



PROGRAMME OF ACTION

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INTRODUCTION

The Parliament during the Budget Session in 1986 discussed and adopted the "National Policy on Education 1986". A promise was made at that time by the Minister of Human Resource Development that he would present in the Monsoon Session a Programme of Action for the implementation of the policy. Immediately after the Budget Session, the Ministry undertook an intensive exercise to prepare the promised Programme of Action.

2. In the first place, 23 Task Forces were constituted and each was assigned a specific subject covered by the National Policy on Education (N.P.E.). Eminent educationists, experts and senior representatives of Central and State Governments were associated with these Task Forces. The subjects assigned to the Task Forces were as follows:

- I. Making the System Work
- II. Content and Processes of School Education
- III. Education for Women's Equality
- IV. Education of the Scheduled Castes, Scheduled Tribes, and other backward sections
- V. Minorities' Education
- VI. Education of the Handicapped
- VII. Adult & Continuing Education
- VIII. Early Childhood Care and Education
- IX. Elementary Education (including NFE and 'Operation Blackboard')
- X. Secondary Education and Navodaya Vidyalayas
- XI. Vocationalisation
- XII. Higher Education
- XIII. Open University and Distance Learning
- XIV. Technical and Management Education
- XV. Research and Development
- XVI. Media and Educational Technology (including use of Computers in Education)
- XVII. De-linking degrees from jobs and Manpower Planning
- XVIII. The Cultural Perspective and Implementation of Language Policy
- XIX. Sports, Physical Education & Youth
- XX. Evaluation Process and Examination Reform
- XXI. Teachers and their Training
- XXII. Management of Education
- XXIII. Rural Universities/Institutes

3. The Task Forces were requested to examine the present situation in respect of the subjects assigned to them and to elaborate the implications of the specific statements contained in the N.P.E. The Task Forces were also expected to project the actions that would be necessary and indicate the broad targets and the phasing of the programmes. They were requested to indicate the broad financial implications with reference to each phase.

4. In spite of the constraint of time, the Task Forces accomplished their work with great care. They submitted their reports in July 1986. These reports were discussed in a series of meetings taken by the Minister of Human Resource Development. After these discussions were completed, a conference of Education Secretaries of the State Governments and U.T. Administrators was convened on the 20th July, 1986. Suggestions received during this meeting were carefully considered and the Programme of Action was prepared with reference to the main areas covered in N.P.E. The Central Advisory Board of Education met at New Delhi on the 1st and 2nd August, 1986. The document on the Programme of Action was discussed at this meeting, and several valuable suggestions were made by the Education Ministers of State Governments and U.T. Administrations and educationists who participated in the discussion. All these suggestions have been taken into account in the Programme of Action which is now presented to the Parliament.

5. This Programme of Action is meant to provide an indication of the nature of actions which will be needed in order to implement the directions of the Policy. It provides a broad strategy within which detailed schemes will be subsequently drawn up; it will also facilitate the preparatory work which will be required before such schemes can be worked out fully and put into operational form. The detailed projects will be taken up for formulation by the various departments and agencies, in consultation with all concerned, once the strategy outlined in the Programme of Action has been examined and endorsed by the Parliament. It is necessary to stress that what is presented here is not an inflexible structure but only a projection of directions with varying degrees of detail. A certain amount of flexibility is assumed which will help the implementing agencies in tailoring the Programme of Action to suit their contexts and to make necessary modifications on the basis of experiences and emerging scenarios. Implementation of the programmes will be a cooperative effort between the Centre and the States with full involvement of the community and the teachers and a constant process of consultations is envisaged.

6. The Task Forces had indicated in their reports broad financial implications. However, they need close scrutiny in consultation with all concerned, including the Planning

Commission and the Ministry of Finance. It will be noticed that the various Programmes of Action are spread over several years not only the 7th Five Year Plan period but also the 8th Five Year Plan, and beyond. The phasing of these Programmes has, however, to be left some what flexible, so that implementing agencies may be able to match the mobilisation of resources with the process of implementation.

7. The concept of National System of Education lays the greatest emphasis on elimination of disparities in the educational system and on improvement in the quality of publicly funded schools so that, ordinarily, parents may not feel the need to send their children to private high fee charging institutions. This is a direction towards which we shall have to move with speed and determination. Some steps have already been taken to launch 'Operation Blackboard' to demonstrably improve accommodation and facilities in under-provided primary schools in rural as well as urban areas. Establishment of District Boards of Education, District Institutes of Education and Training, and Village Education Committees will go a long way towards the school improvement programme, involvement of the community with the educational process, and creating a new form of accountability of the educational system. If implemented with sensitivity, vigour and persistence, the proposals contained in the Programme of Action regarding reorientation of the whole system to promote women's equality, special provisions for the Scheduled Castes, Scheduled Tribes, other educationally disadvantaged sections, minorities, the physically and mentally handicapped, and for the areas which need special attention will enable the educational system to move towards the democratic and socialist ideals enshrined in the Constitution. These are indeed some of the main parameters of the strategy envisaged in the Programme of Action for making strides towards the Common School System, to which the Education Commission (1964-66) gave so much importance, but which has so far remained only a distant goal.

8. There is today, as never before, an upsurge in favour of national integration and adherence of certain national values and concerns: through introduction of a national core curriculum; an insistence on observance of secular, scientific and moral values; inculcation of an understanding of our composite culture, within rich diversity; creation of an awareness of the importance of protection of environment and observance of small family norm; and stress on commitment of the youth to manual work and social service. Reorganisation of the content and process of education on these lines will, therefore, be a matter of foremost priority. A similar priority has been envisaged in the National System of Education towards effective universalisation of elementary education, eradication of illiteracy and skill development in the 15-35 age group, vocationalisation of education and preparation of the manpower needed for the develop-

mental needs, improvement in quality at all levels, and scientific and technological research. The various chapters of the Programme of Action take note of these priorities and spell out broad implementation strategies.

9. Implicit in the effort for creation of a National System of Education is the requirement that the system should work at an optimal level of efficiency. This does, indeed, presuppose that all institutions will observe certain daily schedules; that examinations will be conducted in a fair and regular manner; that students' hostels will have an atmosphere of community living and learning; that the campuses of all educational institutions will give evidence of good maintenance and promote a spirit of creativity, etc. Essential though these things are, they would not suffice to meet the challenges posed in NPE. What is needed is a much greater rigour and discipline in academic pursuits, arrangements which facilitate autonomy for experimentation and innovation, circumstances which bring out the best among the teachers and the students, and above all a rededication of all - the political leadership, administrative personnel, the parents, teachers and students - in the great task of nation building.

10. Implementation of N.P.E. has to begin now - wherever possible, in whichever way possible. Bigger schemes of quantitative expansion and quality improvement take time to get formulated and processed, and even longer to get understood and implemented. The process of preparation of those schemes has commenced, and will be followed up with necessary urgency. Meanwhile, every institution, every centre of non-formal education and of adult education, every teacher and student and every member of the society must examine what they can do. Some retired teachers can help out as substitute teachers, some housewives can impart literacy to their illiterate sisters, some institutions can extend their facilities to neighbouring institutions, some newspapers can start for their readers a weekly column on everyday science, and so on. While the Central and State Governments will fully shoulder their responsibilities and will give an account of it to State legislatures and Parliament, it is peoples' involvement in the educational reconstruction which will make the real difference. Time is of essence, and unless we act now, we stand in the danger of once again missing the opportunity of educational reform, so critical not only for the development of our nation, but for our very survival.

I. EARLY CHILDHOOD CARE & EDUCATION

THE PRESENT SITUATION

1. Some of the significant parameters of the quality of life of any nation are the infant mortality rate, incidence of malnutrition, the morbidity picture and the literacy rates. The infant mortality rate today stands at 104 (1984). The rural-urban IMR differential is striking, being 113 and 66. Respiratory disorders, diarrhoea and parasitic infestations and nutritional deficiencies are significant contributors of child morbidity. Eighty-three per cent of children have body weights below normal standards. These include 42 per cent mildly malnourished, 35 per cent moderately malnourished and six per cent severely malnourished. Cognitive stimulation at home during early childhood, which is so vital for the later years of life, is poor because of low female literacy rate which is 24.88. At present, by the most generous estimate, only around 12 per cent of the child population (0-6 years) of the country is being reached by one or more of the six services in the ICDS package, though within ICDS project areas, a large proportion of disadvantaged children are benefitted by the comprehensive package of six services. Taking into account the various other programmes and that ECCE age group is 0-6 while the other programmes cater to differently defined age group (mostly 3-6), it appears that less than 10 per cent of the child population (0-6 years) of the country receives all the essential services, from conception to the age of 6 years.

2. Realising the crucial importance of rapid physical and mental growth during early childhood, Government started a number of programmes of early childhood care and education (ECCE). Declaration of a National Policy for Children (1974) shows the commitment of Government for the development of children. The existing ECCE programmes include:

- (i) Integrated Child Development Services (ICDS);
- (ii) Scheme of assistance to voluntary organisations for conducting early childhood education centres (ECE);
- (iii) Balwadis and day-care centres run by voluntary agencies with Government's assistance;
- (iv) Pre-primary schools run by the State Governments, Municipal Corporations and other agencies;
- (v) Maternal and child health services through primary health centres and sub-centres and other agencies.

The Integrated Child Development Services is currently the biggest

programme of early childhood development. This programme over the years has demonstrated that even a modest investment in child development goes a long way in developing human resources. It needs to be fully integrated with the Universal immunisation programme started with effect from 19th November, 1985.

IMPLICATIONS OF THE STATEMENTS CONTAINED IN NPE

3. The National Policy on Education has given a great deal of importance to ECCE. It views ECCE as an important input in the strategy of human resource development, as a feeder and support programme for primary education and as a support service for working women of the disadvantaged sections of society. It has also taken into account the holistic nature of ECCE and has pointed out the need for organising programmes for the all-round development of the child. The significance of play and activity approach and the need for child-centredness in the programmes of ECCE as well as in primary school education have been spelt out, and it cautions against the dangers of using formal methods of teaching and early introduction of the 3 R's. The importance of community involvement has also been highlighted. The need to establish a linkage between ICDS and ECCE programmes has been pointed out. The desirability of a modular development so as to upgrade the former into the latter institution on a full-blown basis has been mentioned. In addition, there is also a commitment to taking up other diverse kinds of day-care centres. The Policy specifically focusses on the need for early care and stimulation of children belonging to the poverty groups.

THE STRATEGY OF IMPLEMENTATION

4. The ECCE involves the total development of child, i.e. physical, motor, cognitive, language, emotional, social and moral. The age span under consideration in ECCE is from conception to about 6 years. Even a modest development process during this period includes care of mother during pregnancy (ante-natal health check-up, nutritional support, control of anaemia, immunization for prevention of tetanus following delivery, etc.), hygienic and skilled birth attendance, nutritional care of mother during lactation, correct infant feeding practices, immunization of infant from communicable diseases, mothers' education in child care, early childhood stimulation, and health and nutritional support throughout. Thus, ECCE is a complex integral function. It requires workers with integrated ECCE training, integrated work-sites or ECCE centres where the essential services flow to young children through the period of their growth and preparation for formal education, and coordinated functioning of various agencies, governmental and non-governmental, striving to meet different needs of young children.

5. One of the weakest points in the existing programmes is inadequate child: worker ratio. Efforts will be made to strengthen the programmes and make them developmental instead of providing mere custodial care, the worker force would need to be

suitably augmented. The size and personnel of the centre would be so chosen that it would take care of the diverse items of the programmes fully within a given population.

6. Similarly, adequate remuneration to the workers is an important factor in successful implementation of any programme. Effort will be made with immediate effect to see that in the case of day-care centres, the remuneration of full time workers is not less than the wages earned by unskilled workers. However, the long term goal should be to bring the trained full-time child care workers on par with primary school teachers. Part-time child care workers should be paid not less than minimum wages proportionate to their hours of work. To ensure proper supervision, ratio of supervisors to the number of ECCE Centres should be improved. Considering the nature of work, which requires rapport with mothers and tenderness to children, ECCE workers and their supervisors should invariably be women.

7. Keeping in mind the role of ECCE as a support service in universalisation of elementary education, as well as for human resource development, ECCE will be, in the first instance, directed to the most underprivileged groups, those who are still outside the mainstream of formal education. Some of these can be defined as follows:

- (i) very poor urban slum communities;
- (ii) ecologically deprived areas where children are required to fetch fuel, fodder, water and do other household chores;
- (iii) family labour and household chores in rural areas and artisan households;
- (iv) working children in the unorganised sector;
- (v) itinerant, or seasonal labour, who have a mobile and transient life-style, like road workers;
- (vi) construction workers in urban and rural areas;
- (vii) landless agricultural labour;
- (viii) nomadic communities and pastoralists;
- (ix) forest dwellers and tribals in remote areas;
- (x) residents of remote isolated hamlets.

Girls in these groups may require support services like child care, sometime in very small units. Special attention should be given to scheduled castes and scheduled tribes in all the above defined categories.

TARGETS AND PHASING

8. Ethically speaking, every child should be assured access to the fulfilment of all basic needs. Yet, facing the existing realities of outreach and utilisation, it is suggested that 70% of the target groups (children 0-6 years) should be covered by all services by 2000 AD, whereas health and nutrition services should be extended to all the needy groups as early as possible. By the end of the Seventh Plan, a modest network of ECCE facilities should be established in all tribal development blocks, blocks having substantial scheduled caste population and slums in large cities. A minimum of 2.50 lakh centres should be established by 1990. Though various schemes need to be improved and expanded, this coverage will be predominantly achieved by expansion of ICDS. ECCE will be expanded to a level of 10 lakh centres by 1995 and 20 lakh by the year 2000. Most of the coverage will be through ICDS but diverse kinds of preprimary education centres and day-care centres, mainly for the population group mentioned at para 6, will also be encouraged and supported.

9. The emphasis in short term would be on upgradation, expansion and strengthening of the existing programmes. Efforts will also be made to extend these programmes to areas and target groups unserved by them so far. The programme of action in this behalf will consist of development of the following modular packages:

(a) INTEGRATED CHILD DEVELOPMENT SERVICES

Preschool education component needs to be strengthened in ICDS. For this following steps will be taken:

- (i) Each Anganwadi Workers' Training Centre should be given the responsibility of running at least 25 anganwadi centres so as to provide the trainees with adequate field practice areas.
- (ii) The trainees should be placed for a minimum of one month in the anganwadis for practical training.
- (iii) Instructional materials for use of trainers and the trainees should be developed.
- (iv) Materials for children - picture books, pictures, posters, minimum essential play materials - should be made available to all anganwadis and replenished periodically.
- (v) The trainers, supervisors and CDPOs should be oriented through Refresher Courses in preschool education component and given field training so that it is strengthened both at pre-service and in-service levels.
- (vi) The CDPO's office should be developed into a Resource Centre and be well-equipped with training materials.

A beginning will be made in ICDS by developing a small percentage of Anganwadis as day care centres and effort will be made to coordinate the timings of ICDS anganwadis with the primary schools.

(b) ECE CENTRES (DEPARTMENT OF EDUCATION)

The ECE scheme as it stands, does not have components of health and nutrition. Neither does it have any provision for the training of teachers. The following measures will, therefore, be taken with immediate effect:

- (i) Adding health and nutrition components;
- (ii) Provision for training the personnel;
- (iii) Supply of educational materials for children;
- (iv) Using play way method and discouraging teaching of 3 R's;
- (v) System of monitoring to be developed and linked with the renewal of grants.

(C) BALWADIS RUN BY VOLUNTARY AGENCIES

There are varieties of patterns in the Balwadis. Each scheme has its own history and background. All programmes of child development implemented through voluntary agencies will have an integrated approach, offering a comprehensive package and avoiding duplication. Where this does not happen, the existing activities will be merged in some comprehensive and integrated programme. Most of the programmes run by voluntary agencies do not have all the components of health, nutrition and education. They need to be converted into total child development centres.

(D) PRE-PRIMARY SCHOOLS OF THE STATE GOVERNMENTS AND MUNICIPALITIES

They essentially focus on education. Therefore they require:

- (i) Adding components of health and nutrition;
- (ii) Discouraging the early introduction of the three R's;
- (iii) Using play-way method;
- (iv) Developing a relationship between home and community.

(E) DAY CARE CENTRES

The creches and day-care centres being run with CSWK support and otherwise need to be reviewed and strengthened on an immediate

basis. The following requirements will be ensured:

- (i) Timing co-terminous with school working hours or mothers' working hours;
- (ii) Adequate, safe and hygienic space;
- (iii) Adequate child worker ratio;
- (iv) Drinking water;
- (v) Supplementary nutrition;
- (vi) Paramedical care under medical supervision;
- (vii) Minimum equipment including linen, cradles;
- (viii) Toys and play materials;
- (ix) Training and supervision of workers.

10. A further emphasis during Seventh and Eighth Plan will be on experimentation for evolving low cost and context-specific models. The models which are in experimentation stages at the moment would be encouraged and expanded. Appropriate agencies will undertake a survey of such models. Some of the models which are already being experimented and which have much promise are as follows:

- (a) Home-Based Model (from conception to 6 years): This model involves developing techniques of stimulation that can be taught to and done by parents or other members of the family to foster child development. It requires (i) training of local women who will play the leadership role in conducting home visits and encouraging family members to conduct stimulation programmes for their children, (ii) development of low cost play materials to be used by the family, (iii) development of audio and video programmes for the mass media for wide implementation, and (iv) creation of a mobile supervisory cadre.
- (b) Day Care Centres (From birth to 6 years) : This model is a support service to free older children and working women. Some voluntary organisations are successfully implementing these programmes. Such Day care centres should be established at all construction sites and other work centres where women are employed in substantial numbers. While support for voluntary agencies should be provided on a liberal scale by Government, the expenditure on the centres run on work sites should be the responsibility of the employers.
- (c) Family Day-Care Centre: This is best suited for areas where the target group is very small and a Day care centre

may or may not be viable. In this model, a suitable woman from the same group is identified as the home care worker, and given the necessary materials, training, supervision, and infrastructural support, including food, to take care of five or six children in her own home. It is envisaged that every cluster of about 10 home-care units would be supervised, guided and supported by a supervisory worker who is competent to give the necessary support.

TRAINING

11. In all models of ECCE programmes, the component of training will be strengthened. Training would include a strong component of field placement under supervision. As the early childhood care and education programmes are bound to expand considerably over the next two decades, corresponding training facilities will be made available for all levels of functionaries. Following would be some of the important parameters for meeting the training requirements:

- (i) Initiating a two-year vocational course in ECCE at +2 level with the objective to create basic skills which can later be adopted through job training for specific situations;
- (ii) Strengthening the educational content of ICDS' functionaries, training by providing appropriate training inputs, resources, materials etc. and extending it, where possible, to include a component of day care management;
- (iii) Taking steps for setting up a higher course in ECCE for senior level functionaries of ICDS, trainers in the various training institutions and the supervisory personnel;
- (iv) Creating a system of accreditation of training institutions dealing with ECCE and review of the existing training programmes; and
- (v) Working out appropriate, task specific, flexible models for day care training at field level in rural areas.

