
7. To begin with the educational technology programme will be organised as parallel to the existing system of education. They will need to be properly evaluated to provide the basis for large scale changes in the traditional system
8. The educational technology programme will be a large scale effort with well identified objectives and will be carried out in collaboration with all concerned agencies and institutions including the media organisations. The support and active participation and involvement of the community will be essential for the success of this type of programme. It should be a prime objective of an educational technology programme to mobilise local support to the maximum possible extent."

2. Educational Technology Unit in the Ministry of Education

Before concluding this section of the review on the educational technology programme in the States, we may make a brief reference to the Educational Technology Unit in the Ministry of Education which was one of the three components set up for the implementation of the programme. As has already been mentioned, the assigned role envisaged for this unit was to administer the project and to perform a coordinating role. It will be seen from the foregoing review that the functions actually performed by the unit went considerably beyond its assigned role. Latterly, the responsibility for laying down the

conceptual framework, providing guidelines for the programme in the post-SITE phase, and assisting the State ET Cells in the development and execution of their programmes became its essential functions, in addition to the administrative and coordinating functions. This experience underlines the necessity of building an element of expertise within the Ministry in the administration of a scheme which is admittedly a new area. A unit administering a scheme in an established area may be able to acquit itself by processing budget proposals and releasing funds, but this cannot be sufficient or even adequate when the area of development is something as new as educational technology.

The staff sanctioned for the Unit comprised a divisional head, an assistant educational adviser, one assistant, one lower division clerk, exclusively for this project. Almost since the inception of the scheme, the divisional head has been assigned functions in addition to those pertaining to the educational technology programme. In fact, at present, educational technology occupies a relatively small part of his work. Similarly, the assistant educational adviser for ET was looking after this scheme in addition to working as a branch officer with a full section under him. And since many months the post is lying vacant. Further more, both these posts have been held by a number of officers ; there have been at least six incumbents for the divisional head's post and about a dozen for the second post. Both posts have been held by CSS officers as well as by officers of the advisory cadre. The changes in the nature of posts and appointments against them had only one rationale ; administrative convenience of the Ministry. It is obvious that these rapid changes in personnel and non-availability of full-time officers have adversely affected the operation of the scheme. In these circumstances, the main role of the ET Unit has been to release funds, obtain quarterly reports and carry out such other administrative requirements.

In connection with the implementation of SITE, a unit for SITE was created in the Ministry with only the post of an Officer on Special Duty (Satellite Education). The post was created on the eve of the commencement of SITE, that is in July 1975. It was extended till February 2, 1977. The duties envisaged for the post were in the nature of assisting AIR and the ET Cells in the planning, production, utilisation and evaluation of the satellite broadcast television programmes. As the post was created when the planning and considerable amount of production of programmes had already taken place, the main areas of work of the OSD became the utilisation and evaluation of programmes.

In the area of evaluation, programme specific studies were planned and undertaken in four States.

The experience gained in carryout these studies suggests the need for continuing assistance to the ET Cells in developing studies in the evaluation of terrestrial broadcast television programme, radio programme and multi-media programmes. Much of the thinking of the Ministry of Education in giving a new direction to the programme has evolved out of the experience gained in the carryout and planning of evaluative studies.

3. Centre for Educational Technology

The third and the major component of the Educational Technology Project, was the setting up and maintenance of the Centre of Educational Technology with UNDP assistance. The functions of the CET were laid down in a carefully developed and detailed Project Document. However, the actual operation of the Centre began with SITE. The most notable effort of the CET was in the development of the multi-media package for the training of primary school teachers in the context of SITE. A Steering Committee was set up in the Ministry of Education to oversee this programme though the preparation of the actual package was the responsibility of the CET in collaboration with the resources, available with the NCERT, State Institute of Science Education and the ET Cells.

The working of the CET is presently being considered by a review committee set up by the NCERT. At this juncture one may draw attention to the following documents :

1. Report submitted by the CET to the review committee on its functioning (Appendix VI).
2. The statement of expenditure on the CET since 1970-71 (Appendix VII).
3. A statement on the staff presently available with the CET (Appendix VIII).

However we may mention that in recent discussions held at Paris in December 1977 on the second phase of the Educational Technology Project Unesco expressed the view that the CET should not take on programmes direct as that was preventing it from fulfilling its essential role of a servicing wing. It was pointed out that the national programme for universalisation of elementary education and adult education involved multi-media inputs which the CET could equip itself to service.

ENCLOSURE I

No. F. 24-15/70-Schools-3

GOVERNMENT OF INDIA
MINISTRY OF EDUCATION AND SOCIAL WELFARE
(Bureau of General Education)

New Delhi, dated the 31st. Oct, 71

Memorandum for the Expenditure Finance Committee

Subject :—Educational Technology Programme—A New Scheme for the Fourth Five Year Plan

1. Statement of Proposal

- (a) *Reasons and justification for proposal, indicating historical background, circumstances in which the need has arisen, whether other alternative have been considered and what detailed studies have been made in regard to the proposal for establishing its need, its relevant aspects.*

Realising the importance of television in the field of Education, the UNESCO had appointed in 1967 an expert mission to visit India to study the possibilities of a Pilot Project in the use of satellite communication for educational and national development purposes. The report of the mission was made available to the Indian Government. The main finding of the report was that some of the most urgent needs of the country could best be assisted through a large-scale use of satellite television as a means of development through education and information.

The Government of India had also taken a decision to extend conventional television broadcasting with a view to using this medium both for school and out-of-school education with special emphasis in the fields of agricultural development, health and family planning. The Government of India in the Ministry of Information and Broadcasting has plans for the location of TV transmitters in the major cities with provisions for the expansion of television, phased over several years, to other urban and rural centres. The first phase of this expansion is already underway.

The Department of Atomic Energy, Government of India have decided to try a direct communication satellite for instructional television as an experimental measure and in collaboration with N.A.S.A., U.S.A.