12. Media support is essential for conveying to the parents and community the messages of ECCE. It is also necessary for the training of personnel in ECCE. Side by side with the development of meaningful programmes for the adults, attention should be paid to the development of stimulating programmes for children. Concerted efforts will be made by all concerned organisations such as Doordarshan, AIR, NCERT, NIPCCD and other related organisations in developing the software in all major regional languages.

MONITORING AND EVALUATION

13. The system of monitoring and evaluation will be strengthened on the following lines;

- (1) A Management Information System will be evolved for monitoring all ECCE programmes. Information will be collected, compiled, analysed and acted upon at the block/local authority level. The flow of information to different levels (District, State, Centre) will be so planned that control functions at these levels can be performed effectively without delay.
- (ii) Assistance will be sought from professional institutions and expert bodies for independent, objective evaluation that can identify gaps and problems and feasible alternatives for remedial action. All types of programmes should be got evaluated by independent agencies once in five years and the reports of the evaluations followed up in order to improve the quality of services.
- (iii) In order to assess the contributions of ECCE from time to time an Index of Human Development will be worked out which would include, among others, the following elements:
 - (a) infant mortality rate;
 - (b) incidence of malnutrition in the second year of life;
 - (c) access to early stimulation and education; and
 - (d) female literacy level.

II. ELEMENTARY EDUCATION, NON-FORMAL EDUCATION AND OPERATION BLACKBOARD

THE PRESENT SITUATION

1. Provision of free and compulsory education to all the children until they complete the age of 14 years is a Directive Principle of the Constitution. Determined efforts have been made since independence towards the achievement of this goal. Between 1950-51 and 1984-85 the number of primary schools increased from approximately 2,10,000 to approximately 5,20,000 and the number of upper primary schools from 30,600 to 1,30,000. Even so, an acceptably large number of habitations are still without primary schools and nearly one-third of the schools in rural areas have only one teacher. The emphasis so far has been on enrolment of children - approximately 95% children in 6-11 age-group and 50% children in 11-14 age-group are enrolled in schools, the corresponding figure for girls being 77% and 36% respectively. However, nearly 60% children drop out between classes I-V and 75% between classes I-VIII. In urban areas there is overcrowding in schools and the condition of buildings, furniture facilities and equipment is unsatisfactory in almost all parts of the country. Rapid expansion, which was not accompanied by sufficient investment of resources, has caused a deterioration in academic standards. A programme of non-formal education has been started but in terms of spread and quality it is rather unsatisfactory.

THE POLICY AND TARGETS

2. NPE gives an unqualified priority to universalisation of elementary education (UEE). The thrust in elementary education emphasises (i) universal enrolment and universal retention of children upto 14 years of age, and (ii) a substantial improvement in the quality of education.

3. The child-centred approach commended in NPE attempts to build the academic programme and school activities around the child. The Policy also recognises that unattractive school environment, unsatisfactory condition of buildings and insufficiency of instructional material function as demotivating factors for children and their parents. The Policy, therefore, calls for a drive for a substantial improvement of primary schools and provision of support services. A variety of measures have been proposed for securing participation of girls and of children from the Scheduled Castes and Scheduled Tribes families, other educationally backward sections and minorities.

4. Conclusive data is not available regarding the number of working children. However, it has been assumed in the Policy that a large number of out-of-school children are unable to avail

themselves of the benefits of schooling because they have to work to supplement family income or otherwise assist the family. NPE proposes taking up of a large and systematic programme of non-formal education, for these children and for children of habitations without schools. The emphasis in NPE is on organisation of flexible programmes which are relevant to the needs of the learners and the quality of which is comparable with the corresponding stages of formal education.

5. The measures proposed to improvement in quality of elementary education include reform of the content and process of education, improvement in school buildings and other facilities, provision of additional teachers and the comprehensive programme of teacher education. Minimum levels of learning are to be laid down for each stage, which would naturally include laying down such norms for the primary and upper primary stages.

6. In addition to UEE, NPE also envisages a common school structure throughout the country. Acknowledging that the 10+2+3 structure has now been accepted in all parts of the country, a suggestion has been made that the primary stage should consist of 5 years, followed by 3 years of upper primary.

7. In the past, the targets set for UEE have not corresponded to the investment required for achievement of the goal, nor has it been possible to create the mobilisation which is essential for this purpose. Taking a more practical view of the matter, NPE limits itself to proposing that all children by the time they attain the age of about 11 years will have had five years of schooling, or its equivalent through the non-formal stream, and likewise it will be ensured that free and compulsory education upto 14 years of age is provided to all children by 1995.

IMPLEMENTATION STRATEGIES

8. The central feature of the implementation strategy will be area-specific and population-specific planning. About 75% of the out-of-school children are in nine States : Andhra Pradesh, Assam, Bihar, Jammu & Kashmir, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh, and West Bengal. While these States have been treated as educationally backward, enough attention has not been paid in the past to educationally backward pockets and groups in other States. Even within the educationally backward States there are wide disparities which require special treatment. Sustained efforts will be made to revitalise the educational system of the backward States and effort will also be made to see that all backward areas and population pockets make progress to keep in step with others in their milieu. The other elements of strategy will consist of the following:

(a) Children of all families in the country will be provided access to elementary education of good quality.

(b) Emphasis on the role of education in removal of disparities,

special measures will be taken to ensure that whatever the socio-economic background of the children, they get opportunity to achieve success of a level which approximates to the level of children from comparatively better-off sections of society, and the country moves apace in the direction of the Common School System as spelt out in the 1968 Policy.

- (c) A nation-wide programme of school improvement, with required multi-level and multi-dimensional planning, will be launched to alter the present situation of institutional stagnation and social apathy. Reference has been made elsewhere about reform of the teacher education system for improvement of the quality of education.
- (d) The country's faith and its future generations will be exemplified in the system of elementary education, which will get geared around the centrality of the child.
- (e) For their healthy development and to ensure that they enjoy conditions of freedom and dignity, the education system will strive to have all children in whole-time schools of good quality, and till that becomes possible they will be provided opportunities of part-time non-formal education.
- (f) Since NPE lays down that children who complete a stage of education would have achieved certain prescribed skills and competencies, the emphasis will now shift from sheer enrolment to retention and quality of education.
- (g) Keeping in view the fact that the situation regarding elementary education varies from one part of the country to another, and sometimes within one district, and even one block, the process of planning will be decentralised and the teachers as well as the local community fully involved in this process.

MOBILISATION FOR UEE - A PREREQUISITE OF SUCCESS

9. An analysis of the achievements and failures in UEE shows that we have tended to excessively rely on opening of schools, appointment of teachers and launching of enrolment drives. The above mentioned strategies will make a qualitative change in the implementation of the UEE programme in the coming years. These strategies will, however, succeed only if a genuine mobilisation, based on participatory involvement of teachers and the community, can be ensured. In specific terms, the pre-requisites for the proposed programme of UEE are as follows :

- (1) UEE can come about only as a result of an upsurge - involving all the people concerned. The political parties, particularly their local level constructive workers, will have to play an important role in this regard.

- (2) Involvement of teachers at all stages of planning and implementation of the new strategy will be ensured. This will take the form of systematic consultations with their unions and associations, ensuring that they are fully involved in micro-level planning for UEE.
- (3) As indicated in the section on Management of Education, the local community will be involved in all aspects of UEE. For all practical purposes, the primary schools and non-formal education centres will be accountable to it. Due care will be taken to ensure that women, youth, and the sections of society who have remained deprived of educational opportunities have an effective voice.
- (4) All agencies and individuals who have earned the confidence of the community and who can make a positive contribution to UEE will be involved. These would include youth clubs, Mahila Mandals, voluntary agencies and social activist groups, as well as local development workers, retired teachers, ex-servicemen, etc.
- (5) Making the system work is of the greatest importance. Hardly any change can take place unless the schools and NFE centres are properly run, teachers/instructors provide instruction, and other processes of education are followed.

UNIVERSAL PROVISION OF FACILITIES

10. The Fourth All India Educational Survey (1978-79) revealed that 1,90,000 habitations were without schooling facilities. Since then several new schools have been opened, but habitations have also come into existence. Considering the whole situation it would be correct to say that the number of habitations without schools is still very large and that many of them are likely to be fairly large habitations. All State Governments will ensure that all habitations with a population of 300 (200 in the case of tribal, hilly and desert areas) will be provided a primary school within the 7th Plan. Effort will also be made, on the lines of Mobile Creches, to set up special schools for specific duration for building and construction workers and other categories of people who shift their residence.

11. Detailed school mapping exercises will be initiated forthwith, and completed by the end of 1987-88, in order to prepare a Master Plan of Universal Provision of Facilities for EE. NIEPA has already initiated some exercise in this regard. The basis of school mapping would be to ensure that every habitation which can potentially have 50 children in the primary school should be provided one and an upper primary school opened on primary school catchment basis. For persons belonging to SC/ST and other deprived sections, residential schools and hostels will be provided on a much larger scale. The programme of Ashram Schools will also be improved and enlarged. Effort will be made towards creation of an inexpensive system of hostels, using the school building and

providing a kitchen room, where local villagers would be engaged on part-time basis to assist with cooking and supervision. Possibility of providing free foodgrains to the students in those hostels out of the accumulated stocks in the country will be explored.

ENROLMENT AND RETENTION

12. According to the Expert Committee on Population Projections, set up by the Planning Commission, the estimated population in 6-11 age-group in 1989-90 will be about 9.61 crores. The present population estimate for this age-group can be taken to be 9.00 crores. Against this the enrolment figures for 1984-85 are 8.54 crores, the gross enrolment ratio for boys and girls being 110 & 74%. However, nearly 22% of the enrolled are outside 6-11 age-group, mostly over-age. The first aspect of the new programme of universalisation is that for some years to come we should have no objection so long as children complete 5 years of education, or its equivalent through the non-formal stream, by the time they complete about 14 years of age.

13. Enrolment by itself is of little importance if children do not continue education beyond even one year, many of them not seeing the school for more than a few days. Emphasis will, therefore, now shift from enrolment to retention and completion by all children of at least 5 years of education. Enrolment drives will be replaced by systematic house-to-house survey in which the teachers, in cooperation with the village community, will discuss with the parents the relevance of schooling and regularity of attendance. Children for whom it is just not possible to participate in whole-day schools, will be enrolled in the non-formal education centres, but it will be ensured that every child in every family receives instruction. It is also important that all children regularly attend school or non-formal education centres. In the event of a child not coming for 2-3 days at a stretch the teacher and/or members of the Village Education Committee will approach the family of the child and persuade them to make the child resume regular attendance. This family-wise and child-wise design of action to ensure that every child regularly attends school or non-formal education centre, continues his/her education at a pace suitable to him/her, and complete at least five years of schooling, or its equivalent at the non-formal education centre, is what is intended by micro-planning at para 5.12 of NPE.

14. By making elementary education child-centred, we would be introducing a long-awaited reform in the system. The most important aspect of this reform will be to make education a joyful, inventive and satisfying learning activity, rather than a system of rote and cheerless, authoritarian instruction. Much of it would depend on reform of the curriculum and co-curricular activities, in respect of which mention has been made in another section. Considering that children in rural primary schools are subjected to all kinds of manual tasks, it needs to be clarified that while manual work by children is not to be shunned, it should

be an educational activity rather than an irksome draft. Practically all States have already banned corporal punishment. But it is still widely prevalent. Through programmes of teacher education and strict supervision this practice will be effectively prevented. Each District Board of Education will have the power to determine the days of vacation and they would be asked to relate them to agricultural seasons, ensuring at the same time that the number of instructional days does not fall below 220. The non-detention policy has also been accepted in principle for quite some time. In practice, however, for one reason or other, a large percentage of children still repeat their classes. Non-detention policy will be effectively implemented upto class VIII, while also ensuring that the minimum learning competencies are reached. For this purpose various measures referred to in the section on Examination Reform will be taken.

15. A comprehensive system of incentives and support services will be provided for girls and children of the economically weaker sections of society. A reference to these has been made in the sections on the Scheduled Castes, Scheduled Tribes, Minorities, Education for Women's Equality, etc.. The following items have special relevance to the new strategy of emphasis on retention :

- (a) Establishment of day-care centres for pre-school children and infants - as part of strengthening of ICDS, provision of adequate support to the ongoing programmes, and by establishment of a network of new centres;
- (b) Provision to the girls of all families below the poverty line two sets of free uniforms, free textbooks and stationery, as attendance incentives;
- (c) Free transportation in State Roadways buses to children attending elementary schools.

16. A comprehensive system of rewards and recognition will be created for individuals and institutions who contribute in a significant manner retention of children in primary schools/NFE centres. These rewards may be given to the villages, schools/NFE centres, and to the teachers/instructors concerned. The amount of reward will be enough to ensure that it serves as motivation.

ENROLMENT IN 11-14 AGE-GROUP

17. Keeping in view the high transition rate from primary to upper primary stage, enrolment in the 11-14 age-group will automatically increase after universalisation of primary education. This would be further strengthened as a result of universal provision of upper primary school facilities in the VIII Plan, and by creation of mechanisms for testing the children of non-formal stream for lateral entry into the formal system. These measures will be supplemented by a system of compulsory education legislation. The States which have not enacted such law would be advised to do so and the existing laws in this behalf will be reviewed and

modified on the following lines:

- (a) Requiring employers of working children to provide rest and nutrition as well as arrangements for part-time education of good quality, with provision for exemplary punitive action against employers who fail to do so;
- (b) Involving the local community and the parents in implementation of UEE and in ensuring that educational facilities are provided to their satisfaction;
- (c) Establishing schools and/or non-formal education centres of satisfactory quality within an easy reach of all children;
- (d) Creating necessary machinery for implementation of the Acts, emphasising the facilitating aspects rather than the punitive ones.

COMMON STRUCTURE

18. In the meetings of the CABE and NDC in May, 1986, a consensus has already been reached in regard to the need for switching over to a common structure for the first ten years of schooling.

19. The States where the first ten years are divided into four years of primary, three years of upper primary and three years of high school, will attempt to switch over to 5+3+2 pattern by 1995 so that it coincides with the target year for UEE. These States would need to build additional classrooms in primary schools and more teachers will also be needed. However, this would be partially set off by the savings of space and staff in high schools. It will be necessary for these States/UTs to do a detailed exercise to assess the requirement of classrooms, teachers, and funds. Similarly, syllabi, textual materials and school facilities would have to be readjusted and the examination system would have to be reorganised.

OPERATION BLACKBOARD (OB)

20. The purpose of OB is to ensure provision of minimum essential facilities in primary schools - material facilities as well as learning equipment. Use of the word 'Operation' implies that there is an urgency in this programme, that goals are clear and well-defined, and that Government and the people are determined to achieve those goals within a predetermined timeframe.

21. OB envisages (i) two reasonably large rooms that are useable in all weather; (ii) necessary toys and games material; (iii) blackboards; (iv) maps; (v) charts; and (vi) other learning materials. The specific items to be provided in each school under OB is given in the Annex. In regard to the buildings to be constructed the following points need to be mentioned :

- Construction of essential buildings for primary schools

will be the first charge on NREP and RLEGP funds. Those resources will be supplemented by other appropriate schemes.

- Village Education Committees will be required to give undertaking for maintenance and upkeep of buildings and other structures;
- Primary school-wise inventories of available structures will be prepared for systematic planning;
- Inexpensive building designs will be prepared keeping in view the agro-climatic conditions and utilising locally available materials.
- Steps will be taken for obtaining land for playgrounds.

22. It is proposed to take the CD block/municipal area as the unit and to prepare a project for it on the basis of survey of these facilities in each school in that block/municipal area. Although the Fifth Educational Survey is soon being taken up by the NCERT, its data will not become available for some months, and compilation and analysis will take still longer. To cover at least 10% blocks and urban schools in the same proportion under the programme in 1986-87 and 20% in 1987-88 it is proposed to conduct a quick survey in a specifically designed simple format in these blocks/municipal area by 30th September 1986 so that the data can be compiled and project reports prepared by 30.11.1986 and approval accorded by 31.12.1986. Empowered Committees will be set up at the district level to consider and approve the block/municipal area projects. The funds for Operation Blackboard would be provided by the Government of India to the State Governments on advance/reimbursement basis. The results of Fifth Educational Survey would form the basis for block/municipal area projects for the remaining 30% blocks/municipal area in 1988-89 and 40% blocks/municipal area in 1989-90.

23. Procedures for procurement, supply and use of equipment envisaged under OB will have to be evolved keeping in view the special needs of primary schools and also ensuring that the costs are kept low. For this purpose specific norms will be laid down. The first thing will be to specify the various items so as to ensure quality. This work will be done by NCERT, in association with State agencies. Particular attention will be paid to procurement procedures because the general system of purchase by tenders tends to lead to purchase of sub-standard materials. The capacity available in polytechnics, ITIS, secondary and higher secondary schools will be geared to produce the materials required by the school system, particularly under OB. Since unimaginative and rigid provisions of audit and supervision have deterred teachers in many places from using teaching aids at all, amendment of accounting procedures will also require to be worked out. Lastly, the teachers will have to be oriented and encouraged to use this material in day-to-day teaching. The mass training of teachers in

the summer of 1987 and 1988 will include this aspect. This will be reinforced by supervision by District Boards of Education and DIETs.

24. There is a very large number of single teacher schools in the rural areas. It is obvious that a programme of quality improvement must include provision of at least one more teacher in these schools. This will be attempted during the Seventh Plan and a detailed programme prepared for providing one teacher per class during the Eighth Plan. Every effort will be made to ensure that one of the two teachers in every school is a woman, and for this purpose, depending on circumstances obtaining in different areas, local educated women may be selected, provided special training and opportunities for improving their qualifications. Such a strategy may also become necessary for male teachers in remote rural areas.

THE NEW PROGRAMME OF NON-FORMAL EDUCATION

25. This programme assumes that NFE can result in provision of education comparable in quality with formal schooling. Modern technological tools - such as solar packs for provision of power in NFE centres, audio-visual aids, radio-cassette player - will be used to improve the learning environment of NFE centres, and learning material of high quality will be developed taking into account the fact that children who work have several assets on which their education should be built. The essential characteristics of NFE are organisational flexibility, relevance of curriculum, diversity in learning activities to relate them to the learners' needs, and decentralisation of management. Efforts will be made to evolve different models of non-formal education programmes and agencies implementing the programme will be encouraged to evolve and adopt the most suitable model depending upon the requirements of target groups.