The Ministry of Information and Broadcasting requested the Administrator, United Nations Development Programme, to send a Mission to assist in the drawing up of detailed plans and in preparing a request for assistance under the special fund for its training programme in view of its proposal to expand television coverage in the country. The Mission under the leadership of Mr. John Willings commenced its work on 31st May, 1969. On arrival the Mission came to know of the proposal of the Ministry of Education for the use of satellite communication for educational purposes and of the proposal of the Department of Atomic Energy for launching an experimental satellite in the near future. The Mission gave its report in November 1969, basing its recommendations mainly on A.I.R.'s expansion programmes. The Mission stated in para 7.1.1. as follows :

“In order to implement the present and projected plans for the development of terrestrial television in India, i.e. six main production centres (1970-75) and eleven subsidiary production centres (1975-80), a training centre capable of producing approximately 200 production and technical operations personnel per annum over the next fifteen years will be required by the Government of India. (This is a minimum number whatever system of TV distribution is evolved)”

The dimensions of the problem have radically altered with the sanction of the DAE-NASA Project. The possibility of exploiting TV as an educational medium on a much larger scale than available hitherto, has, therefore, become real. The TV profile in the country in 1972-73 will be roughly as follows :

- (i) Augmentation of the existing Delhi programme from the current radius of 40 miles to 80 miles (M/I&B)
- (ii) Starting TV at Bombay and link to Poona (M/I&B)
- (iii) Starting TV at Srinagar (M/I&B)
- (iv) The Department of Atomic Energy had planned rural clusters for TV under their satellite programme as follows :
 - (a) 5 clusters of 500 villages in Orissa, Bihar U.P. and Madhya Pradesh.
 - (b) 10 clusters in West Bengal, Andhra Pradesh and Tamil Nadu covering 1000 centres, half of which would be in urban areas and half in rural areas.
 - (c) Covering of rural areas around Ahmedabad and Anand.

On the basis of the satellite experiment which is to be conducted for one year in the first instance, the Department of Atomic Energy proposes to launch its own satellite which will be available for television broadcasting in this country. With this large scale expansion in view, it was necessary to examine the question as to how to utilise television for education to determine fields and problems in education which could be more appropriately resolved by use of television rather than by any other method, to

consider the personnel needed for organising educational TV programmes, organisation of support programmes and preparation of instructional materials for teacher users. The Education Ministry, therefore, set up a Study Group comprising officers from the Ministry of Education and Youth Services and NCERT, Ministry of Information and Broadcasting and representatives of States likely to get TV services in the near future. The recommendations of this group included, among other things : (a) a Cell be set up in the Education Ministry for looking after the work of Educational TV (b) A training Centre for educational TV to be set up in N.C.E.R.T. to train different categories of personnel and particularly TV teachers, User teachers and Script writers. NCERT has been suggested as the other common source facilities viz. laboratories, reference library, educational film library and Textbook Department already exist there. (c) TV Cells to be set up in 1971-72 in each of the State Education Departments of the States which would be having TV by 1972-73; and (d) Assistance of an international agency like UNDP to be asked for providing experts, training facilities and equipment. A copy of the recommendations of this Study Group is attached at Annexure-I

While the Ministry of Information and Broadcasting will be incharge of the actual broadcasting of the programmes and other technical details and the Department of Atomic Energy will be responsible for the hardware segments relating to the satellite, the Ministry of Education will be concerned with educational planning, fixing of priorities for TV in educational fields, development of curriculum, preparation of basic scripts and television lessons, preparation of graphics, multi-purpose kits, models and other audio-visual materials which will not only serve the needs of television lesson but will also be useful for other mass media, such as, the film projector, to be employed to serve educational ends. Trial runs of experimental materials and TV lessons will be required and the Ministry will have to ensure that regular feed back is received to continuously assess and improve the programme. It will arrange for the preparation of instructional materials for guidance of classroom teachers. It will be concerned with the training of basic script writers/full-time television teachers, part-time television teachers and user teachers in the classroom. These jobs will be handled by the Educational Technology Cell in the Ministry of Education and by an Educational Technology centre at the N.C.E.R.T. The E.T Cell at the Ministry of Education and Social Welfare will co-ordinate the activities of N.C.E.R.T., Ministry of Information and Broadcasting, Department of Atomic Energy and the State Governments on the one hand and Foreign Governments as well as the international agencies such as UNESCO, UNICEF, and UNDP on the other. Although the programmes will be national in character and produced centrally the E.T Cells proposed at the State level will assist in the provision of instructional material suitable for that area for production at the central level and in the training programmes of certain categories of personnel such as local teachers. In certain fields such as live broadcasting on general subjects it will coordinate work with local A.I.R. Stations.

It has been pointed out that the proposed E.T. Centre to be established at the National Council of Educational Research and Training will produce basic audio-visual instructional material which can be either in the form of 16 mm films or in the form of recorded television tapes. With this arrangements it will be possible to use the programmes either via television transmitters for school equipped for television, or through film projectors for schools which do not have television receivers. It is expected that for quite some

time to come there will be a large number of schools which will not have television facility, particularly in the remote areas where electricity is not available. Hence the present proposal is meant to economise in the expenditure on the production of audio-visual teaching and training materials. Material for teacher training will be for use either in closed circuit television in the teacher training colleges and institutions or for Broadcast Television as well as for film projectors, as may be convenient.

As recommended by the Study Group set up by the Ministry of Education, a proposal for assistance from UNDP was drawn up and submitted to that Organisation through the Ministry of Finance. The assistance sought was for experts, fellowships, equipment etc., comprising a total aid of \$ 5,64,570 (Rs. 42,34,275), the details of which are given in Annexure VI. Thereafter UNDP sent a specialist mission to India headed by a leading Mass media expert Dr. Wilfur Schramm. This mission recommended increased assistance of \$ 7,78,700 (Rs. 58,40,250) details of which are also in Annexure VI. The proposal has been sanctioned by UNDP since.

Apart from the expected foreign, assistance from an international specialised agency of about Rs. 58.40 lakhs, Indian expenditure is expected to be in the neighbourhood of Rupees seventy-six lakhs, spread over a three-year period, from 1971 to 1974, made up as follows :

(1) ET Cell in Ministry	Rs. 1.38 lakhs
(2) ET Cells in States	Rs. 21.31 ,,
(3) ET Centre at NCERT**	Rs. 28.15 ,,
(4) Foreign experts (Indian Shares)	Rs. 4.70 ,,
(5) Building*	Rs. 20.00 ,,
	Rs. 75.54 ,,
Total	Rs. 75.54 ,,
or say	Rs. 76 lakhs

As for the expenditure to be incurred in the States, it is proposed to provide assistance to 12 States during the first year of the programme which are expected to be covered either by I & B Ministry's programme of extension of terrestrial television or by DAE programme. They are Maharashtra, Tamil Nadu, Andhra Pradesh, Uttar Pradesh, Jammu & Kashmir, Himachal Pradesh, Bihar, West Bengal, Orissa, Madhya Pradesh, Gujarat and Rajasthan. The remaining six States namely, Haryana, Assam, Kerala, Mysore, Punjab, Meghalaya and Nagaland, will be covered during the second year. A statement showing the extent of Central Assistance to be provided to these States in a phased manner is attached (Annexure-V). No assistance will be necessary after the fourth plan period as the ET Cells to be set up in the States with Central Assistance will be transferred to the control of the State Governments with effect from 1974-75.

* (will be required in addition to Rs. 5 lakhs provided for air-conditioning, sound-proofing, special lighting etc., in case now building is to be constructed as part of the NCEKT complex).

** (includes Rs. 5 lakhs for alteration and additions, air-conditioning, sound-proofing and special lighting in NCERT's Bldg.)

- (b) *Has the proposal been included in the Plan and what is the provision? Is any modification proposed?*

The scheme has been approved for inclusion in the Fourth Five-Year Plan. The detailed proposal submitted by the Ministry of Education to the Planning Commission envisaged a plan provision of Rs. 106 lakhs which has since been reduced to Rs. 76 lakhs. The scheme was discussed in a special inter-ministerial meeting convened by the Planning Commission on 25.5.1970, and has been cleared, subject to it being ensured that there is no duplication of effort of as between the Ministry of Education and the Ministry of Information & Broadcasting. It has been verified that there is no duplication. In this connection, a paper recently prepared by the Ministry of Information & Broadcasting may be seen at Annexure VII in which it has been stated that there is no conflict in the proposals of Information & Broadcasting and Education Ministries. The details of expenditure are given in Annexure-II. Earlier, the Planning Commission had agreed to provide Rs. 1 lakh on an *ad hoc* basis for the year 1970-71, for this programme.

- (c) *What is the estimated yield from the project and what are the economic implications?*

No receipts are anticipated. The project is intended to stimulate education at the primary, middle and secondary levels. The programmes will be structured as national programmes to be used all over the country, and would thus also strengthen national integration. The programme will also contribute towards a reduction of wastage at the school level particularly at the primary level as primary school instructions will become more interesting. As there are nearly 150,000 educational institutions in the country, the scheme will also stimulate the TV receiver industry and ancillary repair and supply services in the country-

- (d) *Have other concerned Ministries and Planning Commission been consulted and, if so, with what result?*

The planning Commission have approved the scheme for inclusion in the Fourth Five-Year Plan and have also agreed to a provision of Rs. 77 lakhs on this account. The Ministry of Finance have also agreed to an *ad hoc* provision of Rs. 1 lakh for 1971-72 for the Cell to be created in the Ministry of Education and Social Welfare and for the establishment of an E.T. Centre in NCERT.

- (e) *Has the proposal or its variant been gone into by any Committee, Department or Parliamentary, and, if so, with what result and what decisions have been taken?*

As has already been stated above, the proposal was examined by an inter-ministerial group and, as per its recommendations, the financial and administrative details of the scheme have been worked-out. The recommendations of the Study Group are at Annexure I.

2. Programme Schedule

- (a) *Has the project/scheme been worked out and scrutinized in all its details?*

Yes. vide Annexure II, III, IV, V, and VI.

- (b) *What is the schedule for construction, indicating the position separately relating to plant and machinery and civil works, raw materials, manpower, etc. together with year-wise phasing ?*

In the Educational Technology Centre proposed to be set up in the NCERT some alterations in the existing building will have to be carried out and air conditioning, sound proofing and special lighting provided in laboratories and studies as indicated in Annexure II. Some equipment is expected to be received from UNDP in 1971-72 itself.

- (c) *What is the target date for completion and when will the expected benefits commence ?*

The scheme will be completed in 1973-74. Release of recorded programme material is expected to commence from 1972 and can be used either for TV broadcast or for film projection. Orientation of Key personnel will be completed by the end of 4th Plan period.

3. Expenditure Involved

- (a) *What is the total expenditure (non-recurring and recurring), indicate the position whether any budget provision has been made and, if not, how it is proposed to be arranged ? Has any expenditure been incurred already ?*

Total expenditure involved in the programme is about Rs. 134 lakhs and approximately Rs. 76 lakhs is to be met from the Government of India's budget, the remaining is expected from UNDP. Details of Indian expenditure are indicated in Annexure-II. A budget provision of Rs. 1 lakh on adhoc basis has been approved by the Planning Commission and included in the budget of the Ministry of Education for 1971-72. The year-wise plan expenditure is as follows :—

year	Recurring	Non-recurring	Total
	<i>Rs. in lakhs</i>	<i>Rs. in lakhs</i>	<i>Rs. in lakhs</i>
1971-72	3.58	15.00	18.58
1972-73	17.02	12.33	29.35
1973-74	17.61	10.00	27.61
	38.21	37.33	75.54

- (b) *What is the foreign exchange component (separately for non-recurring and recurring expenditure) ? what are the items of expenditure involving foreign exchange and expenditure on foreign experts ? Has clearance of E.A.D been obtained and has availability of credit facilities been explored and if so, with what results ?*

No foreign exchange is involved. As stated above, assistance from UNDP of the order of Rs. 58.40 lakhs is expected in the form of equipment, experts and fellowships.