26. Special features of NFE - In addition to these characteristics, NFE will have certain features which will help in maintenance of quality of the programme. These features include

- (a) a learner-centred approach with the instructor as a facilitator;
- (b) emphasis on learning rather than teaching, and for this purpose the capability of the children to learn from each other would be highlighted;
- (c) organisation of activities so as to enable learners to progress at their own pace;
- (d) use of efficient techniques to ensure fast pace of learning and provision of proper lighting arrangements at the NFE centres and necessary equipment;

- (e) stress on continuous learner evaluation and establishment of evaluation centres for evaluation and certification of learners;
- (f) in terms of scholastic achievements (particularly language and maths), following the norms set in the formal system, both because of its desirability per se and because it is essential for entry into the formal structures;
- (g) creation of participatory learning environment and treating the children with the regard they deserve as persons engaged in productive activities;
- (h) organisation of joyful extra-curricular activities including singing and dancing, plays and skits, games and sports, excursions, etc.;
- (i) ensuring that all facilities and incentives given to girls, children of SC/ST, and others in the formal system, are made available in the non-formal system as well, in addition to provision of free textbooks and stationery to all pupils.

27. Instructors and their training - The instructor is the most important factor in the implementation of NFE. The criteria for the selection of the instructor would include

- being local,
- being already motivated,
- acceptable to the community,
- preferably from the weaker sections of society. should have given some evidence of work in the community.

28. Keeping in view the importance of enrolment of girls, and also the fact that NFE has the potentiality of developing into a major programme of women's development, wherever possible women will be appointed as instructors.

29. Training of non-formal education personnel, particularly the instructors, is the key to the success of the Programme. Initial training as well as recurrent training are both crucial. By and large, training days for the instructors would be about 30 days in the first year and about 20 days in the subsequent years. The need for participatory training, based on the experiences of the participants, is now well-recognised. Actualisation of such training will call for considerable planning and investment. A variety of agencies will be involved and help taken of diverse training aids and educational technology, including TV and VCR.

30. Supervision administration - In the administrative restructuring, the most important place belongs to the supervisor,

on whom depends to a great extent the quality of the programme. The work of supervision may be entrusted to whole-time NFE supervisors with about 20-25 centres under her/his charge, or, preferably to trained local youth.

31. Approximately 100 NFE Centres will comprise a project which would be taken up in a compact and contiguous area coterminous, as far as possible, with a CD Block. The main functions at the project level would be (i) to select the supervisors, (ii) to generally supervise the programme, (iii) to promote interagency linkages to give development orientation to the field programme, (iv) to monitor the programme, (v) to ensure provision of materials and supplies, etc.. Strengthening is also envisaged at the district and State levels. Wherever possible the administrative and supervisory structure for NFE and adult education will be amalgamated - including the programmes to be taken up through panchayati raj bodies and voluntary agencies.

32. Involvement of voluntary agencies - and panchayati raj institutions - Several voluntary agencies have, in the past successfully organised NFE programmes. Very often voluntary agencies have bands of committed workers who have the capability to establish rapport with the local community and they can also function with flexibility and dynamism. Several panchayati raj institutions have also shown keen interest in NFE and they have the capability to run such programmes. It is proposed to take positive measures to involve in NFE as many voluntary agencies and panchayati raj institutions as possible, which can suitably take up this programme. It is also proposed to improve the existing administrative arrangements for support to VAs. Proposals will be examined by a grant-in-aid committee and where necessary a representative of the voluntary agency would be invited for discussion with the Committee. Projects of voluntary agencies will be entertained for a period of 3-4 years. They would be required to send the initial proposals through the State Government but at the subsequent stages the voluntary agencies will directly approach the Ministry for release of grants-in-aid. The State Governments would, of course, be expected to oversee the implementation of voluntary agencies' projects.

33. Continuing education - Scope for continuing their education is important for all learners. The strength of the PNFE will depend to a considerable extent on our being able to link the initial programmes of NFE with effective programmes of continuing education. This has several implications for PNFE. (a) Arrangements will be made for testing of children in NFE stream with reference to an equivalent stage in the formal system and specific instructions issued to facilitate lateral entry into the formal system for students of non-formal education stream. (b) Non-formal education centres would insist on children completing education at least upto V class level, and arrangements of non-formal education upto class VIII would be provided wherever necessary. Effort would also be made to link non-formal courses with the Open Schools. (c) Scholarships to the needy children,

particularly working children, will be provided to enable them to continue education in the formal system. (d) NFE programme would also be linked with the schemes of public libraries, Jana Shikshan Nilayams, etc. (e) Vocational and technical courses of a wide variety would be provided for children and youth who come out of the non-formal stream.

34. Financial pattern and flexibility regarding application - It is proposed that in the Seventh Plan, as in the Sixth Plan, there will be the following components of the non-formal education programme, to be applied in the 9 educationally backward States:

- (a) Assistance to State Governments for setting up and running non-formal centres (boys and girls both) on 50:50 basis;
- (b) Assistance to State Governments for setting up and running non-formal education centres exclusively for girls on 90:10 basis;
- (c) Assistance to voluntary agencies for setting up and running non-formal education centres on 100% basis;
- (d) Assistance to academic institutions for taking up innovative projects and research and evaluation activities in the field of non-formal education on 100% basis.

Even in the educationally advanced States there are several regions and client-groups which call for special support. These include:

- the hilly tracts,
- predominantly tribal areas known for educational backwardness,
- urban slums,
- projects for education of working children, etc.

It is proposed to extend these schemes to these areas also. Extension of these schemes to other regions and client-groups may also be considered.

EVALUATION AND MONITORING

35. The present system of evaluation and monitoring will not suffice for the new strategies of UEE. In the new evaluation and monitoring system the main features will be as follows:

- (a) A critical point of evaluation in the educational system is the progress of the learners. Hence, as mentioned elsewhere in this section as well as in the section on examination reform, the greatest attention will be paid to creating a scientific system of evaluation of learners, which would

serve both as the basis for improvement of the academic programme and as the measure of the overall quality of elementary education system.

- (b) Since the principal accountability of the primary/upper primary school system and NFE programmes is to the local community, the latter will also be mainly responsible for ~~monitoring these programmes~~ and for taking necessary corrective steps.
- (c) Just as the teachers/NFE Instructors are to be involved in the planning and implementing of UEE, they will also be involved in concurrent, participatory evaluation.
- (d) The emphasis in the monitoring system will shift from collection of information on enrolment to retention of children, regularity of attendance and levels of achievement. All instrumentalities of MIS will be changed accordingly.
- (e) The main responsibility for implementation of OB will rest with the District Board of Education, likewise the monitoring and evaluation responsibility would also rest with it. In doing so DBE will take the assistance of DIET.
- (f) The evaluation would be built into the NFE programme as an integral part and the instructors and supervisors will undertake these exercises on a continuing basis. The basic unit for collection of MIS data in NFE programme will be the project.
- (g) The State Advisory Boards of Education and CAGE will set up separate committees to review the progress of UEE. For this purpose they will be assisted by NIEPA, NCERT, SCERT and other suitable national and State level agencies of education and of social science research.

ESSENTIAL FACILITIES AT THE PRIMARY STAGE

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|--|--|
| I. Teachers' equipment | (iv) Ring |
| (i) Syllabus | (v) Swing rope with tyre |
| (ii) Textbooks | V. Primary Science Kit |
| (iii) Teachers' Guides | VI. Mini Tool Kit |
| II. Classroom teaching materials | VII. Two in one audio equipment |
| (i) Maps - District
State
Country | VIII. Books for library |
| (ii) Plastic Globes | (i) Reference Books-Dictionaries
Encyclopaedia |
| (iii) Educational Charts | (ii) Children's Books (at least 200) |
| III. Play materials and toys | (iii) Magazine, journals and news
papers for teachers and
children |
| (i) Wisdom blocks | IX. School Bell |
| (ii) Surface Tension | X. Musical Instruments |
| (iii) Bird and Animal Puzzle | Dholak or Tabla
Harmonium
Manjira |
| (iv) Animal World | XI. Contingency money with teacher |
| (v) Balance and weights | XII. All weather classrooms |
| (vi) Magnifying glasses | (i) Classrooms |
| (vii) Magnets | (ii) Toilets - one for boys and
one for girls |
| (viii) Measuring tape | (iii) Mats and furniture for
students and teachers |
| (ix) Cleanliness, Nutrition,
language & number charts | XIII. Black Board |
| IV. Games equipment | XIV. Chalk & duster |
| (i) Skipping Rope | XV. Water facility |
| (ii) Balls - Football
Volleyball
Rubber Balls | XVI. Trash Can |
| (iii) Air Pump | |

III. SECONDARY EDUCATION & NAVODAYA VIDYALAYAS

PRESENT SITUATION

There were 56323 secondary/higher secondary schools and 1,23,000 upper primary schools in 1983. This would give a ratio of 1:2.5. The enrolment at secondary level was 97,45,519 and at higher secondary level 51,01,435 in 1983. There are unserved areas in the country where there is no school for 10 to 20 kms like in some tribal areas, desert or hilly areas where the low density of population does not allow enough children to be enrolled. An area may also be unserved though near a school if a physical barrier like river or mountain separates it.

PRE-REQUISITES & BROAD PARAMETERS OF STRATEGY ENVISAGED

Secondary and higher secondary education is on the one hand terminal for those who enter the world of work after this stage. For such people a strengthened vocational scheme should form the main plank of strategy. For the rest it is preparatory to higher education and, therefore, a good grounding in the subject area should be provided along with learning orientation. The improvement in management system of which perhaps the school complex system and improved supervisory system are the most important should be the main programmes during the 7th Plan and would continue thereafter. A flexible and interactive teaching programme supported by adequate laboratories and libraries would be a pre-requisite for learning-oriented education. A programme of curricular reform and examination/evaluation reform would provide conditions for a good grounding in subject areas.

The policy relating to secondary education implies extension of the school system in the unserved areas consolidating the existing facilities and providing special arrangements for the gifted children and the high achievers. This would mean that it would require

- (a) Programme to ensure access to secondary education being widened to cover unserved areas:
- (b) Programme of consolidation in other areas/schools: &
- (c) Programme of setting up Navodaya Vidyalayas.

PROGRAMMES & IMPLEMENTATION

As a short term measure the State Governments would be persuaded to open secondary schools in unserved areas taking blocks as a unit having a lower ratio than 1:2.5 duly considering

the present distance of habitation from the nearest secondary school and population in the unserved habitations. As a medium and long term measure a programme of school mapping in each state for locating schools to cover all areas will be taken up. The technique of school mapping will be followed both for planning and implementation for location of secondary schools on the basis of clearly defined norms and standards. Special emphasis will be laid in this study on backward areas, areas predominantly inhabited by SC/ST and schooling facilities for girls. School clusters will be established with secondary school as its lead school and upper primary schools in the catchment area. The ratio of upper primary to primary schools will be attempted to be kept at 1:3 as recommended by the Kothari Commission. This programme would be taken up by NIEPA in cooperation with SCERTs. This exercise can be completed by 1988 and from 1989 onwards it could be implemented. By 2000 the unserved areas will be fully served. The funds required for this purpose which cannot be estimated now will be fully met by the State Governments only.

3. For the products of non-formal education at elementary stage many of whom will continue to find it difficult to attend full time school and for the working people who have missed the secondary school and others of this type, a flexible, non-formal arrangement is needed at secondary and higher secondary level.

This requirement is proposed to be met by open schools. Open schools would be established in a phased manner by 1990 with a resource centre in each district. These resource centres should be located in or linked to the selected secondary teacher training institutions or the district institutes of education.

4. It is known that the secondary and higher secondary schools are under-provided particularly in the rural areas in terms of buildings, teachers and school facilities but the extent of these shortages have not been surveyed in all aspects. The programme of consolidation envisaged in the policy will have the following components of which the cost cannot be precisely estimated:

- (a) Adequate playground facilities where needed will have to be provided by making available nearby vacant land and in other places by arranging for sharing of such facility with neighbouring school as a priority programme during the 7th Plan.
- (b) A programme for construction of additional class-rooms and laboratory facilities in schools to the extent they are deficient will be taken up. School education is mainly looked after by the State Governments and local bodies. If possible the Central Government may consider supplementation of resources.
- (c) Every school must have laboratories and other facilities as specified in the terms of recognition of the Board of Secondary/Higher secondary education to which it is

affiliated. These norms have been developed by the NCERT and KVS also. Taking into consideration the past experience that the equipment once given is not replaced and even maintained it is suggested that community participation by way of student contribution at the rate of Rs. 10 to 15 per month should be levied, except from girls and other exempt from payment of tuition fee. This collection should remain in the school for replacement and maintenance purposes.

- (d) The teacher competencies would be improved by attracting better qualified people to the profession as envisaged in the policy and by improving the pre-service and in-service training programmes through strengthened secondary teacher training institutions. The process will begin straightaway and will be continued for consistently upgrading teachers' competencies.
- (e) As envisaged in the Policy the core-curriculum will play an important role in educational consolidation. This will be followed by overall improvement in curriculum, the textual material, teaching practices and examination/evaluation methods.
- (f) The Kothari Commission suggested that the ratio of higher secondary and secondary schools should be 1:3. This should be ensured. A large number of higher secondary schools have only one or two streams out of humanities, science and commerce and most do not have vocational stream. As an important programme in the process of consolidation, schools should be helped to have all the three streams and a vocational stream in selected schools. This will be the responsibility of the State Government concerned. Vocational stream would be set up with the assistance of the Government of India as may be determined.

5. The programme for bright children has two parts - one is for potentially high achievers particularly in the areas who are substantially left uncovered by the present system and the other is the programme for the gifted students who can be expected to make original contribution in their subject areas if properly nurtured.

Under the scheme of Navodaya Vidyalayas for catering to the category of high achievers one such Vidyalaya will be set up in each district during the 7th Five Year Plan period. These schools will make available good quality education irrespective of the parents' capacity to pay and their socio-economic background. In these schools there will be 75% reservation for children from rural areas. There will be reservation for SC and ST as per their actual population in the district subject to a minimum of nationally prescribed figure of 15 and 7 1/2 for SC & ST respectively. An effort will be made to cover girls to the extent of 1/3 in a school. Education will be free including boarding and

lodging in these schools. These schools will be affiliated to the Central Board of Secondary Education.

The gifted students frequently have pronounced competence in a limited subject area accompanied by indifference in certain other areas. Therefore, arrangements for such students cannot be fitted into regular courses of study. Special arrangements for such students will have to provide teaching/learning on modular basis for every small group of students in a small number of subjects of interest to them. Such arrangements will be characterised by large facilities, higher teacher-student ratio and regular participation by professionals in teaching programmes. A detailed project for this purpose should be worked out by a specially constituted group within one year. Arrangements will be designed for implementation within the present system for such students.

IV. VOCATIONALISATION OF EDUCATION

PRESENT POSITION

INTRODUCTION

1. In 1976, the National Council of Educational Research and Training (NCERT) document "Higher Secondary Education and its Vocationalisation" was presented to the country setting out a model conceptual framework for implementation. The programme for vocationalisation of higher secondary education was initiated in 1976. Since then it has been implemented in 10 States and 5 Union Territories. A number of other States are likely to introduce vocationalisation in the academic year 1986-87. The current intake in the vocational stream is of the order of 72,000. Only about 2.5% of students population entering higher secondary stage is covered by vocationalisation so far.

2. Being aware of the importance and need for diversification of secondary education - its vocationalisation, the Ministry of Human Resource Development, Govt. of India and NCERT have initiated many actions and made many proposals. Evaluation studies of vocational programmes in most of the States were conducted to provide the findings to the States for improving implementation.

3. In spite of all these efforts, the scheme of vocationalisation of education has not yet picked up. There have been many factors responsible for the slow progress, such as, absence of a well coordinated management system, unemployability of vocational pass outs, mis-match between demand and supply, reluctance in accepting the concept by the society, absence of proper provisions for professional growth and career advancement for the vocational pass outs etc. Renewed efforts are being made in many States to accelerate progress. Urgent steps to strengthen the vocational education system are therefore imperative.

MANAGEMENT OF VOCATIONAL EDUCATION

4. While the factors contributing to the rather unsatisfactory progress on the vocationalisation front may be many, the single most important aspect is the inadequate organisational structure to the task and its consequent inability to implement the accepted policies.

5. At present the management systems for various sectors of vocational education work in isolation and with hardly any coordination either at the national, regional or state level.

6. At national level, the post-secondary vocational education (vocationalisation) and vocational education for the out-of-school population are being looked after by many organisations under different ministries (like Agriculture, Health, Rural Development, Human Resource Development etc.) without having proper coordination and linkages. Vocational programmes cover a wide range of disciplines. These include agriculture, business and commerce, engineering and technology, health and paramedical services, home science, humanities and others.

7. At state level the system is still fragmented and inadequate. A few states have a full time Directorate, the others have a middle level official looking after the vocationalisation programme in addition to his other responsibilities. No mechanism is available to coordinate the vocational programme at district levels and to undertake activities like, district level need surveys for identification of manpower requirements, for developing need based vocational courses etc. In addition, provision made for activities like curriculum design, resource material preparation, training of vocational teachers etc. are inadequate considering the massive nature of the task.

8. Keeping in view the variety of functions to be performed in planning and implementing programmes of vocational education and the scale of operations commensurate with the desired changes at post-primary, post-secondary and post-higher secondary stages, it is necessary to organise an effective management system.

VOCATIONAL EDUCATION PROGRAMMES

Work Experience in General Education

9. At the primary stage of education from class 1 to 5 Socially Useful Productive Work (SUPW)/Work Experience (WE) forms an integral part of the curriculum in many states. In spite of its good intentions of developing proper attitudes, the actual implementation both in coverage and quality leaves much to be desired.

10. At the middle school stage SUPW/WE programmes aim at developing confidence and sufficient psychomotor skills to students to enter the world of work directly or through certain occupational training courses.

SECONDARY STAGE (CLASSES 9-10)

11. The SUPW/WE programmes for the secondary stage are viewed as a linear extension of that for the middle stage. These activities at secondary stage are also expected to enable students to opt for vocational programmes at the +2 level with better appreciation and undertaking. It may also be mentioned that a significant number of students drop out after this stage. Hence the programmes of SUPW/WE are expected to ensure to modest preparation for students before they leave the school, to enable them to choose an occupation. Such pre-vocational courses are to be handled by teachers

with specific skills and competence. These programmes also need proper resources within the school.

HIGHER SECONDARY STAGE

12. The vocational courses at higher secondary stage are to be regarded not as a preparation for the college, but as a period for preparing an increasingly large number of school-leavers for different vocations in life. The need for vocationalisation of higher secondary education has been conceded by all, but the problems in its implementation may be appreciated by the fact that only a small percentage of students population has been covered by vocationalisation in the past nine years (1976-85). The estimated number of students seeking admission to +2 in 1985 is of the order of 25 lakhs. Even if 10% of this population was to be diverted for vocational courses, the number should have been over 2.50 lakhs, against the present intake of 0.72 lakhs. The problem can be further appreciated, if this data is seen against the Kothari Commission's recommendation, expecting a diversion of 50% of 10+ students for vocational education.

VOCATIONAL EDUCATION: OTHER FORMAL PROGRAMMES

13. The country has developed over the years, a network of vocational schools, vocational institutes and polytechnics. Nearly 2% to 3% of the school going children enter such institutes - like Industrial Training Institutes (ITIs), Junior Technical Schools etc. These institutions handle essentially full time students who meet the need of organised sector. The annual intake is of the order of 5 lakhs.