- (i) *the number of posts required and the pay-scale, together with basis adopted for staffing both in current year and future years.*

Statement showing the expenditure on staff and on other recurring and non-recurring items for the E.T. Centre in the NCERT is enclosed at Annexure III.

Statement showing posts for the ET Cells for the Ministry of Education and Social Welfare is enclosed at Annexure-IV.

Statment showing the expenditure on Cells in the States is enclosed at Annexure V. The staff requirements are based on the assessment made by UNDP-UNESCO Mission which visited India last year to appraise the programme. The scales of pay adopted are already in vogue for similar posts in the respective organisations.

- (ii) *expenditure on buildings and other works and its basis and phasing.*

Expenditure on buildings will be incurred only, if it becomes necessary Rs. 5 lakhs for the additions/alterations/sound proofing and special lighting in the existing NCERT buildings have been provided.

- (iii) *expenditure on stores and equipment.*

Rs. 7.5 lakhs is being provided for publications, kits, tapes, recorders, etc.

4. Supplementary Information, if any.

'NIL'

5. Points on Which Decisions/Sanctions are Required.

As this is a new Scheme, approval of the expenditure Finance Committee is requested for its implementation. Education Secretary has seen and approved the note.

(T. R. JAYARAMAN)
(Joint Secretary)

N.B. Annexures 'II' to 'VI' are not enclosed with it.

ANNEXURE I

RECOMMENDATIONS of the Study Group on Educational Television Programming appointed by the Ministry of Education and Social Welfare.

- (1) A permanent cell in the Ministry of Education and Social Welfare for attending to the educational TV programming should be set up immediately.
- (2) A training Centre to be located in NCERT should be started from June, 1970.
- (3) The training of the TV teachers for States should be borne by the Central Training Centre but the responsibility of organising workshops for the user teachers to reorientate them for using TV lessons in class rooms, should be organised by the States.
- (4) Each State which is likely to be covered by TV in 1972 may set up TV Cells in their Education Departments and also prepare to send their teachers for training purposes to the Central Training Centre.
- (5) The TV authorities at each station may appoint staff consisting of teachers on deputation basis from the State. In addition, they may also have a panel of 8—10 teachers on part-time basis for teaching.
- (6) The Central Training Centre would train the TV teachers and evaluators. The TV teachers would serve a dual function of basic script writers as well as TV teachers. A six months' training programme for this category of persons is considered necessary.
- (7) The number of persons which each State will have to send to the Central Training Centre would be between 10—20 in the first instance.
- (8) The TV lesson should begin from the first year of the higher, primary (middle) school and the entire range of higher primary and secondary should be covered progressively every year.
- (9) The teacher training programme should also be undertaken through TV. This should be both for content enrichment and for teaching of methodology. The teacher training programme could be more appropriately used for teaching the new approach to science and teaching of new Mathematics in the first instance.
- (10) It is not necessary to have common curriculum in all States. So long as the curriculum is similar, it is sufficient for TV purposes. Science and Mathematics would be more easy to telecast on national basis and local variation might be necessary for teaching of Science studies. The teacher training programme and language programme could also be telecast on national basis.

- (11) It will be necessary to send some persons for training abroad but such training would be more useful if the person to be sent does some work first in Indian television before going abroad. The training Centre should make use of the personnel already recruited under Delhi Television programme.
 - (12) The training facilities offered by Australia and Britain will be more suitable for our purposes and other countries do not appear to have package training programme.
 - (13) It would be necessary to get some experts. The fields in which we need expert advice may be decided by the Ministry of Education and Social Welfare in consultation with such Department/authorities as it considered appropriate.
 - (14) The training Centre would need a good deal of equipment. The list of equipment and costing pattern would be prepared by a sub-committee consisting of Shri Romesh Chander, Shri Wanchoo and Smt. Mulay.
 - (15) Assistance of an international agency like UNESCO may be asked for providing experts, training facilities and equipment.
 - (16) Assuming that the programme has to be ready to go on air from the middle of 1972, stock piling of lessons on tape has to begin six months in advance ; i.e. from December, 1971. The trained personnel will therefore have to be made available by March, 1971.
 - (17) The Training Centre and the Cell in the Ministry should also undertake examination of curriculum, carry on dialogue with the States regarding setting up of TV Cell making necessary provisions in budgeting etc, Studies and surveys and research in respect of telegenic units in various disciplines, experimental lessons, languages to be used, will have to be undertaken immediately.
 - (18) The Ministry of Education and Social Welfare will prepare the financial details on the basis of the decisions taken.
 - (19) It was also agreed that it was necessary for the Ministry officials to view the TV lessons and some arrangement for providing of a TV set might be made.
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*Paper prepared by the Ministry of
Information and Broadcasting*

**Programme Production Facilities for Preparation of Programme for the
Satellite Television Experiment**

Government of India in the Department of Atomic Energy (DAE) and the United States National Aeronautics and Space Administration (NASA) signed an agreement on September 18, 1961 to conduct a Joint experiment for broadcast of instructional TV programmes from a satellite for about a year with all programming under the direct control of Government of India. The satellite will be available for TV broadcast for 4 to 6 hours a day commencing early 1974 for one year.

2. According to the DAE—NASA, agreement, the responsibility for space segment will be that of NASA and that for ground segment will be that of Government of India. The ground segment will include provision of necessary hardware and production of programmes. Provision of facilities for transmission of programmes to the satellite, reception of programmes from the satellite and the supply of "Augmented" TV receivers for reception in community viewing centres will be the responsibility of the Department of Atomic Energy.

3. An important element of this experiment is production of TV programmes. This will be the exclusive responsibility of Ministry of Information and Broadcasting. Thus all programmes will be prepared by All India Radio which will also co-ordinate work relating to specialised inputs from other Ministries such as Agriculture, Education, Health and Family Planning, etc. which require television support for their development programme. This position has been endorsed by the Committee of Secretaries which discussed the question of allocation of work and responsibility amongst different Ministries of the Government of India in the context of this experiment on July 5, 1971. At this meeting, among other things, it was agreed that the Ministry of I and B will have the exclusive responsibility of educating the public in India about the affairs of the nation and every programme that would be broadcast in the DAE—NASA experiment would have to be approved by the Ministry of I and B before broadcast. The committee also noted that urgent action would need to be taken to ensure that enough stock of software was ready by the time the DAE—NASA experiment begins in 1974.

4. It is, therefore, necessary that the required facilities for production of these programmes should be provided. These will include studios and filming facilities. Accordingly, a proposal in the form of an E.F.C. Memo was prepared and sent to the Ministry of Finance on April 30, 1971. Ministry of Finance have, however, returned the E.F.C. Memo and asked for clarification of several points. Their queries give the impression of inadequate realisation of the responsibility of this Ministry in the matter of

production of programmes. The proposal envisages an expenditure of Rs. 125.87 lakhs with foreign exchange content of Rs. 50.25 lakhs. In this proposal provision is sought to be made for setting up six field units and three base units for preparing programme material. These plans have been prepared in accordance with the field of the experiment prepared by the Department of Atomic Energy.

5. In the meeting held in the Planning Commission on 25th May, 1970 to consider the educational TV programmes in the Fourth Five Year Plan it was felt that for the effective exploitation of the Television medium for educational advancement it was essential that Ministries of Education and Information and Broadcasting should work together in close co-operation and pool their resources for exploiting the new medium in the best national interests. In the DAE—NASA experiment, the Ministry of Education will develop programmes for broadcast in the field of curriculum development and National Council of Educational Research and Training would identify the problems involved and prepare basic 'Script' models and also prepare production kits of audio visual insert materials which would be the core of learning resources around which TV programmes can be created. These aspects have been discussed and there is no conflict in the proposals of Information and Broadcasting and Ministry of Education.

6. Information and Broadcasting will also have to co-ordinate with several other user Ministries such as Agriculture, Health and Family Planning and Education and Social Welfare in the production of programmes. Since the satellite is likely to be available in the beginning of 1974, work on programming for the experiment has to start at least one year ahead of that date. To have a meaningful impact of the programme it is essential to have pretesting of the programmes primarily to be conducted with a view to help improve upon actual programmes which are to be telecast. The pretesting of programmes has to be conducted in the cluster areas for a period of six months prior to the experiment for assessing the attitudes of the audience in the various regions and determining the nature and type of programmes which would suit different areas. To keep to this time schedule work on programmes for pretesting will have to begin by the middle of 1972 at the latest.

7. It is visualised that programmes on agriculture, family planning, etc. would have a great deal of local content and for producing these programmes it is necessary to set up small field programme units in all the regions where direct reception 'augmented' TV sets will be installed. These field programmes units will feed the Base Production Centres to be located at Delhi, Madras and Calcutta. These three base units will prepare the programmes for pretesting of actual broadcasts based on the material supplied by field units. The base units and field units have to be provided with minimum equipment facilities for production of programmes for pretesting. The equipment that will be procured for the pretesting will ultimately be integrated in the permanent set up for the production of programmes.

8. It is feared that the Ministry of I and B will not be able to make its contribution to the success of this experiment unless these proposals are approved quickly and the necessary equipment is procured without further delay.

ENCLOSURE II

No. 9028-Edu. Unit/71

GOVERNMENT OF INDIA
MINISTRY OF FINANCE
Department of Expenditure
Education Unit

New Delhi, the 29th November, 1971.

Memorandum

Subject : Educational Technology Programme—a New Scheme for the Fourth Five Year Plan.

Reference is invited to this Ministry's memorandum of even no. dated 10th November, 1971 on the subject mentioned above. A meeting of the Expenditure Finance Committee was held on 19th November, 1971 to consider the proposal of the Ministry of Education & Social Welfare. A copy of the minutes of the meeting is enclosed.

Sd/-

(O.P. MOHLA)

Deputy Secretary to the Government of India

To

The Ministry of Education

1. Shri T.P. Singh, Secretary.
2. Shri T.R. Jayaraman, Joint Secretary.
3. Shri J. Veeraraghavan, Director (IF)
4. Shri Mahmood Ali, Deputy Secretary.

The Department of Atomic Energy

1. Dr. Vikram A. Sarabhai, Secretary.
2. Prof. E.V. Chitnis, Secretary (ISRO).

The Ministry of I & B

1. Shri A.S. Gill, Joint Secretary.
2. Shri R. Balakrishnan, Deputy Secretary.

The Planning Commission

1. Shri D.P. Nayar, Senior Specialist.

The Department of Economic Affairs

1. Shri M.G. Kaul, Additional Secretary.
2. Shri B. Maithreyan, Joint Secretary.
3. Shri A.B. Adarkar, Under Secretary.

The Department of Expenditure

1. P.S. To Secretary (E)
2. P.S. to Additional Secretary (EA&E).
3. Shri P.K. Kaul Joint Secretary.

Minutes of the meeting of the Expenditure Finance Committee held on 19th November, 1971 in the room of Secretary (Expenditure) to consider the Scheme of the Ministry of Education & S.W. relating to Educational Technology Programme.

Present

Shri M.R. Yardi, Secretary (Expenditure)..... Chairman.

Ministry of Finance

1. Sh. S.D. Nargolwala,
Additional Secretary (EA & E)
2. Sh. P.K. Kaul,
Joint Secretary (Plan Fin.)
3. Sh. O.P. Mohla,
Deputy Secretary
4. Sh. A.B. Adarkar,
Under Secretary
Deptt. of Economic Affairs.