14. Kothari Commission has visualised that at 8+ about 20% of the students will step off the general stream and enter schools of vocational education. Similarly, a large percentage of 10+ students are to be diverted to such vocational institutions. However, the present vocational institutions are not able to cater to this large number of students after 8+ and 10+ stage. There is, therefore, a need for expansion of the regular vocational education programmes - in terms of opening more institutions and introduction of new vocational areas.

VOCATIONAL EDUCATION AT TERTIARY LEVEL

15. One of the factors responsible for the slow progress of vocationalisation of secondary education is lack of opportunities for the vocational pass -- outs for their professional growth and career advancement.

16. The current prejudice against vocational education will not disappear unless a reasonable chance of worthwhile employment or an advantage in moving upwards into a professional or general programme of education is provided to the students of vocational courses at the secondary level.

17. Such programmes could include Diploma, special degree courses, general degree courses, professional degree courses. At present opportunities for further education for students of vocational stream in +2 are almost non-existent. Hence suitable strategies are to be evolved for providing opportunities for the vocational products to enter appropriate 'Tertiary level' programmes.

APPRENTICESHIP TRAINING

18. The products of the vocational stream at +2 level are quite distinct from those from the ITIs and Polytechnics who have been covered under the Craftsmen and Technician Apprenticeship training schemes. It has been strongly recommended by several committees connected with vocational education that vocational students of the +2 stage should be brought under the umbrella of apprentice scheme as an important catalyst for the promotion of vocational education. At present a few of the 120 vocational courses offered at the +2 level in the country are selected for the special vocationalised education training scheme launched by MHRD. Appropriate actions are to be taken for introducing apprentice scheme to as many vocational courses as required.

OTHER VOCATIONAL PROGRAMMES

19. The vocational courses in Higher Secondary Schools and Vocational and Technical Training Schools/Institutes cater only to the requirements of organised sector of the economy. However, it is the unorganised sector which absorbs the bulk of workforce. Consequently one sees the phenomenon of mounting unemployment among the educated at one end and shortage of plumbers, car mechanics, electricians, carpenters and manpower in numerous other trades at the other end.

20. It is estimated that about 80% of the student population do not go beyond class 10. The drop outs upto and inclusive of class 8 are over 120 lakhs per year. Roughly 20 lakhs of boys and girls cross class 8 but do not go beyond class 10. All of them form a large pool of unskilled labour force. They need opportunities for training in some skills either in their traditional occupations or in new areas to enable them to take up skilled and gainful occupations.

21. In addition, there is a backlog of school drop outs who have crossed the school age and are working as semi-skilled and skilled workers. The total labour force in the country in the age group of 15 to 59 consists of all these groups and is of the order of about 23.70 crores (March 1980). Of this only about 10% is in the organised sector. The remaining are either employed without training, partially employed or unemployed.

22. There has not been planned educational programmes for this large population. Agencies like community polytechnics, TRYSEM, Krishi Vigyankendras, Nehru Yuvak Kendras, KVIC, Social Welfare

Centres, All India Handicraft Boards, Council for Advancement of Rural Technology etc. are not contributing to many non-formal programmes, to some extent. Concerted and well coordinated efforts are required to meet the demands of this task.

VOCATIONAL EDUCATION: SPECIAL GROUPS

23. The tribal and rural population do not have adequate access to school education, vocational courses in schools or vocational/technical training schools/institutions. There is also a paucity of vocational courses/institutions to cater to the women population whose earning power could be considerably augmented through vocational training. Handicapped and disabled persons form another significant section of the society who have at present practically no avenues to acquire suitable productive skills to make their living more meaningful and self-reliant.

PROGRAMMES

24. The policy statements concerning the system for vocationalisation have been clustered with reference to inter-related objectives, priorities and programmes into four key areas so as to ensure logical development of programmes of action. These areas include "development of the system", "vocational education programmes", "programmes for special groups" and "out of school population" and "targets and preparations for development".

PRE-REQUISITES, PRIORITIES AND GUIDING PRINCIPLES

25. It is important to view the programme of vocationalisation at the higher secondary stage, as an important component of the overall school education both as a self-contained stage as well as feeder to the general and professional education at the tertiary stage. The Management system proposed in subsequent paragraphs for the vocational effort therefore, should be seen as supportive/complementary to the current system for the management of school education. In implementing the plan of Action for vocationalisation the following guiding principles will apply:

- (i) The policy clearly stipulates that a minimum of 10% of students at the +2 stage should be diverted to the vocational stream by the end of the 7th Plan. This would be achieved largely by making use of the existing set up for administration, provision of research and developmental support, and certification of the vocational programmes. The existing system for this purpose will have to be suitably strengthened in order that it is functionally adequate to cope with the dimensions of the task during the 7th plan and could provide the nucleus for a more elaborate set-up needed for meeting greater challenges during the subsequent Plans.
- (ii) A beginning, however, would have to be made during the 7th Plan towards establishing the desired new structure because

it will take some time for the structures to come into being and to develop professional competence and expertise for the task ahead. While the report of the National Working Group under the Chairmanship of Dr. Kulandaiswamy provides a suitable model, the principle of flexibility to suit the requirements of the respective States will be followed. It would allow the organisational structures to be modulated by the States according to the planned coverage, implementation stage of the programme, and specific local contexts. It would be desirable to involve institutions of higher education in the vicinity of the target schools in the promotion and implementation of the vocational programme.

- (iii) While the target in relation to the +2 stage will be fulfilled and efforts will be made to exceed the target, modest beginning will be made during this Plan in the area of non-formal vocational education for drop-outs and other target groups. This will help to gain sufficient experience and expertise before undertaking expansion of the programme on larger scale in the 8th and subsequent Plans. Greater accent on the +2 programme in the current Plan will also create a pool of human resources needed for future expansion of vocational education both in the formal and non-formal sectors.
- (iv) In relation to the targets laid down in the Policy for the 7th Plan it is necessary to recognise that there is a minimum level of funding below which a meaningful programme of vocationalisation cannot be implemented. A level of funding below this critical level will not make much impact and could indeed be counterproductive by discrediting the concept of vocationalisation.
- (v) It is important to generate acceptability and respectability for vocationalisation of education. For this purpose (1) Efforts will have to be made by employment sectors of the economy to create a demand for vocationally trained manpower. Agencies and sectors will be expected to identify jobs which require vocational skills and in recruitment to these jobs preference will have to be given to the graduates of the vocational programmes. It may be recognised that access to such jobs by those holding higher but vocationally irrelevant qualifications has been a strong deterrent to the vocational education effort in the past. (2) Linkages through bridge courses, modification of existing educational programmes, and other measures, should create a situation for greater professional advancement of the vocational graduates. Opportunities for higher education, continuing education and training will have to be created.
- (vi) The role of the +2 stage in schools vis-a-vis those of the polytechnics, ITIs and other certificate level institutions

in providing vocational opportunities have to be outlined. While ITIs and polytechnics would cater generally to the organised industrial sector, the thrust in the school programme would be on the sectors not covered by them and on the potentially very much larger service sector. The school system would give greater attention to the areas of Agriculture, Agro-industries, Business and Commerce, Home Science, and Health and Para-medical vocations. However, this demarcation is not meant to exclude institutions from taking up vocational programmes in other areas if a need is identified and other institutional mechanisms are not available.

- (vii) On an average 10 additional schools will be taken up in each district by the end of 7th Plan for vocational effort at the +2 stage with a minimum intake of 40 students.

The Plan of action in regard to the four areas mentioned earlier is given below.

(A) DEVELOPMENT OF THE SYSTEM

Developing Organisational Structure:

26. A Joint Council for Vocational Education (JCVE) will be set up by the MHRD, to be the apex body for policy planning and coordination of vocational education at national level. In addition a Bureau for Vocational Education will be established in the Ministry of Human Resource Development (MHRD).

27. A Central Institute of Vocational Education (CIVE) under the NCERT will be set up to perform research and development, monitoring and evaluation functions.

28. State Governments will set up appropriate bodies/organisations like State Councils of Vocational Education (SCVE), State Institutes of Vocational Education (SIVE), Departments of Vocational Education, and district-level coordination committees as per their needs and requirements.

29. Organisations like NCERT, CIVE, Regional Colleges of Education (RCEs), SCERTs, SIVEs, Technical Teachers' Training Institutes (TTIs) etc., will be strengthened by providing additional infrastructure and faculty positions to perform their functions effectively for the development of vocationalisation.

30. State Councils of Vocational Education will organise district-wise needs assessment of vocational manpower, through area vocational surveys. NCERT will work out a scheme for need assessment, in collaboration with organisations like SCERTs, SIVEs, RCEs, TTIs, Industry and other technical institutions.

DEVELOPING RESOURCES/FACILITIES

31. Curriculum Development Cells/Centres will be set up in SIVEs/SCERTs and other selected professional institutions in specialised fields to design vocational programmes to meet identified needs and develop curricula. NCERT will develop model curricula and guidelines.

32. Training of personnel for Instructional Resource Development will be organised by NCERT, SCERTs, TTTIs, RCEs, CDCs etc. The activity will be coordinated by CIVE at national level and SIVEs at state level.

33. District Vocational Training Centres will be set up by MHRD with adequate facilities to impart skill training to vocational students in diverse vocations. Such institutions will have highly trained and skilled instructors. The facilities and faculty resources at these centres will be shared by vocational students from a number of schools in the area according to a coordinated plan.

DEVELOPING LINKAGES:

34. National Council of Educational Research and Training/Central Institute of Vocational Education will prepare a guideline document, listing the various organisations/agencies at National/Regional/State/District levels and indicating broadly the nature of their functions and responsibilities, to develop the right kind of linkage at state and at district levels.

35. NCERT/CIVE, in collaboration with State Institutes of Vocational Education/State Councils of Educational Research and Training will evolve an information system for vocational education to ensure constant communication between the central and state governments, nodal agencies, directorates, district level authorities and the institutions alongwith participating employer organisations.

36. MHRD will take steps to prepare a guideline document indicating the nature and functions of linkages between policy making bodies including Joint Council of Vocational Education, NCERT/CIVE, RCEs, TTTIs, SCERTs/SIVEs, District Coordination Committees, Research and Development Organisations in education and training, District Vocational training centres, etc., the Ministry of Human Resource Development, the Board of Apprenticeship Training, Examination and various Certification bodies including Boards of Examination.

37. State Departments of Vocational Education will give directives and guidelines to vocational institutions to develop linkages between schools, employers and voluntary organisations in the community, to facilitate successful implementation of vocational programmes ensuring optimum resource utilisation as well as effectiveness. State departments of vocational education will prepare the scheme for the same.

(B) VOCATIONAL EDUCATION - PROGRAMMES

38. Vocational programmes for 8+ students will be introduced on experimental basis on a limited scale in different States by State departments of vocational education. SCERTs/SIVEs shall develop models in the light of the guidelines laid down by JCVE and NCERT. The models already in operation shall be studied by CIVE/NCERT for deciding about the need/justification for further expansion. In engineering trade, however, the Industrial Training Institutes (ITIs) wherever considered necessary shall continue to offer vocational programmes for 8+ students.

39. Programmes at 10+ level will be formulated by SCERTs/SIVEs in the light of guidelines laid down by NCERT. The SCVEs shall facilitate the introduction of these programmes on the basis of result of area vocational surveys in selected schools in a phased manner keeping in view the national targets.

40. To provide more opportunities to students for 10+ vocational courses in engineering and technology, 100 more vocational institutions shall be established.

41. JCVE will provide in a phased manner 70% of the higher secondary vocational stream graduates stipend to undergo paid apprenticeship in appropriate industries. The implementation will be carried out by Regional Boards of Apprenticeship Training in collaboration with state departments of vocational education, and other concerned agencies.

42. Tertiary level programmes like Diploma in Vocational subjects, Advanced Diploma Programmes, and Degree Programmes will be introduced in selected polytechnics, affiliated colleges and universities, as well as in special Institutes set up for this purpose. JCVE and SCVEs shall develop schemes for creating such tertiary level vocational education facilities at non-university institutions. For the university level courses, the universities will develop model curricula in collaboration with NCERT/CIVE for starting programmes in vocational education at university departments and affiliated colleges.

43. Entrepreneurial/self-employment skills will be developed in vocational stream students, through curriculum, special training programmes as well as paid apprenticeship facilities.

44. State Departments of vocational education and SCVEs will formulate necessary schemes for the purpose.

45. State Directorates of vocational education will set up career guidance cells at district level. NCERT/CIVE shall formulate suitable norms for the purpose.

46. NCERT/CIVE, SCERTs/SIVEs, RCEs, CDC, TTTIs and other institutes will develop bridge/transfer courses in accordance with the guidelines laid down by JCVE. Suitable schemes for course offering shall be developed by SCVEs.

(C) PROGRAMMES FOR SPECIAL GROUPS AND OUT OF SCHOOL POPULATION

Involving Industry/Community:

47. JCVE will evolve schemes to involve the public/private sector industry in vocational education through appropriate incentives/rewards. Also, JCVE would arrange to bring about appropriate legislation to ensure their contribution.

48. JCVE/SCVEs/State departments of vocational education will identify and support voluntary organisations engaged in the vocational education of special groups like women, tribals, handicapped and disabled etc. Suitable scheme for this will be formulated by JCVE.

NON-FORMAL PROGRAMMES:

49. All polytechnic institutions, ITIs, other vocational and technical training institutions, selected higher secondary schools, colleges and special institutes will engage themselves in imparting vocational education through non-formal programmes, to the rural and unorganised sector in a phased manner. Suitable schemes for the purpose, like the Community Polytechnic Scheme, will be formulated by JCVE for respective categories of institutions.

50. Selected engineering colleges, Polytechnics, Industrial Training Institutes and other Vocational and Technical Training Schools/Institutes will engage themselves in conducting part time vocational courses for the benefit of special groups and those already employed. State departments of Vocational Education will formulate necessary schemes for the purpose and promote their implementation. A suitable scheme for undertaking such activities in selected institutions will also be formulated by JCVE.

SETTING UP SPECIAL INSTITUTES:

51. Special Vocational training institutes for women, tribals and other weaker sections of the society to meet identified needs, will be established by the State departments of vocational education.

52. Centres for vocational training of the handicapped will be set up in institutions like special institutes of relevant/useful Technology, District Vocational Training Centres, ITIs and Polytechnics to equip this section of the society with appropriate employable skills. State Departments of Vocational Education will formulate necessary schemes for the purpose and promote their implementation through them and/or other concerned departments. JCVE will formulate a central scheme for establishing such units.

(D) TARGETS AND PREPARATION FOR DEVELOPMENT

TARGETS:

53. For 10% diversion by 1990, provision will have to be made for 2.5 lakhs. In view of the action already taken, additional requirements for 2.5 lakh students can be met by marginal expansion of the infrastructure and resources but for 25% diversion by 1995 advance action will have to be taken by the States and Central Governments in terms of building a requisite level of infrastructure and facilities.

TEACHER TRAINING

54. A phased and coordinated programme for the training of teachers, principals and key officials in the vocational education system using the available infrastructures in organisations like NCERT, RCE, SIVEs, TTTIs, CDCs, State Institutes of Education, will be undertaken. Scheme will be drawn up by concerned institutions in accordance with guidelines given by JCVE. Crash programmes will also be organised by concerned institutions to meet the immediate requirements for which a scheme shall be formulated by JCVE.

55. NCERT/CIVE and SCERT/SIVEs will evolve and implement phased programme for the development of text-books and other instructional materials on a large scale to meet the diverse needs of a variety of vocational programmes and to avoid duplication of efforts to the extent possible. JCVE/SCVE will formulate suitable guidelines for the same.

56. State department of vocational education will evolve schemes to utilise community resources, both in terms of part-time teachers and by way of training facilities in industries, KVIC, KRKs, farms, etc. to enhance the quality of instruction.

FACILITATING EMPLOYMENT:

57. Steps will be taken to change recruitment rules for selection to Government departments at Central and State levels and Public Sector in order to give due weightage to vocational stream graduates in posts appropriate to their vocations.

58. A Monitoring and Evaluation Cell in the Bureau of Vocational Education will be set up with appropriate linkages to CIVE/NCERT, SIVE/SCERT and other agencies involved to facilitate implementation.

59. NCERT/CIVE and SCERT/SIVE will formulate schemes for periodic review of vocational programmes in accordance with the general guidelines laid down by JCVE.

V. HIGHER EDUCATION

THE PRESENT SITUATION

1. We have a large system of higher education. But the developments in this field have been extremely uneven. The facilities provided in Universities and Colleges vary widely. Research in the Universities is cost effective, but large inputs have gone to laboratories outside the Universities. The courses offered by the universities have not been reorganised to meet the demands of the times. Their relevance and utility are constantly questioned. The credibility of the evaluation system is being eroded.

2. The University system should be enabled to move centre-stage. It should have the freedom and responsibility to innovate in teaching and research. The emphasis on autonomy of colleges and departments, provision of means to interact across boundaries of institutions and funding agencies, better infrastructure, more rationalised funding for research, integration of teaching, search and evaluation, all these reflect this major concern.

THE POLICY, PROGRAMMES AND STRATEGIES FOR IMPLEMENTATION

3. The National Policy on Education visualises that higher education should become dynamic as never before. The main features of the programmes and strategies to impart the necessary dynamism to the higher education system will consist of the following:

- (i) Consolidation and Expansion of Institutions
- (ii) Development of Autonomous Colleges and Departments.
- (iii) Redesigning Courses
- iv) Training of Teachers
- (v) Strengthening Research
- (vi) Improvements in Efficiency
- (vii) Creation of structures for co-ordination at the State and National levels.
- viii) Mobility

CONSOLIDATION AND EXPANSION (para 5.26)

4. Many of the 150 Universities and 5,000 Colleges have not been provided with a minimum level of infrastructure for the

maintenance of quality and standards. Provision of these facilities is essential to protect the system from deterioration.

5. It will not be possible to eliminate all the accumulated deficiencies immediately. A beginning is proposed to be made to improve the facilities in these institutions in the Seventh Plan which will continue in the Eighth and subsequent Plans. To achieve these objectives, it is proposed:

- (a) to provide appropriate funding to Universities and Colleges according to the norms to be evolved by the University Grants Commission for each specified course and intake;
- (b) to prepare a plan to equip the existing institutions in phased manner on the basis of the norms prescribed;
- (c) to establish institutions within the university system which will have close ties with National Laboratories and other agencies; a Task Force will be appointed by the UGC to evolve guidelines for setting up such institutions and their management structure;
- (d) to formulate a scheme by the UGC to provide financial assistance and other incentives, including model statutes for promotion and development of autonomous departments within the universities;
- (e) to review the Management patterns including the structure, roles and responsibilities of various universities/bodies in the light of the new demands on the University system. The UGC will take steps to promote the evolution of new, efficient and more effective management systems and organise wide discussions on them so that they may become the basis of new legislations.
- (f) to take effective steps to ensure that no new institutions are established without careful planning and the provision of the necessary physical facilities;
- (g) to formulate guidelines for granting affiliation to new colleges which should provide, among others, the minimum facilities required in each institution including new teaching aids such as audio-visual systems, VCRs, computers, etc ; and
- (h) to regulate admission on the basis of physical facilities and to develop entrance examinations for admission to institutions of higher education.