Ministry of I & B

Sh. R. Balakrishnan,
Deputy Secretary

Ministry of Education

1. Sh. T.R. Jayaraman,
Joint Secretary
2. Sh. J. Veeraraghavan,
Director (IF).
3. Sh. Mahmood Ali,
Deputy Secretary

Department of Atomic Energy

*
Prof. E.V. Chitnis,
Secretary
Indian Space Research Organisation.

Planning Commission

Sh. D.P. Nayar, Sr. Specialist.

1. Shri S.D. Nargolwala initiated the discussion by explaining the details of the salient features of the Scheme as embodied in the E.F.C. Memo. It was noted that the Scheme would involve a total expenditure of about Rs. 134 lakhs during the Fourth Plan period—Rs. 58.50 lakhs assistance from UNDP and Rs. 75.50 lakhs, including Rs. 20 lakhs on new buildings, as devolving on the Government of India. He expressed the view that the objectives of the Scheme appeared to be good and *prima facie* the Scheme could be accepted in principle. He however, brought out the following points which had not been satisfactorily explained in the EFC Memo or those which required to be highlighted and discussed in the meeting:

- (i) The Scheme was not included in the original Fourth Plan of the Ministry of Education and it required to be considered whether it should not be postponed due to the current economy drive;
- (ii) There was no clear indication that the State Governments had agreed to take over at the end of the Fourth Plan the financial responsibility in respect of Educational Technology Cells to be set up in the various States and proposed to be financed in the Fourth Plan period by the Central Government;
- (iii) The functions of the ET Cells to be set up in States had not been spelt out in sufficient details;
- (iv) The phased programme of the setting up of ET Cells in the States did not appear to have been dovetailed with the Ministry of I&B's TV Expansion Programme for the foreseeable future or that of NASA—Deptt. of Atomic Energy Satellite Programme;
- (v) The need to cut down expenditure on buildings unless it is altogether unavoidable.

2. Prof. Chitnis stated the programme of Deptt. of A.E. for TV under their Satellite Programme. From this, it was clear that the TV facilities under the NASA—Deptt. of A.E. Satellite Programme were not likely to be available until 1974-75.

3. Shri Balakrishnan explained that AIR's Bombay and Srinagar TV Stations would be ready by October 1972. He assured that for both the Stations the building work was in advanced stage of completion, the equipment had already arrived and that there was no reason to expect that it would not be possible to adhere to the time limit.

About the remaining TV Stations in the Fourth Plan Shri Balakrishnan stated that Madras, Calcutta and Lucknow—Kanpur Stations had already been sanctioned, site selected and the equipment ordered. The building work was to start shortly and his expectation was that these Stations would be ready for commissioning by the end of 1973-74. In

regard to Satellite Project, he mentioned that it was only an experimental Project for one year and there was no on-going programme for a Satellite of our own after this experiment was over. He was, therefore, of the view that it would be necessary to relate the Education Ministry's proposal to the AIR's Programme for the establishment of terrestrial TV stations and not to the Satellite Project.

4. Shri T.R. Jayaraman (Ministry of Education) explained that although in the statement of the proposal a good deal has been mentioned about the need for the use of TV facilities under the I & B Ministry's programme of expansion and that through Satellite, the Scheme was not based entirely on the use of TV facilities. He explained that the Scheme involves production of basic audio-visual instructional material which can be used either in the form of 16 mm films or in the form of recorded TV tapes and that it would be possible to use the material via TV transmitters for schools equipped with TV or through film projectors for schools which do not have TV receivers. He added that nearly 20,000 Schools in the country have got film-projectors. As regards the financial responsibility in respect of ET Cells in the States, he explained that their understanding was that they would become the responsibility of the States at the end of the Fourth Plan. He, however, offered to write to all the State Governments concerned and get their explicit agreement on this issue. He went on to say that the functions and responsibilities of ET Cells in the States would be as follows :—

- (i) To prepare printed literature to be supplied to schools to go with the broadcast television lessons in the manner already being done in Delhi.
- (ii) To train user-teachers who will give the pre-telecast instructions and conduct post-telecast discussions.
- (iii) To co-ordinate the schools' time-table with the A.I.R.'s television broadcast programmes.
- (iv) To arrange to produce certain programmes of a local nature, some of which may be live programmes. The two script-writers to be attached to the Cell will produce these programmes and also the instructional literature referred to above. The programmes may be rehearsed and produced in the A.I.R. Studios nearest to the State. In some States it will be in the headquarters itself; in others they may have to use the base production units of the AIR or the TV Studios of the terrestrial stations.
- (v) The State TV Cell will also arrange for selecting Script-writer teachers for training in Delhi at the N.C.E.R.T.
- (vi) They will do the necessary liaison work vis-a-vis Government of India, Ministry of Education on the one hand and the State Department of Education and Schools on the other.

5. Commenting on the Scheme, Shri D.P. Nayar (Planning Commission) expressed the view that the relative costs of the programme vis-a-vis other methods has

not been done. He also pointed out the non-availability of funds even for comparatively more essential Schemes and advised that the availability of resources should be ensured before the Scheme is taken up. He however, added that the preparation of the software for instructional purpose through TV is a long drawn out process and it was desirable that a beginning should be made as early as possible.