6. The State Councils of Higher Education will prepare co-ordinated programmes of development of higher education in each State for consolidation of the existing institutions and their infrastructure, programme of strengthening non - viable colleges including alternate forms of their utilisation.

and diversification of courses), special programmes for strengthening colleges located in rural areas, etc. Such State level plans will be consolidated by the UGC and progress of their implementation monitored by it.

DEVELOPMENT OF AUTONOMOUS COLLEGES (para 5.28)

7. The system of affiliated colleges does not provide autonomy to deserving colleges to frame curricula, courses of studies, or their own system of evaluation. Although the UGC has been supporting this programme, only 21 colleges have been conferred autonomous status so far.

8. It is envisaged that about 500 colleges should be developed as autonomous colleges in the Seventh Plan, and the existing affiliating system might be replaced in the long run. Due care will be taken to evolve a suitable framework for autonomous Colleges.

9. In order to achieve this objective, it is proposed:

- (a) to make provision in the University Acts where necessary, to enable colleges to become autonomous;
- (b) to frame guidelines and pattern of assistance including the extent of academic, administrative and financial freedom and the corresponding responsibilities devolving on the autonomous colleges, their management structures, including provisions for safeguarding the interests of teachers, etc;
- (c) to formulate a scheme of incentives such as special assistance to selected colleges, creation of posts of Readers and Professors, provision of a higher level of grant for development, etc. to colleges which become autonomous;
- (d) to provide special assistance to colleges in tribal/backward areas to enable them to develop into autonomous colleges;
- (e) to make statutory provision, if necessary, to enable autonomous colleges to award their own degrees or to confer deemed university status on them to develop other appropriate mechanisms to accelerate the process of curricular reforms, design of courses, reforms in teaching and evaluation procedures, etc.
- (f) to develop appropriate instruments for review/appraisal of the scheme of autonomous colleges at regular intervals, and to develop interaction among colleges to promote the scheme of autonomous colleges;
- (g) to initiate detailed studies to develop alternate methods of university-college relationships that could replace the affiliating system in the long run.

10. The programme of autonomous colleges will be fully funded by the Central Government for a period of five years. Funds for this purpose will be made available to the UGC. However, the maintenance expenditure of these colleges will continue to be met by the resources which provide such expenditure, at present.

DESIGN OF COURSES (para 5.29)

11. Higher Education Programmes have to be redesigned to meet the growing demands of specialisation, to provide flexibility in the combination of courses, to facilitate mobility among courses, programmes and institutions, to update and modernise curricula, to integrate work/practical experience and participation in creative activities with the learning processes, and to facilitate reforms in the evaluation procedure. The present rigid structures do not permit these reforms.

12. In order to achieve this objective, it is proposed:

- (a) to secure full involvement of the Universities and faculties in redesigning and reorienting the courses in higher education;
- (b) to review comprehensively the existing guidelines on restructuring courses framed by the UGC to incorporate the new concepts in the design, content and structure envisaged in the policy;
- (c) The foundation course proposed in the UGC scheme of restructuring courses will be an important element of the general undergraduate programmes. A special emphasis should be laid on the study of India's Composite Culture so as to foster unity and integrity of the country among students. Women's studies will be one of the components of the Foundation Course. The curricula of different disciplines will also reflect issues concerning Women's status and development;
- (d) to reorganise the Boards of Studies in the Universities to facilitate redesigning of courses and to promote interdisciplinary programmes and inter-faces with employment;
- (e) to make provision for academic recognition /credit for participation in creative activities like NSS, NCC, Sports, Games, etc;
- (f) to organise regional/national seminars to generate enthusiasm in and commitment to the new design of courses, flexibility in the combinations, modular structure, accumulation of credits etc. ; and
- (g) to link development grants to universities with the willingness and interest in reorganisation of courses and commitment to innovation as a continuing effort.

13. During the Seventh Plan, the UGC has set up 24 Curriculum Development Centres. This number will be increased and their work will be oriented to the design visualised in the Policy. The International Centre of Science & Technology Education may be utilised to coordinate and develop curricula in the field of Science & Technology. To begin with, in the next three years, model course material in 15 subjects will be developed in the form of audio/video cassettes with the help of best available teachers. The material could also be used for self-instruction and put out as radio/TV broadcasts. Eventually, such material is proposed to be made available as multimedia packages.

14. Autonomous colleges and autonomous Departments will be major instruments in promoting the redesign of courses. The college Development Councils to be set up will encourage local initiative in the design of courses especially the application-oriented component and strengthening of linkages. The State Councils of Higher Education will ensure the implementation of these programmes and monitor the progress of their implementation.

TEACHERS' TRAINING (para 5.31)

15. The present system does not accord teachers a proper economic and social status, opportunities for professional and Career development, initiative for innovation and creative work, proper orientation in concept, techniques and value system to fulfil their role and responsibilities. Motivation of teachers is important for implementation of the policy.

16. In order to achieve this, it is proposed:

- (a) to organise specially designed orientation programmes in teaching methodologies, pedagogy, educational psychology, etc., for all new entrants at the level of lecturers.
- (b) to organise refresher courses for serving teachers to cover every teacher at least once in 5 years.
- (c) to organise orientation programmes by using the internal resources of universities and by bringing a number of colleges together.
- (d) to encourage teachers to participate in seminars, symposia, etc.

17. The Indira Gandhi National Open University will run special programmes to promote self-learning among teachers. The recommendations of the Committee on revision of pay scales of teachers in universities and colleges will be examined for implementation. Teachers will be recruited on the basis of a common qualifying test the details of which will be formulated by the UGC. Methodologies will be developed for evaluation of teacher performance through self-appraisal, through peer groups, and also by students. Career advancement of teachers will be linked with professional

development and performance appraisal. The Management structures of universities will be remodelled to provide opportunities for greater participation of teachers at all levels in academic administration.

RESEARCH IN UNIVERSITIES (paras 5.32 and 5.33)

18. A large number of research institutions have been set up outside the university system. The process of higher education has to develop in close contact with first class research in frontier areas of science, technology, humanities and social sciences. If higher education has to become relevant and solve the most difficult problems, universities must come centre-stage. They should grapple with significant scientific problems of industry and national agencies.

19. In order to achieve these objectives, it is proposed:

- (a) to strengthen the infrastructure and enhance the funding of research in universities;
- (b) to set up cooperative research facilities in the university sector;
- (c) to locate most of the research institutes to be set up in the future in the universities with appropriate autonomous management structure;
- (d) to encourage industries to set up most of their research activities in the university sector;
- (e) to foster formal links with various research agencies to link education with research and to identify tasks that could be undertaken within the university system;
- (f) to modify curricula and methodologies of learning through appropriate research and development to incorporate elements of problem solving, creativity and relevance; and
- (g) to institute talent search examinations and Scholarship schemes at undergraduate and post-graduate levels; to conduct all-India tests for admission to research programmes and to introduce periodic review of fellowships.

20. Several agencies are funding research projects at present. While the multiplicity of funding may continue for sponsored research or goal-oriented projects, a National Research Foundation is proposed to be set up to bring about better coordination, overview and quality control. This Foundation will fund all research programmes presently supported by Central Government except those directly related to the missions of the existing agencies. The National Research Foundation will be an independent body set up by pooling together, and subsequently augmenting, the resources now being utilised by various agencies. A Working Group will be set up to formulate details of its structure and function.

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IMPROVEMENT IN EFFICIENCY

21. In order to improve the overall efficiency in the functioning of the universities it is proposed :

- (a) to equip every university with a computer for maintenance of students records, accounts and other data required for administration and management.
- (b) to establish networking arrangements of selected institutions from all parts of the country by linking them together through a computer data network with terminals for each to enable sharing of information, data banks, library and computation resources, consultancy and consultation and generally promotion of inter-action between researchers and academics.
- (c) to ensure access to information and source material essential for research, a network of regional libraries as a common servicing facility will be established. These libraries will be equipped with modern facilities for information storage, retrieval reprography, etc.

CREATION OF MACHINARIES FOR CO-ORDINATED DEVELOPMENT

(A) STATE COUNCILS OF HIGHER EDUCATION (para 5.30)

22. There is at present no effective machinery for planning and coordination of Higher Education at the State level and co-ordination of State level programmes with those of the UGC. In order to fill this gap, it is proposed :

- (a) to set up State Councils of Higher Education as Statutory Bodies.
- (b) to have for the guidance of State Governments, model provisions framed by the UGC setting out the composition and powers of the State Councils.
- (c) The major functions of the Council will include:
 - (1) preparation of consolidated programmes of higher education in each State.
 - (2) initial scrutiny of the development programmes of universities and colleges.
 - (3) assistance and advice to UGC in respect of maintenance of standards.
 - (4) assistance to State Governments in determining the block maintenance grants.

- (5) encouragement of the programmes of autonomous colleges.
- (6) monitoring the progress of implementation of programmes and assessment of performance of institutions.
- (7) advising the State Governments in setting up new institutions.

(B) NATIONAL APEX BODY (Para 5.34)

23. The Policy envisages the establishment of a national body covering higher education in general, agriculture, medical, technical, legal and other professional fields for greater coordination and consistency of policy, sharing of facilities, and developing inter-disciplinary research.

24. Presently, the responsibility for development of higher education is shared by a number of agencies. There are separate structures for higher education in agriculture, engineering and medicine. This separation in the decision-making and funding mechanisms has become more of a problem because various disciplines are emerging, and the courses of study have to be developed keeping in view the need for developing compatible inter-interfaces with other related disciplines.

25. In order to remedy this problem it is proposed to establish an apex body at the national level for higher education to deal with policy aspects of higher education and to undertake integrated planning and to reinforce programmes of post-graduate education and inter-disciplinary research.

26. For areas such as agriculture, medicine, engineering, distance learning etc. separate bodies will be set up. These bodies structured on the lines of the University Grants Commission, along with UGC itself, will oversee all operational aspects of higher education. The details of the legislation and/or other means for the establishment of these bodies will be worked out. The major functions to be performed by the apex body would be:

- (a) to advise Government on Policy;
- (b) to coordinate activities of the other bodies in different fields;
- (c) to encourage inter-disciplinarity and promotion of inter-interfaces among different areas;
- (d) to allocate resources;
- (e) establishment and management of common infrastructures and institutions; and
- (f) coordination of policy concerning external academic relations.

(C) ACCREDITATION AND ASSESSMENT MACHINERY

27. Excellence of institutions of higher education is a function of many aspects; self evaluation and self improvement are important among them. If a mechanism is set up which will encourage self-assessment in institutions and also assessment and accreditation by a Council of which these institutions are corporate members, the quality of process, participation, achievements, etc., will be constantly monitored and improved.

28. It is proposed to develop a mechanism for accreditation and assessment for maintaining and raising the quality of institutions of higher education. As a part of its responsibility for the maintenance and promotion of standards of education, the UGC will, to begin with, take the initiative to establish Accreditation and Assessment Council as autonomous body. It will evolve its own criteria and methodology for accreditation and assessment. Its main functions will be catalytic; it will not be enforcing any given norms and standards. It will analyse and evaluate Institutions and their performance to facilitate self-improvement. This Council will be supported by a professional secretariat in the performance of its functions.

MOBILITY

29. The Policy visualises measures to facilitate inter-regional mobility by providing equal access to every Indian of requisite merit regardless of his origin and emphasises the universal character of a university. To achieve this objective, the state Governments and Universities will be encouraged to admit students based on merit without any regard to domicile or nativity. Schemes to provide necessary support and guidance to institutions to admit students from other States will be evolved. In order that the all-India character in the composition of the student enrolment and faculty strength is ensured, priority will be given to schemes for construction of student hostels, staff quarters, provision of scholarships, etc. Efforts will be made to move towards the objective of making recruitment of teachers on all-India basis in consultation with the State Governments.

30. Extension service and continuing education programmes will be an essential component of programmes and activities of all the universities. Provision will be made to secure greater involvement of teachers and students in the universities in extension services which will be as important a function of the universities as teaching and research. To promote and strengthen this function provision for academic recognition /credit will be considered in the course requirements.

VI. OPEN UNIVERSITY AND DISTANCE EDUCATION

1. The Open University System augments opportunities for higher education, ensures access, is cost-effective and promotes a flexible and innovative system of education.
2. The Indira Gandhi National Open University has been established with these objectives and came into existence in September, 1985. The University has been assigned the responsibility to coordinate the distance learning system in the country and determine its standards. In order to develop and strengthen the Open University System:
 - (1) The Indira Gandhi National Open University has initiated action for its academic programmes. In the first instance, the programmes will consist of undergraduate degree and diploma programmes. The University will offer the diploma level courses in distance education and management from early 1987. These programmes will be followed by diplomas in rural development and in computer science which will be offered in the latter part of 1987. A diploma in creative writing is also envisaged. Preparations for the undergraduate programmes are in progress and the courses will be offered from early 1988. The University will also design courses specially in the areas of relevance to the needs of women and for teacher orientation.
 - (2) The courses will be structured on a modular pattern with the facility for accumulation of credits. Provision will be made for transfer of credits from the formal to the non-formal system, and vice-versa. The UGC and the Open University will frame detailed guidelines in this respect.
 - (3) Standards will be prescribed to determine the minimum level of learning at every stage of education and criteria will be evolved to objectively assess this level of attainment so that opportunities can be provided to all including housewives, agricultural and industrial workers and professionals to continue their education.
 - (4) To strengthen the delivery system of the Open University and the media support to its programmes, discussions will be held with the Ministry of Information and Broadcasting for provision of separate Radio and T.V. channels.
 - (5) In the discharge of its responsibility to coordinate the distance learning system and determine its standards, the National Open University will frame necessary statutes for

the guidance/compliance of the State Governments who either wish to establish their own open universities or want to take advantage of the facilities offered by the National Open University.

- (6) Arrangements will be made to develop a network of courses in the Open University System. This would mean that a student joining one Open University can take courses from another Open University. The system will, therefore, offer a wide variety of academic programmes.
- (7) It is essential that the quality of the Open University programmes and the efficiency of the delivery system are ensured. Since adequate expertise and trained manpower in this area are limited, it will be necessary that the Open Universities to be established develop their programmes in close collaboration with the Indira Gandhi National Open University.
- (8) State Governments will ensure that Open Universities are established after very careful planning and that the required resources and facilities are available to them. The National Open University will also give financial assistance to the State Open Universities and departments of correspondence courses for development purposes.

VII. RURAL UNIVERSITIES AND INSTITUTES

THE PRESENT SITUATION

1. Rural higher education received fillip with intensification of the freedom movement. In addition to several other thinkers, Rabindranath Tagore and Mahatma Gandhi gave particular attention to establishment of comprehensive institutions for the rural people starting at the early childhood level, going upto the highest. In spite of the difficulties faced by it, Gandhian Basic Education has survived in the country and comprises a vital feature of our system. A large number of Rural Institutes were set up under the auspices of voluntary agencies during the Second Five Year Plan. Over the years, however, Gandhian Basic Education, rural institutes and other institutions primarily meant for rural areas did not receive sufficient support and encouragement.

THE POLICY AND IMPLEMENTATION STRATEGY

2. The Policy envisages the development of a pattern of education related to the needs of rural communities and strengthening and support of programmes of Gandhian Basic Education. The Policy states that educational institutions and voluntary agencies which take up educational programmes based on the concept of correlation between socially useful productive work, social service and academic study will be encouraged.

3. For the implementation of the Policy directives on rural education a well-planned programme of encouragement will be launched for institutions/organisations which are composite in character - combining programmes from the primary and secondary levels to diploma and degree levels. The 'Rural University' or 'Rural Institute' is not envisaged as a traditional institution which lays down minimum qualifications for admission, well-defined courses of study, and award of diplomas and degrees based on examinations. Rather, a complex of institutions is envisaged which seek to integrate all aspects of education, training with productive and creative activities, horizontally across disciplines of sciences, technology, humanities and social sciences, and vertically across all stages of education - primary to higher education.

ACTION PLAN

4. Several measures will be taken in pursuance of the above objectives which would include:

- (a) Consolidation of the existing rural universities and re-organisation of the rural institutes established as a part of the scheme of rural higher education launched in the Second Plan;
- (b) Encouragement to other existing educational institutions and voluntary agencies to develop in accordance with Gandhian philosophy of education for rural reconstruction;
- (c) Development of selected institutions located in rural areas as autonomous colleges for strengthening programmes of education related to the needs of rural development;
- (d) Recognition and support to elementary, secondary and post-basic institutions based on the concepts of Nai Talim;
- (e) Strengthening of the content of all these institutions with emphasis on science and technology;
- (f) Designing a variety of courses at tertiary level around emerging rural occupations;
- (g) Strengthening teacher training facilities for Gandhian Basic Education; and
- (h) Review of recruitment qualifications to give due recognition and encouragement to field work oriented courses of rural institutes.

CENTRAL COUNCIL OF RURAL INSTITUTES

5. The Central Government will take the initiative in the implementation of the above programmes by providing resource support both for the development of infrastructure as well as conceptual, methodological and academic inputs in design and structure of programmes, development of teaching and learning materials, evaluation procedures, etc. For this purpose, a Central Council of Rural Institutes will be set up by the Central Government. It will be the responsibility of this Council to formulate and implement a well-coordinated programme as spelt out above. This Council may have a Standing Committee on Basic Education which will identify suitable institutions for further development and to provide assistance to them. The Ministry of Human Resource Development will appoint a Working Group to formulate detailed schemes for the development of rural institutes and Gandhian Basic Education.

VIII. TECHNICAL & MANAGEMENT EDUCATION

PRESENT POSITION

1. Technical and Management Education is one of the more significant components of Human Resource Development spectrum with great potential for adding value to products and services and for contributing to the national economy and improving quality of life of the people. In recognition of the importance of this sector, the successive Five Year Plans have placed great emphasis on the development of technical and management education. Expansion of technical education both at the degree and diploma level, enlargement of programme areas and increase in annual intake capacity is unprecedented anywhere else in the world. In the year 1947-48 the number of technical institutions at degree level was 38 and at the diploma level 53 with an annual admission capacity of 2940 and 3960 students respectively. The facilities for Post-graduate degree courses in Engineering and Technology were non-existent. Today the number of engineering colleges and technical institutions at degree level has risen to 150 and the polytechnics to 450 with an annual admission capacity of 30,000 and 70,000 students respectively. The post-graduate courses in Engineering and Technology are today offered at more than 80 institutions with an annual intake capacity of more than 6000 students. However, in spite of this significant development, in the field of technical and management education, a lot more have to be accomplished in respect of increasing its coverage and enhancing its accessibility, to various categories of people, and improving its productivity. In addition the changing scenario by the turn of the century in socio-economic, industrial and technological areas needs to be considered to enable the system to play its role with greater relevance and objectivity. The present position of the system and the major challenges faced by it are briefly summarised as under:-

(I) MANAGEMENT OF THE SYSTEM

Organisational Aspects

2. The All India Council for Technical Education (AICTE) an apex body at the national level supported by its Regional Committees, Boards of Studies, has been entrusted with the responsibility of coordinated development of technical education and maintenance of prescribed standards. The role played by the Council during all these years has been significant but for sometime past the Council has not been as effective in fulfilling its role as it should have been, because of a number of factors, including unregulated expansion of technical education in some cases without reference to the overall needs of the economy.