6. In the light of the foregoing discussions, the Committee took the following decisions :—

- (i) The Scheme may be approved in principle subject to the expenditure on it during the Fourth Plan being accommodated within the existing Plan allocation of the Ministry;
- (ii) The building programme costing Rs. 20 lakhs should be deleted and the Scheme implemented in the accommodation already available in NCERT with such modifications, etc., as may be necessary. (It was noted that the estimates of expenditure amounting to Rs. 75.50 lakhs included provision both for alteration and new construction). In making this recommendation, the Committee was guided, *inter alia*, by the fact that in case the construction of new building is taken up, the main programme will be considerably delayed.
- (iii) The staffing pattern in the ET Cells in the States and in the Production-Cum-Training Centre in NCERT, the pay scales of various posts, and other items of expenditure should be finalised in consultation with the Ministry of Finance. The establishment of ET Cells in the Ministry, as proposed in the EFC Memo., was approved. It was noted that the posts of Deputy Secretary and Assistant had already been sanctioned.
- (iv) Taking into account the availability of terrestrial TV facilities in the foreseeable future, to begin with, ET Cells should be set up only in the States of J&K, Maharashtra and Delhi.
- (v) The Ministry of Education should discuss with the State Governments concerned and satisfy themselves in regard to their arrangements for the supply and maintenance of TV sets to Schools.
- (vi) Prior agreement of the State Governments concerned should be obtained for their financial participation as envisaged in the Scheme, especially for assuming financial responsibility in respect of ET Cells in the States from the beginning of the Fifth Plan.
- (vii) Another scrutiny should be undertaken in regard to the various items of equipment to be obtained under UNDP-Assistance with the help of experts available in the country. This arose out of a point made by Prof. Chitnis that a mobile TV Unit costing only \$ 25,000 would not be adequate for the purposes of the Scheme.

ENCLOSURE III

No. F. 24-15/70-Schools-5
GOVERNMENT OF INDIA
MINISTRY OF EDUCATION AND SOCIAL WELFARE
(Department of Education)

New Delhi, dated 18th March, 1972.

To

The Accountant-General,
Central Revenues,
New Delhi.

Subject : Educational Technology Project.

Sir,

In the context of the increasing use of audio-visual aids made by the educationists throughout the world, the Ministry of Education have been considering a Project for integrated audio-visual instruction by making full use of films, radio broadcasts, the expanded television coverage of the country and the new educational techniques such as video-audio recorders, programmed learning etc. While preparing this Project, the possibility of using satellite broadcasts for educational purposes has also been taken into account. The project involves (i) the setting up of an Educational Technology Centre at Delhi, (ii) the formation of ET Cells in the various States and (iii) the creation of an Educational Technology Unit in the Ministry of Education for administering the programme.

2. I am now directed to convey the sanction of the president to the implementation of the project in accordance generally, with the following arrangement :

Objective : The Project is intended to stimulate education at all levels and to bring about qualitative improvement in education. It is also expected to contribute towards reduction of wastage at the school level, particularly, at the primary level, by making the primary school instruction more interesting and effective by supply of audio-visual instructional material and training of personnel required.

Programme : To implement the Project, a Centre of Educational Technology will be set up at Delhi. The Centre will be concerned with the development of curriculum, preparation of basic scripts for films, radio and television lessons, preparation of graphics multipurpose kits, models and production of audio-visual instructional materials including 16 mm film. It is intended to use the material produced at the Centre either *via* television transmitters for institutions equipped with Television sets or through sets or through film projectors for those which do not have Television receivers as well as through tape recorders and closed circuit Television. The Centre will also train personnel for producing educational television, programmes and 16 mm teaching films. The UNDP has offered to provide necessary equipment and make available the services of a few experts for organising the new programme. The UNDP has also offered a few fellowships for providing training to Indian personnel.

Besides the Educational Technology Centre at Delhi, Educational Technology Cells will be set up in various States in a phased manner. Such cells would, to begin with, be set up in the States served or shortly to be served by AIR Television Stations as also by Satellite Broadcasting. The functions and responsibilities of the State ET Cells would be as follows :-

- (i) to prepare printed literature required for the broadcast lessons ;
- (ii) to train user (i.e. classroom) teachers who will pre-broadcast instructions and conduct post-broadcast discussions in the classroom ;
- (iii) to co-ordinate the class time-table with the All India Radio broadcast programmes
- (iv) to arrange to produce certain programmes of a local nature some of which may be live broadcast programmes ;
- (v) to arrange to exhibit educational film in a planned manner related to the curriculum ;
- (vi) to make use of all audio-visual and other modern technologies to improve education ;
- (vii) to assist in the selection of script writer teachers for training ;
- (viii) to do the necessary liaison work, vis-a-vis Government of India, Ministry of Education on the one hand and the State Departments of Education and the schools, on the other.

The States cells will be set up by the respective States and administered by them on behalf of the Government of India during the Fourth Plan period, i. e. up to the 31st March, 1974. With effect from 1st April, 1974, the financial responsibility of these cells will be transferred to the respective State Governments who will then maintain and administer these Cells without any financial assistance from the Government of India. The Cells will be established only after the State Governments have given an undertaking to run these Centres at their own cost from 1974-75.

To administer the Project, an ET Unit will be established in the Ministry of Education. The staffing pattern for the same is given in Annexure. Besides dealing with policy matters this Cell will co-ordinate the activities of NCERT, the Television and Film Institute, the Ministries/Departments of the Government of India and the State Governments on the one hand and foreign Governments and international agencies, such as UNESCO, UNICEF and UNDP, on the other.

The Project will be a Plan scheme to be implemented by the Ministry of Education with the assistance of UNDP.

Yours faithfully,
Sd/-Mahmood Ali.
Deputy Secretary to the Government of India.

Copy forwarded for information to :

- (i) Education Secretary of all State Governments and Union Territories.
- (ii) Ministry of Information & Broadcasting.
- (iii) Department of Atomic Energy.
- (vi) Planning Commission.
- (v) NCERT
- (vi) Ministry of Finance (Education Unit), with reference to Memo. No. 9028-Edu. Unit dated the 29th November, 1971.
- (vii) Planning Unit, Ministry of Education & Social Welfare.

Sd/-Mahmood Ali
Deputy Secretary to the Government of India.

Annexure

EDUCATIONAL TECHNOLOGY PROJECT

Requirement of Staff

for setting up of Educational Technology Unit in the Ministry of Education & Social Welfare.