MANPOWER PLANNING

3. The planning of technical and management education had so far been attempted with limited data on manpower needs. However, recently in 1983-84 a national technical manpower system has been set up with lead centre at the Institute of Applied Manpower Research and 21 nodal centres in technological institutes and other concerned agencies in the states and a manpower development cell in the Ministry. The system has, however, yet to become fully operational and effective and requires to be expeditiously strengthened.

(II) THRUSTS AND DIRECTIONS

4. During the last three successive Five Year Plans, the major emphasis was laid on consolidation, improvement of quality and standards of technical education, postgraduate engineering education and research. With effect from the Sixth Five Year Plan Computerisation, new emerging technologies, application of science and technology to rural development, and continuing education have become the new areas of thrust.

PROGRAMMES AND THEIR DEVELOPMENT

5. Technician education has made steady progress in meeting the demand of middle level technical personnel for various sectors of national development. During the last three successive plans adequate attention could not be paid to technician education. To make up this deficiency and to bring the technician education up to a reasonable standard, special emphasis shall have to be laid on this sector.

UNDERGRADUATE EDUCATION

6. Besides the five Indian Institutes of Technology (IITs), Indian Institute of Science (IISc), Bangalore, we have 135 other engineering colleges, technological institutions including the State Engineering Colleges, State aided Engineering Colleges and University Departments/Institutes of Engineering and Technology. Because of the emphasis on standards in the IITs, RECs and other well developed Engineering Colleges and Technological Institutions, the quality of products of these degree level institutions is fairly good and reasonably comparable to international standards. Furthermore, to meet the requirements of rapid changes and developments in technology, under-graduate courses are being diversified.

POSTGRADUATE EDUCATION

7. IITs, IISc and other University Departments and well-developed Engineering Colleges are lead institutions offering post-graduate and research programmes. The performance of these institutes has been generally satisfactory. However, in order to sustain the thrust of their academic pursuit and research efforts

and to consolidate their activities, institutions offering post-graduate courses in Engineering and Technology need special attention.

MANAGEMENT EDUCATION

8. The four Indian Institutes of Management and institutions like XLRI along with Institutes/Departments of management in universities impart management education at the highest level and produce managerial manpower of high quality. The products of these institutes are widely sought by the corporate sector. However, needs of the unorganised and rural sectors for appropriate managerial personnel are largely unmet, requiring appropriate steps to be taken in this behalf. Further, the present number of IIMs and other management institutes may not be adequate to meet the increasing demand of industry for managerial manpower.

SPECIALISED PROGRAMMES IN OTHER CENTRAL INSTITUTES

9. Besides the institutions mentioned above there are other central institutes of national importance like the National Institute of Training for Industrial Engineering (NITIE) at Bombay, National Institute of Foundry and Forge Technology (NIFFT) at Ranchi, School of Planning and Architecture at Delhi, and the Indian School of Mines, Dhanbad which are involved in the task of technical education in the specialised disciplines and also training, consultancy and research in the specific fields. The infrastructural facilities in these institutions created long back are now inadequate to carry out the projected role. This requires necessary attention.

TECHNICAL TEACHER EDUCATION AND TRAINING

10. There are four technical training institutes offering a variety of long and short-term courses to polytechnic teachers for their inservice training. They are also involved in curriculum development, extension services, consultancy and research and educational management. They have become resource institutions for technical education and need strengthening and expanding of their infrastructure in order to perform their enlarged and changing roles.

CONTINUING EDUCATION AND DISTANCE LEARNING

11. The continuing education facilities for working personnel are provided at a few engineering colleges and polytechnics by offering part-time/evening courses for skilled workers, technicians and Engineers. The facilities for continuing education are, however, quite inadequate vis-a-vis the need and the demand from the working personnel not only in the organised sector, but also unorganised rural sectors.

NEW TECHNOLOGIES

12. Emerging technologies are vital to national development in general and technological advancement in particular. During the Sixth Five Year Plan 14 areas of emerging technology such as Micro-processors, environmental engineering, laser technology, water resource management, etc. were identified and financial support was given to selected institutions to promote them. However there are a large number of new emerging technologies in which India has yet to make a meaningful beginning.

COMPUTERISATION

13. Computers have become one of the most important tools in all professions and walks of life - requiring a substantially larger system to provide education and training in this area at different levels. In recognition of this, computer facilities are being made available to a number of technical institutions. However, there is a growing need to extend this effort to all institutions.

ENTREPRENEURSHIP DEVELOPMENT

14. Bringing about a positive attitudinal change among students towards self-employment and equipping them with relevant skills in this regard, is assuming increasing importance. However, a meaningful impact in this behalf has yet to be made.

WOMEN'S EDUCATION

15. Special polytechnics for women have been set up in all States. However, to give adequate attention to the women's education more such polytechnics may have to be established. Further, increased hostel facilities may have to be provided for women to enable them to avail themselves of facilities for technical education.

(III) INTERACTION NET WORK

16. A scheme of community polytechnics was instituted during the year 1978-79 with the objective of promoting rural development on scientific lines. Under the scheme selected polytechnics are identified to interact with the environment and promote transfer of technology to the rural areas. At present 107 polytechnics/institutions have been covered under this scheme. In order to make greater impact in this behalf, more polytechnics will have to be covered under this scheme and necessary policy support will have to be provided to bring about the much-needed coordination between the multiple agencies working in this area to facilitate the role of these polytechnics as change agents.

NET WORKING

17. A net work scheme has already been instituted between the Indian Institutes of Technology and the Regional Engineering colleges. To make necessary impact, other institutions may also have to be brought under this net work scheme. Net working will have to be developed between all the technical institutions at different levels, between the technical institutions and other institutions in the education sector and between educational institutions and R & D organisations/institutions.

(IV) INFRASTRUCTURE DEVELOPMENT

LABORATORIES AND WORKSHOPS

18. Majority of technical and management institutions were established two or three decades ago. Equipment and other facilities provided have largely lived out their normal life. They have either become obsolete or unserviceable and possess very limited learning value. In the present context of rapid scientific and technological advancement, modernisation of laboratories and workshops, therefore, requires urgent attention.

LIBRARY AND LEARNING RESOURCES

19. Library services and their utilisation by staff and students have not been satisfactory in a large number of institutions. The facilities in these institutions require to be strengthened. Recent developments in the field of educational technology have a great potential for enriching the instructional process. The role of resource centres is, therefore, becoming pivotal both for the teacher and the taught and the establishment of learning resource centres in increasing number requires necessary attention.

BUILDING AMENITIES

20. There is a huge backlog of building accommodation and connected amenities which has accumulated due to lack of funds in the successive Five Year Plans. The hostel accommodation is highly inadequate. Urgent attention is required to rectify the situation in these areas.

(V) STAFF DEVELOPMENT

21. On an average 30% of the teaching posts are lying vacant even though the minimum qualification of M.Tech. has been relaxed to enable the institutions to recruit B.Tech. Graduates wherever necessary. The main reasons for not attracting good talents to the teaching profession are the relatively unattractive salary structures, slow promotions and unfavourable service conditions. The scarcity of teachers is adversely affecting the quality and standards of technical education. Recently, a National Expert Committee has been set up to look into the entire question and

make suitable recommendations to improve salary scales, working conditions, service benefits and other relevant aspects important in this behalf.

(VI) INNOVATIONS, RESEARCH AND DEVELOPMENT

22. R&D Programmes exist in many technical and management institutions, universities and other research institutes. The main focus appears to be on exploration for developing new knowledge rather than application of knowledge for enhancing production and productivity. Designing and implementing research programmes relevant to the changing industrial requirements are not undertaken on a wide enough scale.

23. Infrastructural and financial assistance for R&D activities in institutions may have to be stepped up for correcting these imbalances and enabling the system to have on-going self-renewal capabilities relevant to Indian conditions.

PROGRAMMES

24. The Policy Statements concerning the system of technical and management education have been clustered with reference to inter-related objectives, priorities and programmes into six key functional areas. These include scope and management of the system, programmes and modifications, interaction and net work, infrastructure development, staff development and innovations, research and development. The programmes arising out of the policy statements in regard to these key areas are given below:

(A) SCOPE AND MANAGEMENT OF THE SYSTEM

Strengthening of AICTE and its Boards

STRENGTHENING BOARDS OF STUDIES

25. The Boards of Studies set up by the All India Council for Technical Education will be adequately strengthened to meet the needs arising from the likely changes in the economy, industry and social environment. This will be through adequate representation of concerned Ministries, like Ministries of Industry, Electronics, Railway, Power etc., professional bodies and user system, monitoring of relevant data on a continuing basis, effective linkages with information systems and frequent meetings to provide guidelines for programme design and development.

CREATING NEW BOARDS

26. New Boards of Studies of the All India Council for Technical Education will be set up in new emerging areas of Technology and also in continuing education, distance learning and educational technology and teacher training.

RESTRUCTURING THE COORDINATING COMMITTEE

27. The Coordinating Committee of the All India Council for Technical Education will be re-structured and strengthened to ensure effective coordination between the different Boards of Studies and closer integration of the Technical and Management Education System.

INTEGRATION OF CRAFTSMAN TRAINING

28. To ensure coordinated and balanced development of technical, vocational and management education at all levels, the educational components of vocational education and craftsman training will be integrated.

STATUTORY AUTHORITY TO AICTE

29. An appropriate legislation will be introduced by the Central Government after due consultation for vesting the All India Council for Technical Education with statutory authority to play the roles assigned to it by the national policy adequately and effectively.

ACCREDITATION AND PROMOTION OF EXCELLENCE

30. The All India Council for Technical Education will set up Board of Accreditation to make recommendations to it on accreditation of programmes and institutions. The Board with the active involvement of Professional Bodies both at the Centre and the State level will prescribe guidelines and norms for the purpose. The Board will also constitute accreditation panels at the State level for different levels of technical and management education on the basis of the prescribed guidelines.

STRENGTHENING OF ADMINISTRATIVE BODIES

Bureau of Technical Education and its Regional Offices

31. The Bureau of Technical Education will be strengthened in terms of status and number of personnel in quality and professional expertise. The Regional Offices will also likewise be strengthened.

STATE BOARDS AND DIRECTORATES OF TECHNICAL EDUCATION

32. The State Boards and Directorates of Technical Education will be strengthened to plan and implement development programmes based on the new thrusts of the Policy. Each State Directorate will have a policy implementation cell. Necessary guidelines in this regard will be formulated.

COMPUTERISED INFORMATION SYSTEMS

33. The Technical Educational Bureau at the Centre and the State Directorates of Technical Education will have computerised information systems linked among themselves and the Technical Manpower Information System with its Lead Centre at the IAMR and the State level nodal centres. This network will assist in planning, monitoring and decision making and in the management of change.

NATIONAL MANPOWER INFORMATION SYSTEM

34. The manpower planning agencies within each State, the TMIS and its Regional nodal centres will jointly plan surveys for identifying the technology and manpower needs of unorganised, rural, infrastructure and services sectors.

35. For properly delineated geographical areas within each State, the State department of Technical Education will identify technical institutions which will periodically:

- conduct surveys for assessing needs of sectors, specified above;
- gather data for TMIs, from technical/management institutions and industry located in the geographical area and furnish the same to the State nodal centres. The institutions identified will be provided with an information cell for this purpose.

36. Regional Manpower Information Centres will be established at the TTTIs or other appropriate regional organisations to design programmes, coordinate and integrate the functions of the State nodal centres in each region and to liaise with the Lead Centre of TMIS at IAMR.

37. Central and State Governments will bring appropriate legislation making it obligatory for industry and other user systems to provide technical/management manpower data to the Information Cells in institutions and to State nodal Centres.

AUTONOMY TO TECHNICAL/MANAGEMENT INSTITUTIONS

38. The All India Council for Technical Education will initiate action for formulation of guidelines for identifying and awarding academic, administrative and financial autonomy to technical and management institutions and prescribing norms of accountability.

39. IITs, TTTIs, IIMs and other such institutions will offer their support and services for developing such institutions, their faculty and infrastructure for seeking autonomous status. Suitable schemes in this regard will be evolved.

40. State Governments, UGC and other funding agencies will provide block grants to autonomous institutions and streamline financial procedures. Suitable guidelines will be evolved in this regard.

INTER-REGIONAL MOBILITY OF STUDENTS

41. The Central Government will encourage State Governments and Universities to admit students based on merit to higher technical institutions regardless of their origin or domicile. Suitable schemes to provide necessary guidance will be evolved and financial resources will also be available to the institutions admitting the students from other States. Financial assistance and other policy support will also be provided to the institutions to facilitate the mobility of teachers.

(B) PROGRAMMES AND MODIFICATIONS

COMPUTER EDUCATION

42. Computer Centres at IITs, Indian Institutes of Management (IIMs), Technical Teachers' Training Institutes (TTTIs) and other Central and State institutions will be supported to offer programmes and courses in computer education at different levels and also to undertake teacher training and software development programmes in this area to promote this activity. Necessary steps will be taken to see that the computer facilities at the appropriate level are made available to all the Engineering Colleges and Technical Institutions in the country by the end of the VII Plan period. The AICTE/MHRD will formulate suitable schemes to strengthen the facilities at the various centres and ensure effective coordination among them. Further details of action in respect of computer programmes are discussed in the section dealing with Media and Technology.

ENTERPRENEURSHIP DEVELOPMENT

MANAGEMENT EDUCATION

43. IIMs, university departments of management and other technical institutions will undertake research studies and constitute study groups to document Indian experiences in the non-corporate and unorganised sectors. Such studies would be widely disseminated to provide a basis for planning of management education in these sectors.

44. The All India Board for Management Studies would formulate suitable schemes for this purpose, in consultation with professional societies.

MANAGEMENT PROGRAMMES FOR NON-CORPORATE AND UNORGANISED SECTORS

45. Selected institutions will offer management programmes including continuing education for developing management personnel

at appropriate levels for the non-corporate and unorganised sectors, like education, rural development, services, small industry etc. Institutions organising these programmes would be strengthened/developed for this purpose. AIBMS and AICTE would formulate suitable schemes for this purpose.

CURRICULUM DEVELOPMENT CELLS

State Level Curriculum Development Cells

46. State Departments responsible for technical and management education will establish/strengthen State level curriculum development cells to assess the current projected needs of industry and user systems on a continuing basis to meet the requirement of the rapid scientific technological advancement.

STRENGTHENING EXISTING CELLS

47. Existing curriculum cells located in IITs and TITs will, in addition to their present function of developing curriculum resource material and software will also develop models for curriculum development and organise training programmes for developing professionals for new centres. They will also coordinate the work of the new curriculum development cells in the area for optimum functioning and effective utilisation. To achieve these, existing curriculum development cells at both the degree and diploma level will be strengthened and provided with necessary funds.

PROGRAMME IN NEW/IMPROVED TECHNOLOGIES

48. Institutions at different levels, selected for offering courses/programmes in new and improved technologies will develop new departments/laboratories and staff for this purpose. Guidelines providing adequate flexibility to meet local needs for the selection of these institutions and the development of new departments/laboratories will be formulated by the AICTE, in consultation with relevant agencies/boards/professional bodies/industry etc. and will support innovative efforts of individual institutes.

FLEXIBILITY IN COURSE OFFERINGS

49. Technical and Management programmes at degree and diploma levels would be restructured on a flexible modular pattern based on credit system and with provision for multipoint entry. Suitable models and necessary guidelines for this purpose will be developed by AICTE.

50. Institutions at degree and diploma levels in each State with potential for introducing such flexible programmes will be identified. Orientation programmes will be conducted by IITs, TITs and other selected institutions to enable the staff of such

institutions to plan and implement the programmes. AICTE will involve CDCs for developing guidelines for this purpose.

51. Guidance and counselling services will be strengthened and additional resources will be provided to institutions for extending these services.

TECHNICAL EDUCATION FOR WOMEN

52. Opportunities for technical education for women at all levels will be considerably increased. Women's access to technical education, will be improved qualitatively and quantitatively. Additional Women Polytechnics will be established by the State Governments and Residential Polytechnics for Women of a larger size will be set up under the Central Sector. The choice of trades/disciplines offered to women at Certificate/Diploma/Degree levels in all types of technical education institutions will be made keeping in view the objective of bringing about women's equality. Identification of certain skills and occupations as "suitable" or "relevant" for women, will no longer dictate the choice of subjects, either in the institutions meant exclusively for women or in the others. The selection of subjects will be based on the employment potential. Counselling services will be provided to enable women to opt for "new" subjects. All technical education institutions will be encouraged to start new formal programmes for women. For increasing opportunities for entry, incentives such as hostel facilities, freeships, stipends, scholarships etc. will be provided particularly for courses in emerging technologies and programmes in which women's participation in the past has not been adequate. Formulation of guidelines for this purpose will be attended to by AICTE.

TECHNICAL EDUCATION FOR THE HANDICAPPED

53. Sufficient funds will be provided to start special education and training programmes for handicapped in selected institutions.

CONTINUING EDUCATION

54. The AICTE will set up a Board of Studies for Continuing Education and Distance Learning. This Board in association with professional bodies and industry will provide guidelines for need assessment, planning and implementation of programmes for identified target populations belonging to organised/unorganised/rural/urban sectors and for their certification.

55. State Directorates of Technical Education will formulate schemes to initiate studies to assess the continuing education needs of technical personnel in different regions/districts to decide about the areas, forms and modes in which programmes are to be offered.

56. State Governments and Central Government will encourage industry for making adequate provisions for continuing education of the working personnel. Suitable Schemes will be evolved by MHRD/AICTE and State Departments in consultation with industries.

57. Institutions selected for this purpose in consultation with user systems and professional bodies will determine the target population and their needs, design and offer relevant programmes to different categories mostly on a part-time basis and adopting sequential and modular patterns. These programmes may result in the award of degrees in specific fields of engineering and technology including technician degree. MHRD/AICTE will formulate a suitable scheme in this regard.

58. The Technical Education Bureau at the Centre and State Departments of Technical Education will set up continuing education cells for planning, implementing, coordinating, monitoring and reviewing.

59. Continuing education departments will be established in selected polytechnics, engineering colleges and management institutions in each State. These institutions will offer formal/non-formal programmes based fully or partly in institutions. These programmes may also lead to diploma, advanced diploma, degree in engineering and technology including technician degree in applied technology.

DISTANCE LEARNING

60. The continuing education departments referred to above would also offer programmes, mostly non-formal in nature, with a suitable combination of contact phase and distance learning, to cater to the needs of those having limited access to institution-based learning due to inadequate pre-requisites, non-proximity etc. These would include correspondence courses and also programmes involving the use of mass media like Radio and T.V.

RESOURCE DEVELOPMENT CENTRES

61. Resource Development Centres for continuing education will be set up in the existing QIP centres to develop learning resources for all types of programmes. These centres will have linkages with Indira Gandhi National Open University, other open Universities in the country and continuing education cells in each State for sharing resources and know-how and to avoid duplication.

INTERACTION AND NETWORKS

Community Polytechnics

Appraisal

62. The Community Polytechnic system will be appraised by a suitable agency to suggest measures for further strengthening and

expanding the system and also for increasing the quality and coverage of the system. In planning the coverage due recognition will be given to the needs of the backward areas and the weaker sections of the society including SC/ST, women and minorities.

PLANNING FOR DEVELOPMENT

63. The State Governments will formulate schemes for strengthening and increasing quality and coverage of the Community Polytechnic system supplementing and complementing the movement.

64. One special institute for relevant/useful technology and rural development in each State for promoting R&D, Development of Technology, conducting a variety of programmes with reference to rural development and act as resource institution to Community Polytechnics and other institutions involved in transfer of technology and Rural/Community development. These institutes will be integrated in their functioning with the proposed rural universities where appropriate and feasible. AICTE will formulate a scheme for the purpose.

INTEGRATED RURAL DEVELOPMENT PROJECTS

65. Specific Integrated Rural Development projects will be undertaken by identified institutions/agencies. Schemes for such projects will be prepared by the State Directorates of Technical Education, in consultation with TTIs, Rural Institutes and other concerned organisations.

PROMOTION OF PROGRAMMES AND PROJECTS

66. Central and State Ministries/Departments concerned with Rural/Community development will assign a formal role to Community Polytechnics in the planning, implementation and review of rural development projects in conjunction with other agencies involved in rural development.

67. Each Community Polytechnic will have a resource and information centre to provide information on appropriate technologies, transfer of technology, action research strategies etc. The AICTE will formulate suitable guidelines and schemes for the establishment of such centres.

68. Projects for application of science and technology for rural development will be undertaken by selected Community Polytechnics in order to understand the problems and processes of rural development, through action research and evolve replicable models.

69. Technical and Management institutions other than Community Polytechnics will also undertake programmes/projects for application of Science and Technology to rural development. The AICTE will formulate suitable schemes in this regard.

STRENGTHENING ADMINISTRATIVE BODIES

70. The provision made under Management of the System for the strengthening of Administrative Bodies will take care of the requirements of this Scheme also.

INDUSTRY-INSTITUTE INTERACTION

Planning

71. AICTE will formulate guidelines for the promotion and planning of Industry-Institute interaction encompassing a variety of areas like curriculum development, resources sharing, undertaking joint project, training of students as well as faculty, sandwich programmes, continuing education of Industry personnel.

72. Based on these guidelines, comprehensive projects for industry-institute interaction will be prepared by each technical/management institution. State departments of technical education/MHRD will prepare schemes incorporating such projects.

EXCHANGE OF PERSONNEL

73. Schemes for promoting exchange of personnel between institutions and industry with conditions favouring such exchanges will be drawn up by All India Council of Technical Education (AICTE) and implemented with the cooperation of the State Departments of Technical Education, Technical/Management institutions.

ADOPTION OF INSTITUTIONS

74. State Governments, through the Department of Technical Education identify institutions considered feasible for adoption by a major industry in the vicinity. AICTE will draw schemes for such adoption.

ADMINISTRATIVE CELLS

75. The Technical Education Bureau at the centre and the State Departments of Technical Education will have cells for promoting industry-institute interaction. Similar cells will be provided in each Technical and Management institution. The schemes for the establishment of these cells will be prepared by AICTE.

NETWORKS

LINKAGES BETWEEN SECTORS OF EDUCATION

76. Effective linkages will be established between technical education and general education sectors - for effective curricular adjustments, implementing continuing education programmes, availing facilities of other sectors and for considering other

intersectorial issues of the relevance and importance for enrichment, optimisation etc. The overarching umbrella envisaged for higher education will provide a forum for ensuring such linkages. For detailing the nature of linkages and specific mechanism a suitable scheme will be formulated by AICTE in consultation with parallel bodies/agencies in the education sector.

LINKAGES WITH R&D ORGANISATIONS AND INDUSTRY

77. MHRD will formulate guidelines for the formation and operation of networks of technical and management institutions at different levels, either amongst themselves or with industry, R & D organisations like CSIR, DRDO, KVIC, CART etc. for functions such as information sharing and dissemination, resource sharing, undertaking joint projects and faculty development.

INFRASTRUCTURE DEVELOPMENT

Modernisation and Removal of Obsolescence

78. The position regarding obsolescence and lack of infrastructure facilities will be studied in respect of all types of technical and management institutions. In the light of such surveys suitable schemes shall be formulated by the AICTE in respect of the following :

- modernisation and removal of obsolescence of equipment, machinery, laboratories and workshops;
- measures for expeditious disposal of obsolete and unserviceable equipment and for procurement of new resources and optimum utilisation of the existing and new resources;
- modernisation and removal of obsolescence of libraries including facilities;
- establishment of learning resource centres including provision of hardware, software, personnel and instructional facilities;
- creation of depreciation funds for each institution to ensure continued removal of obsolescence under non-plan budget.
- developing specialised laboratories in areas of emerging technology which could be shared by a group of institutions located in the region/sub-region.

79. Similar schemes will be prepared by the State Governments and provisions for replacement of obsolete equipment will be made under State plan and non-plan budget.

UTILISING CAPACITY FOR GENERATING RESOURCES

80. Institutions will identify spare capacities - building space, equipment and machinery time, faculty expertise and utilise the spare capacities for generating resources by providing consultancy and services to community and industry. Central/State Governments will allow the institutions to retain the funds so generated and also provide matching grants for their development.

MAINTENANCE

81. Assessment will be made to determine the number of centres for repairs and maintenance in specific areas be set up in each State. Institutions selected on the basis of their expertise and facilities will be identified for locating these centres. These centres will cater to the needs of repair and maintenance of all technical institutions in a State. Guidelines and details in this regard will be evolved by the AICTE.

82. Central and State Governments will allocate adequate funds to maintain campuses, buildings and services in their institutions and to make necessary alterations in building lay out, electrical installations and services to suit the changing needs of curriculum, students and staff.

LEARNING RESOURCE CENTRES

83. Learning resource development centres will be established in IITs, TTTIs and other identified institutions. These centres shall:

- undertake the development of print (textbooks, workbooks, self learning modules, laboratory manuals including modules for contemplary laboratory experiments) as well as non-print (video cassettes, CAI, Tape slide packages, OHP transparency packages, etc.) resources to meet the needs of different ability groups and low cost equipment and simulations for laboratory instruction;
- organise dissemination and distribution of learning resources
- coordinate the work among themselves to identify areas of work to avoid duplication.

PROVISION OF COMPUTER FACILITIES

84. All technical and management institutions will be provided with appropriate computer facilities for use in instruction on computers, CAI Research, student testing, progress reporting, MIS etc. The AICTE will make a suitable scheme for this purpose.

85. A suitable scheme for net working computer facilities in a region or sub-region for optimal use of the computer resources available will be taken up.

HOSTEL ACCOMMODATION

86. Each technical and management institution will assess the requirement of hostel accommodation including furniture and amenities for boys and girls. Girls' hostels will be constructed to ultimately meet 100% of the requirements on the basis of assessed needs and Boys' hostels will be constructed to meet at least 50% of the requirements. In addition, the State Governments and individual institutions will explore the possibility of collecting resources from various agencies to increase the hostel capacities. The State Government plans will incorporate the required component of hostel facilities. The AICTE will also formulate a suitable scheme for this purpose.

AMENITIES

87. Amenities for sports, recreation, creative work, hobbies and cultural activities will be provided in all the technical and management institutions as per the norms to be evolved by the State Governments/AICTE.

STAFF DEVELOPMENT

Staff Recruitment

88. The State Governments will constitute separate technical teachers service commissions to accelerate and professionalise recruitment procedures.

89. The State Governments will delegate necessary powers to DTEs and the Heads of individual technical institutions to recruit teachers and other staff to meet short-term requirements.

MULTIPLE ROLES OF TEACHERS

90. The concerned authorities in State Government and autonomous institutions will develop job profiles which will include the multiple roles of teachers in teaching, research, consultancy, development of instructional resources and management of institutions, specifying the relative weightages for different categories of teaching staff.

SERVICE CONDITIONS

91. The MHRD will expedite the examination and implementation of the recommendations to be formulated by the National Expert Committee set up by AICTE on

- revision of pay scales of teachers in technical and management institutions

- cadre structure
- promotional opportunities for career growth
- personal-merit promotion schemes
- perquisites like housing and sabbatical leave
- incentives for excellence in performance
- norms for consultancy work and other related aspects.

STAFF APPRAISAL

92. The AICTE will evolve feasible staff appraisal system incorporating necessary norms for accountability. This will be finalised through extensive consultations with the State Governments, DTEs, Institutions, professional bodies and teachers' representatives.

STAFF DEVELOPMENT

93. The State Governments and relevant institutional authorities will make initial and in-service training of teachers mandatory. The AICTE will initiate suitable action for this purpose.

94. The State Governments and other institutional authorities will make staff development plans as an integral component of annual plans of the institutions. They will encourage the formulation of a staff development cell in each institution on the guidelines that will be formulated by AICTE.

95. The staff development plans of individual institutions in each State will be integrated at the State level by DTEs and other respective agencies.

96. AICTE will identify various institutions and centres, and if necessary, set up new centres for offering staff development programmes including continuing education of teachers. IITs, Quality Improvement Programmes Centres, TTIs, and other identified technical institutions will organise staff development programmes. These programmes will cover various areas such as subject matter updating, instructional delivery systems, industrial training, instructional resource development and research.

97. The State Governments and other institutional authorities will sanction and actually appoint training reserves in all technical and management institutions to facilitate the staff development programmes on a continuing basis, with the assistance from MHRD.

VOCATIONAL EDUCATION AND TEACHER TRAINING

98. Curriculum Development Centres will be established one in each state for development of curriculum, instructional materials and media for the vocational courses and training of vocational teachers. NCERT, TTIs and RCEs will extend their services for training of the staff of these centres, in addition to developing curricula and instructional resource materials in the initial stages. MHRD/AICTE/National Council of Educational Research and Training will formulate a scheme for the establishment of centres and delineation of roles for NCERT, TTIs and RCEs. This will be in addition to the similar schemes formulated under vocationalisation.

INNOVATIONS, RESEARCH AND DEVELOPMENT

Promotion of Research and Development

99. A separate section deals with Research and Development in higher education institutions. The programme of action suggested therein will be taken up. In addition and in particular, the AICTE, in consultation with State Governments, will identify potential higher technical institutions for promoting Research & Development activities on a systematic basis. These institutions will be provided necessary infrastructural facilities and resources to undertake research work in:

- improving established technologies.
- generating, adopting and adapting new technologies to meet local requirements and to meet challenges of latest advancements.
- developing technologies appropriate to rural development.
- enhancing productivity of technical and management education at all levels.
- management techniques.

100. They will also design and offer relevant programmes to train people to equip them with the requisite competencies for undertaking Research and Development activities in specified disciplines. MHRD will formulate necessary guidelines in this regard.

TECHNOLOGY WATCH GROUP

101. The Central Government will constitute technology watch groups in higher institutions of learning in each State. These groups will consist of eminent scientists, technologists and educationists from research organisations, industries and other user-agencies. They will constantly look out for new and emerging technologies, evaluate their relevance and feasibility in the

national context and their potential for adaptation. The information will be disseminated to planners, curriculum development centres and all others concerned and interested in the same. A scheme for this will be formulated by MHRD.

RESEARCH FOR IMPROVING EDUCATIONAL PROCESSES

102. IITs, TTTIs, IIMs, and other selected technical and management institutions at different levels will undertake research studies on educational management and in areas aimed at improving the productivity of educational processes i.e. curriculum development, instructional system design, curriculum implementation and evaluation, organisational development and disseminate the findings to all institutions for information and effecting suitable improvements. MHRD/AICTE will formulate a suitable scheme for this purpose.

IX. MAKING THE SYSTEM WORK

THE PRESENT SITUATION

1. Our system of education and learning has nurtured roots of our culture and is the foundation of our innately tolerant and civilised society. With all its imbalances and shortcomings the educational system is a living entity which has vast achievements to its credit. It has sustained the democratic institutions and the administrative apparatus, and has provided the manpower not only for spectacular advances in agriculture and industry, but also in new and emerging areas of science and technology.

2. The educational system, however, presents an uneven, often conflicting picture: of great institutions, with a large number of universities and colleges where all norms of academic conduct are undermined; several thousands of schools in which teachers and students are engaged not only in observance of their expected roles but which radiate excellence, and also those which do not open on time, are unkempt and where the teaching and learning processes have little chance to germinate; large numbers of teachers who inspire their pupils and are known for their learning, but also teachers who thoughtlessly ignore their obligations, sometimes altogether absenting themselves from the institutions; most sophisticated systems of pupil evaluation, with an examination system which is fast losing its credibility; and innumerable instances of outstanding work done by people engaged in the onerous task of organising adult and non-formal education programmes, as well as large numbers of projects which just do not function.

3. It is obvious that in this dichotomous situation, it is women, the urban poor, and the rural population who suffer. The lack of order and discipline in the educational system prevents achievement of optimal results from the vast investment made in it, which in turn is the cause of widespread despair and cynicism about the country's future.

4. Unless the system of education works properly - at all stages of education, in all parts of the country - the ambitious programme of educational reform envisaged in NPE will come to a naught. As pointed out in the document 'Challenge of Education - a policy perspective', brought out by the Central Government in August 1985, the system of education is an integral part of the total socio-economic system and that transformation of the system of education will have to go side by side with critical changes in the rest of the system. NPE acknowledges this, but it goes on to affirm that, given the will, and a collective endeavour of teachers and students it is possible to infuse a new life, a new creativity into the system.

THE IMPLICATIONS OF POLICY, STRATEGIES AND OPERATIONAL PRE-REQUISITES

5. The three short paragraphs on Making the System Work (para 7.1 to 7.3) have been spelt out as the pre-requisite for reform of the educational system. It implies that just as functioning of the democratic institutions and enjoyment of fundamental rights are dependent on observance of civic responsibility and inner discipline by the citizen of a country, likewise an atmosphere of freedom, innovation and creativity in educational system is dependent upon observance of norms of intellectual rigour, mutual consideration among all concerned, and creation of a new work ethic.

6. In view of this, NPE refers to the necessity of introducing discipline into the system "here and now, in what exists". Secondly, it refers to a better deal to teachers to go side by side with a sense of greater accountability among them; provision of improved students' services alongside an insistence that their behaviour is in accordance with acceptable norms; and better facilities for educational institutions with a system ensuring that the performance of the institutions comes up to the norms set at the national and State levels. While any insistence on imposition of rigid uniformity or lifeless discipline would not be in consonance with the general tenor of NPE, and the process to be followed in creating the new educational order has to be participatory, cooperative and based on a renewed faith in the country's future, it is incumbent upon us to develop a clear approach to this crucial task. The essential aspects of this task are the following:

- (a) Certain norms of performance must be laid down for observance by the administration (Government as well as managements of educational institutions), teachers, students and educational institutions. It should be made clear that these norms are non-negotiable, and not conditional on fulfilment by any other category of organisation or individual of their obligations.
- (b) Non-observance of these norms should inevitably lead to certain consequences, and neither fear nor favour should affect it.
- (c) Some immediate measures have to be taken to improve the working conditions of teachers and the conditions in which students study and live. Similarly, the essential conditions which enable educational institutions to effectively play their role have to be fulfilled. The faith manifested by the nation in the teachers and students, as reflected in NPE, implies that they will be systematically consulted at various stages of planning and implementation of Making the System Work. Indeed, much of the responsibility for this will rest on teachers and students.

- (d) One of the malaise which has eaten into the educational system is unwarranted interference by political and administrative centres of power. While it is not possible to insulate the educational system from the socio-economic and socio-political forces, it will have to be ensured that the working of the system is not undermined by the political bureaucratic and anti-social elements-within or outside the educational system.

TEACHERS

7. Measures proposed to be taken for improving the working and living conditions of teachers have been spelt out elsewhere. The immediate steps to be taken in the context of this Programme of Action are as follows:

- (i) Grievances redressal machinery will be established on the lines indicated in the section on Teachers, to ensure that all their legitimate grievances are promptly attended to and they receive what is due to them;
- (ii) Teachers in aided and private institutions are often subjected to indignities, extortions and under-payments. This will not be tolerated and legal action taken as may be due.
- (iii) All State Governments will formulate guidelines/rules for posting and transfers of teachers. The Central Government will send general advice in the matter. Representatives of teachers will be consulted before finalisation of these guidelines/rules.
- (iv) The expectation that the teachers work in the institutions where they are posted/appointed, attend institutions regularly, and take classes in accordance with the predetermined schedule will be enforced. Meetings and conferences, within the country or overseas, must not interfere with the instructional programme. Appropriate mechanism will be created to verify that these norms are being observed. This would include regular taking of students' attendance and maintenance of consolidated record of the same by the head of the institution/department. Teachers who are elected/nominated to Parliament or State Legislature will be required to take leave of absence during their term as Member. However, in this process they will not be losing their seniority or increments.
- (v) A comprehensive, open, participatory and data-based system of teacher evaluation will be established. This system will take into account the work of teachers in the area of research and innovation, regularity and attention to teaching, and extension and social service activities. While each State Government or university or management may create a system of teacher evaluation as may be

appropriate, it would, generally speaking, include self-evaluation, evaluation by peers and, in appropriate cases evaluation by heads of institutions/departments and by students. It will not be open for teachers not to undertake self-evaluation where such evaluation is prescribed. Selection of teachers to higher positions and promotions will take these evaluation instrumentalities into consideration. The small number of nonperformers and negligent teachers will be isolated, and where necessary, subjected to appropriate penalty.

- vi) There are instances of teachers conducting themselves in a manner not befitting the profession. In some extreme cases this includes coming to institutions in a state of intoxication, using foul language towards students, misbehaviour towards female students, requiring students to do unnecessary chores and inducing pupils to take private tuitions. Such aberrant behaviour can not be tolerated and the management system as well as organisations of teachers must do everything in their power to prevent it.