Designation of Posts	No. of Posts	Scale of Pay
Deputy Educational Adviser/Deputy Secretary	1	Rs. 1,100-1,800
Assistant	1	Rs. 210-530
Lower Division Clerk	1	Rs. 110-180
Peon	1	Rs. 75-85

ENCLOSURE-IV

IMMEDIATE

No. F. 2-3/72-ETU

GOVERNMENT OF INDIA
MINISTRY OF EDUCATION AND SOCIAL WELFARE

(Department of Education)

Shastri Bhavan, New Delhi
October 19, 1972.

From

Mahmood Ali,
Deputy Secretary to the Government of India.

To

1. The Education Secretary to the
Government of Maharashtra,
Education & Social Welfare Department,
Sachivalaya, Bombay-32.
2. The Education Secretary to the
Government of Punjab,
Secretariat, Chandigarh.
3. The Education Secretary to the
Government of Jammu & Kashmir,
Education Department,
Srinagar.

Subject :-Educational Technology Project.

Sir,

I am directed to refer to this Ministry's endorsement No. F. 24-15/70-S3 dated the 18 March, 1972 (copy enclosed for ready reference), on the subject noted above and to convey the sanction of the President to the setting up of an Educational Technology Cell in Maharashtra, Punjab and Jammu & Kashmir, by creating the following posts in each State :—

Designation of the post	No. of Posts	Scale of Pay
(i) Officer-in-charge	1	In the scale applicable to Under Secretary of the respective State Government.
(ii) Programmer-cum-Script-writer	2	In the scale applicable to Senior Post-graduate teachers of the respective State Governments plus 10% thereof, as Deputation Pay.
(iii) Officer Superintendent	1	In the scales of pay of the respective State Governments.
(iv) Steno-typist	1	
(v) Assistant	1	
(vi) Peon	1	
(vii) Driver (jeep)	1	

2. The Officer-in-charge to be appointed, should be an officer of Under Secretary's status drawn from administrative/educational service having three years' experience in education preferably in the field of Educational Technology. He will be in over all charge of the Education Technology Cell and will :—

- (i) draw up a programme for the State for making efficient use of mass media and modern educational technology for education, including school and college education, open schools and open universities, literacy, further and continuing education, and scientific, cultural and technological education of those already employed in various sections of the economy ;
- (ii) co-ordinate with local All India Radio stations for the production of suitable educational programmes on radio and television ;
- (iii) prepare a State plan for producing films for all stages of education and for out-of-school informal and adult education and teacher education particularly for work experience programmes and for craft education at the school level ;
- (iv) assist in the selection and training of script writers, presenters and classroom teachers required for the implementation of Educational Technology Programme of the State ;and
- (v) liaise between Government of India, Ministry of Education on the one hand and the State Department of Education and Educational Institutions on the other.

3. The posts of the Programmers-cum-Script writers should be filled by deputation of post graduate teachers with good academic record, possessing at least five years teaching experience and 3 years experience in writing script for films, radio, TV etc. Their duties will be :—

- (i) to write scripts for radio, TV, and other educational programmes,
- (ii) to assist the local All India Radio stations in the actual production of radio and TV programmes,
- (iii) to prepare class-room materials to supplement the radio, television and other programmes,
- (iv) to coordinate the class time table with the All India Radio's television and radio broadcasts,
- (v) to produce certain programmes of a local nature some of which may be live broadcast programmes, and
- (vi) to generally assist the officer-in-charge in the implementation of the State programme for making efficient use of mass media and modern educational technology for education.

4. The other posts may be filled according to the Recruitment Rules obtaining for similar posts in the respective State Governments.

5. The entire staff of the Educational Technology Cells, will be borne on the strength of the State Governments, and will be subject to the State Governments, Rules and Regulations. They will also get dearness allowance, house rent allowance, compensatory allowance and other allowances, as may be admissible to the State Government employees.

6. As already stated in this Ministry's endorsement under reference, the entire expenditure on the employment of the above staff and the maintenance of the State Educational Technology Cells will be met by the Government of India during the Fourth Plan Period i.e. upto the 31st March, 1974.

7. Necessary steps may now kindly be taken to establish the ET Cells in your States and to draw up and implement suitable State programmes for making efficient use of mass media and modern Educational Technology for education, including school and college education, open schools and open universities, literacy, further and continuing education and scientific cultural and technological education for those already employed in various sections of the economy.

8. A realistic estimate of the expenditure to be incurred during the current financial year on the above staff and on the maintenance of the ET Cell including transport, furniture, contingencies of nonrecurring nature, etc., may kindly be made and the State Government's requirement of funds intimated, with full details so as to enable this Ministry to sanction necessary grants-in-aid out of the Budget provision made under Demand No. 22-A-Grants-in-aid to State Government A-4. A-4 Grants-in-aid for Central Plan Schemes. A-4 (14) General Education and Cultural Programmes sanctioned by Ministry of Education and Social Welfare Educational Technology Programme.

Yours faithfully,

Sd/-

(Mahmood Ali)

Deputy Secretary to the Govt. of India

Copy with a copy of the enclosure, to :—

1. Accountant General, Central Revenues, New Delhi, with reference to this Ministry's letter No. 24-15/70-S. 3 dated the 18th March 1972.
2. Accountant-General, Maharashtra, 101 Maharishi Karve Marg, Bombay-20.
3. Accountant-General, Punjab, Simla.
4. Accountant-General, Jammu & Kashmir, Jammu & Kashmir State Secretariat, Srinagar.
5. Director, National Council of Educational Research and Training, NIE Campus, Sri Aurobindo Marg, New Delhi-110016.
6. Ministry of Finance (Education Unit), with reference to their U.O. No. 8392/72, dated the 4th October, 1972.
7. Officer-on-Special Duty (Mrs. V. Mulay), Ministry of Education & Social Welfare (Department of Education), Shastri Bhavan, New Delhi.

Sd/-

(Mahmood Ali)

Deputy Secretary to the Govt. of India.

Encl : As above.