STUDENTS

8. There has been a marked deterioration in the amenities available to students - in universities, colleges as well as in schools. Instances are not wanting where students have had to agitate for securing facilities of drinking water, cycle-sheds, timely supply of textbooks, well-cooked meals in hostels, etc.. Other legitimate facilities like inexpensive canteens, well-managed cooperative stores for supply of books, stationery and other necessities, recreation centres, sports facilities, etc. are wanting in practically all institutions. Comprehensive programmes for provision of students' amenities will be taken up in all categories of institutions. Meanwhile, action has to be taken immediately as follows:

- (i) The glaring deficiencies in regard to students' amenities will be made good without delay and an effective machinery created for removal of students' grivances.
- (ii) Students eligible for scholarships and other incentives will receive them in time. Those responsible for neglecting this aspect would be appropriately penalised.
- (iii) Students should be treated with consideration and necessary steps taken for securing their partnership in making the system work.
- (iv) Each State, university and college must take decision, keeping in view the guidelines provided by the Education Commission (1964-66) regarding students' unions. In cooperation with students it has to be ensured that union elections do not degenerate into a game of money power, unseemly behaviour and disfigurement of buildings.

Students' unions will be advised to function in a democratic manner and their funds audited by the University auditors.

- (v) The vast majority of students want to pursue their studies and other educational activities in a peaceful and dignified fashion. However, there are some elements which cause unnecessary disturbances in the academic atmosphere. There is no place for violence, coercion and intimidation in the educational set up. Universities and colleges will formulate codes of students' discipline through suitable statutes/ordinance or other appropriate ways. All persons who commit offence punishable under law should be treated like any other person and other acts of indiscipline should not go unchecked and unpunished.
- (vi) Students' hostels have some time tended to become shelters for anti-social elements and frequently persons not eligible to stay there stay in an unauthorised manner. Discipline in hostels is as important as elsewhere and all instances of misconduct should be visited by appropriate action.

INSTITUTIONS

9. References have been made at several places in the various Programmes of Action to institutional improvements. As the internal efficiency of each institution improves, the performance of teachers and students would improve also. Without waiting for implementation of all the measures proposed in the various Programmes of Action, some steps will be taken immediately for improving institutional performance. Detailed planning in this regard will be undertaken by State Governments, universities, colleges, schools, panchayati raj bodies, District Boards of Education, Village Education Committees, etc.. However, some of the steps which should be taken immediately are listed below:

- (i) A minimum threshold of facilities will be provided for all educational institutions, special priority being given to primary schools, which have suffered from a greater neglect in the past.
- (ii) The existing physical plant and facilities available in the institutions will be tidied up, repaired as may be necessary, and refurbished. Optimum use will be made of these facilities.
- (iii) Without under-emphasising the importance of democratic and participatory functioning of educational institutions and university departments, persons having administrative responsibility will be given necessary authority for them to be able to discharge their responsibilities. Where appropriate and possible, administrative heads who have proved incapable of shouldering their responsibilities will

be replaced by more worthy persons.

(iv) Central and State organisations - such as UGC, AICTE, NIEPA, NCERT, State University Grants Commizzionz, SCERTs, etc. - will set criteria for assessment of performance of educational institutions. These criteria will include:

- number of days of instruction in a year,
- number of days of forced closure,
- regularity in conduct of examinations,
- regularity regarding declaration of results,
- regularity of academic sessions,
- quantity and quality of research,
- number of teachers, with refernce to number of days, who absented themselves.

These institutional evaluations will be brought out in the form of an appropriate annual report of the institution.

PROCESS

10. It is of the utmost importance that the process of arriving at decisions and their observance should be genuinely participatory. This process will be set into motion with preparation of a detailed scheme and consultations with educationists, teachers and students. Machinery for redressal of teachers' and students' grievances will be set up immediately. Preliminary outline of a Code of Professional Ethics for Teachers will be prepared by a joint group of national level teachers' organisations. CABE and SABE will set up special committees to lay down criteria of evaluation in respect of 'making the system work' and these committees will also regularly monitor, at the initial stages once every quarter, the extent to which the various parameters are getting operationalised.

X. DELINKING OF DEGREES FROM JOBS & MANPOWER PLANNING

1. The Policy visualizes de-linking of university degrees from the requirement for recruitment to services for which a university degree need not be a necessary qualification. It is also envisaged that this measure will lead to a refashioning of job-specific-courses.

IMPLEMENTATION STRATEGIES

2. Different jobs require different combination of knowledge, skills and aptitudes. Performance in an academic examination may not, therefore, be the appropriate means of screening candidate for employment. There are, in addition, problems of comparability of grades/marks awarded by the universities.

3. An important first step towards matching education with employment is the formulation of programmes of education and training related to available employment opportunities. This would require a scientific analysis of the job requirements for various positions, and tailoring appropriate programmes of education and training to impart the knowledge and skills required for the performance of those jobs.

4. When once the training programmes are introduced, for identified job positions, it would be necessary to prescribe certificates/diplomas obtained after such training as a necessary qualification for recruitment. Such a measure is necessary also to promote vocationalisation of education.

5. Where comprehensive recruitment examinations are conducted by recruiting agencies, the possibility of dispensing with the requirement of formal degrees as a qualification may be considered. Delinking should ensure that the craze for degrees is discouraged and that pressure on higher education is reduced.

6. To begin with, it is proposed to create a Cell in the Department of Personnel for identifying the jobs for which recruitment requirements can be reviewed on the lines indicated above. Such a review will be initiated in consultation with the concerned Ministries/Departments.

7. Later, it is proposed to persuade other recruitment agencies like the State Governments, Public Undertakings, and private enterprises to undertake a similar review.

NATIONAL TESTING SERVICE

8. The policy envisages the establishment of a National Testing Service to conduct tests on a voluntary basis to determine the

suitability of candidates for specified jobs and to pave the way for emergence of norms of comparable competence across the nation.

9. In order to give shape to this policy, it is proposed to establish a National Testing Service as early as possible and to conduct the first test before the end of 1987. The primary use of such a test will be to allow people, whether they have formal degrees or not, to demonstrate that they have the proficiency to qualify for a variety of jobs that have been traditionally limited to graduates. Such a test can also help those in employment to qualify for promotions.

10. Specially designed tests can also be administered at the national level for the purpose of entry to educational institutions at various levels. For example, a single test at +2 level conducted on a national basis can replace a multiplicity of entrance examinations to universities and colleges, specially professional courses like engineering, medicine, etc. Similarly, a test conducted at the Bachelors' degree level can determine the eligibility of candidates for admission to Master's degree courses irrespective of the fact that the concerned universities have declared the bachelor's degree results. At the Master's degree level, a similar test can determine the suitability of candidates for admission to research degrees, award of fellowships, etc.

11. It is proposed to develop a National Testing Service to perform the functions indicated above on a voluntary basis. Tests will be developed very carefully on expert advice based on experience. The NTS will be established under the auspices of the Ministry of Human Resource Development. The Department of Education of the Ministry of HRD would take early steps to have a detailed project report prepared for the establishment of the Testing Service.

XI. RESEARCH & DEVELOPMENT

SECTION I

THE PRESENT SCENARIO

1. The Task Force on Research and Development is concerned with all areas of natural and social science, humanities, engineering, agriculture and medical science. A brief overview outlining some of the problems is presented below.

S&T INFRASTRUCTURE

2. It is, since independence that major effort has been made to create a scientific and technological infrastructure covering a very broad spectrum of disciplines and capabilities. There has been a very significant quantitative expansion in the education sector. The enrolment in Engineering and Technology has moved up from 3000 in 1947 to around 40000 today. Now, there are 108 Universities, half a dozen Institutes of Technology, 111 Medical Colleges and more than 5000 colleges of all types including agriculture, veterinary, engineering, arts, science and commerce. There are 320 "Science & Technology" Institutions of which 240 are major S&T Institutions incurring an expenditure of more than Rs. 2.5 million per year. Of these 216 are specialised laboratories under the aegis of Department of Atomic Energy, Department of Space, Department of Science and Technology, Council of Scientific and Industrial Research, Indian Council of Agricultural Research, Indian Council of Medical Research, Defence Research and Development Organisation, Department of Electronics and Department of Energy. There are over 900 Inhouse R&D Laboratories in public and private sector industry. The stock of S&T personnel is estimated to be close to 3 million. From Rs. 20 crores in the first plan, the total allocation both plan and non-plan, for the S&T Sector has risen to Rs. 3406 crores by the end of the 6th Plan.

3. During this period, a wide based infrastructure has been built for the Science and Technology. A number of specialised Science Departments have been created and important Committees set up to look after Science and Technology at the highest levels. The accomplishments in Science and Technology in recent past have been quite considerable. The system of subsistence agriculture has been transformed into a commercial agriculture system through application of Science and Technology, and the basic infrastructure for making further S & T contribution to agriculture is now available. In the area of health, notable progress has been made in the eradication of epidemics and major diseases have been brought under control. The network of medical research has been vastly expanded. In the field of nuclear energy, capabilities have now been established covering the entire system for power

generation. Self-reliance in the manufacture of equipment for generation, transmission and distribution of power has been achieved to a significant degree. Space Technology has seen impressive developments and also been put to the benefit of socio-economic development of the nation. Capabilities in the area of Electronics and Tele-communication have vastly increased since independence. Similarly in the area of Ocean Technology, Bio-Technology and Environmental Research, many important developments have taken place. Science and Technology Councils have been set up in 18 states and 4 Union Territories. In the area of science and industrial research a very substantial system has been set up under the CSIR. Industrial base during the last decade has diversified enormously and industry has taken steps to modernise and up-grade its technological base. Other areas can also be mentioned where significant advances have been made. What comes out, however, is that when clear cut objectives and tasks have been allocated and necessary support provided, Indian Scientists and Technologists have been able to fulfil national expectations and this will continue to be the case in other areas where a similar approach is adopted.

4. However, when viewed in the context of the pace of development in Science and Technology in other parts of the world, the nature and dimensions of the problems of national development confronting us and the immense potential of S&T to help solve current problems, it is found that, despite significant advances the gap between India and other advanced countries has significantly widened in terms of scientific and technological capabilities. There is, therefore, a greater urgency for promoting Science and Technology, both for internal development and for international competitiveness. It would also be worthwhile to note that within the country there are enormous gaps in the infrastructural facilities and capabilities between what obtains in specialised scientific agencies and national laboratories, in the industrial undertakings, and in the educational system. The latter, in particular, has been allowed to run down to an unbelievable extent. This situation needs to be remedied rapidly if those emerging from our educational system have to be effective in our national research and production systems. It is not just the limited number emerging from a few leading institutions that is of relevance, but, there is a large number needed for the S & T effort as a whole. Another weakness of the S & T infrastructure has been its weak coupling with the production system. This has led to an insufficient use of science generated, and the lack of appreciation of capabilities in the universities, national laboratories, scientific agencies and the higher education system in general. The social resource of S & T Personnel in the country compared to the population and the magnitude of the task before us is small in comparison to what obtains elsewhere in the world. The quality of this personnel varies very widely. Furthermore, large numbers of these are not actually engaged in activities that can be construed as scientific or technical. A clear effort for development of R&D manpower is called for in order to match in number and quality of training, the need of the country. Despite increasing allocation

for S&T activities, allocation for development of R & D manpower remains meagre. There is also concern in the S & T community that the very best talent with the potential to be leaders of S & T are being lost either to opportunities available abroad or to other areas of endeavour in the country. There is need for determined effort to attract some of the best amongst our students to take to research as a career. For this, not only is it necessary to provide them new and major challenges that will attract them to the field, but also the facilities for such work and amenities and incentives relating to pay scales and emoluments, promotion and career advancement opportunities for continuous professional growth, and suitable work environment particularly housing. The educational system would have to be so equipped in order to attract such talent.

5. Despite the large enhanced infrastructure for S & T and consequently need for considerably large manpower for R & D, total research enrolment today, across all disciplines is around 45000 with only 6500 degrees awarded every year. About 45% of these degrees are in the field of science, 12% in agriculture, 2.4% in Engineering and 1% in Medicine. Resources available for the uptake of research by educational institutions, particularly for its infrastructure, are meagre. Eventhough the UGC/AICTE has established Centres of Advanced Study and Departments of Special Assistance or Centres of Excellence they do not cover even 5% of the institutions and departments. In spite of numerous difficulties, university research has made a vital contribution to sustain the efforts of the agencies, and in many cases to excel it. There are brilliant academics, senior and young in the institutions of higher education but the average quality of research is not very high and this may suffer further under the resource depletion conditions now obtaining in most institutions. Even when project support is available from external funding agencies, the poor infrastructure of the institutions deprives them of the capacity to absorb such support. Because sufficient funds are not provided for the maintenance of infrastructure and other overhead costs big research projects have tended to saturate the limited infrastructure and drain off already scarce funds and facilities in these institutions. Another fact worthy of note is that although a certain number of qualified Ph.Ds is available, there is a critical shortage in the crucial areas of S & T. It may also be recognised that the S & T agencies currently use their resources largely in isolation from each other and the necessary coordination is often absent.

SOCIAL SCIENCE AND HUMANITIES

6. In the area of Social Sciences and Humanities there has been a rapid growth of research and training organizations -- there are close to 200 research institutions in the country, 90% of whom are supported by the Government. The Indian Council of Social Science Research, the Indian Council of Historical Research and the ICPR have supported research and the ICSSR has set up 20 institutions in partnership with State Governments. The universities too have

a number of centres of advanced studies and departments of special assistance, in a variety of subjects including anthropology, linguistics, archaeology, music and musicology. About 2400 Ph.D. are awarded every year in the concerned subjects which constitute about 38% of the total. Considerable professional competence has been built up, but research activity in the institutions is quite uneven both in extent and in quality. The research taken up is generally unrelated to the problems of development and nation building, and continues to deal with subjects which may be of academic relevance but not necessarily of enough value for policy planners. Without under estimating the value of fundamental research there is a felt need for social science research scholars to deal with such applied research and to disseminate this information to policy planners in a form which is easily useful. The dovetailing of research findings into the syllabi remains poor and there is little linkage between social science research and other sectors of research. There is a real danger of creating uni-dimensional man in the absence of such linkages.

MAIN PROBLEMS AND SHORTCOMINGS

7. Some of the main problems encountered by research in our higher educational institutions are enumerated below:

- (1) Uneven spread of research effort and research scholars. Most of the effort is concentrated in a few institutions and not spread over the entire system. This should be seen in the context of the need to grow R&D culture in all institutions and at the same time using selectivity for creating and supporting groups of excellence.
- (2) An atmosphere and pace appropriate to research is difficult to sustain in the face of cumbersome rules, procedural difficulties and, most of all, lack of resources.
- (3) Research in Technology suffers due to lack of appropriate linkages, the absence of articulation of felt-needs by the user industry, and by the absence of a strong linkage with basic science which provide primary inputs to technology. Research in Technology is meagre because highly qualified technical personnel find other avenues of employment more profitable.
- (4) Very little research is undertaken to improve existing technology or applying existing or newer technologies to meeting the needs of villages and rural areas. Technologies which increase productivity and improve the performance of an existing process are not being developed. Imported technologies have not been suitably adapted to local situation.
- (5) Experimental scientists have suffered the greatest handicap in the educational sector. They generally face much greater difficulties than those in theoretical areas;

maintenance, running cost, and technical support are not adequately provided for.

- (6) Thrust of research and innovations is generally limited to the needs of the organised sector. The unorganised -- the medium, small scale and rural sectors are not getting adequate benefits of research.
- (7) Cooperation and collaboration between research centres located in universities or with R & D labs in industry is scarce.
- (8) Transfer/extension of technology even when developed indigenously, does not receive sufficient attention. A management culture suited for research and development of technology is absent.
- (9) There is little premium on quality and excellence especially in the area of relevant research and development. An appropriate system for recognising excellence and achievement and rewarding performance is yet to evolve. The problem is more acute when it comes to recognising performance in technological research.
- (10) Choice of research problems is largely dictated by considerations of easy publication in international journals.
- (11) Mediocrity is setting in. Research is largely confined to traditional areas; inter-disciplinarity has not taken root.
- (12) Scarce resources and facilities existing in some schools of research are not available for utilisation by other organisations. These facilities are considered the exclusive property of the laboratory or of a research organisation and sometimes even of individuals.
- (13) Even in otherwise well-equipped laboratories adequate provision for spares, consumables, replacement of short-lived equipment is not available. Also, no overheads are generally provided to the institutions.
- (14) Presently there is no mechanism for technology watching, technology assessment and technology forecasting for providing guidance to the research worker on the one hand and the developmental agencies on the other to enable them to take suitable decision for providing funding and organisational support.
- (15) Poor library, inadequate information system, absence of computational and reprographic facilities are endemic to the majority of educational institutions. Research facilities are largely outdated. The need for modernisation and removal of obsolescence is urgent.

- (16) The major S&T agencies draw heavily on the academic sector for their manpower needs yet, with some exceptions like the DST, they do not do enough, financially or otherwise, to support R&D manpower development and/or research in the academic sector.
- (17) While some of the Ministries/Departments have been providing funds for research projects, but for a few exceptions, there is little coordination or complementarity in their efforts.
- (18) Where import of specialised equipment or chemicals is needed the present procedures of Customs Duty Exemption and NMI Certificate are found to be complicated and time-consuming.
- (19) The present recruitment practices in the University institutions promote inbreeding. This require immediate change.
- (20) While India has a number of scientists engaged in R&D and many more are needed, the aspect of quality requires greater emphasis.
- (21) Linkage between research activity and the improvement of educational processes is very weak. Research will have to be utilised for renovation and renewal of the educational process and energising modernisation of curriculum. There is an absence of a nodal agency for managing, implementing and monitoring R&D in educational sector.
- (22) Research in social sciences is generally not related to problems of development. Nor are the results of social sciences research disseminated adequately to the policy makers in a form that they could be used in policy formulation. The linkage between research and curriculum renewal is also weak.
- (23) Most of the researches in Social Science are uni-disciplinary. Inter-disciplinary and trans-disciplinary researches are not taken up sufficiently. This is particularly needed in order to inter-face Social Science and Humanities with S&T.

contd/...

SECTION II

IMPLICATIONS OF THE COMMITMENTS CONTAINED IN THE NPE HIGHER EDUCATION AND RESEARCH-SYMBIOTIC RELATIONSHIP

1. In the National Policy on Education, great stress has been laid on research as an essential component of higher education because of its role in creating new knowledge and insights and imparting excitement and dynamism to the educational process. There is a symbiotic relationship between higher education and research; research cannot be imagined without the vital support of higher education, and education would be dull and monotonous without the opportunity and inputs of creativity. On the other hand it is research, particularly in science and technology, and deep critical studies in social, cultural, economic and political processes and situations, carried on in institutions* of higher education which make these institutions play a crucial role in national progress, self-reliance and security. In regard to science and technology there is a world wide conviction, reflected in the National Policy on Education (Para 2.3) that intellectual capital will play a far more important role in future in maintaining industrial competitiveness. It is natural that there are several paragraphs in the policy, making important references and commitments about research (for example, paras 2.3, 3.9, 5.32, 6.13 and 8.3).

2. The implication is that research in all fields - science and technology, social sciences and humanities including fine arts and indology, has to be encouraged. Eventually all institutions of higher education must actively pursue research, and performance in research ought to be an important measure of success for the individual as well as the institution.

MEANING AND SCOPE OF RESEARCH

3. In the context of educational institutions it may be borne in mind that research is not only what one does to obtain a Ph.D degree, but it has also to be viewed as an innovative way of accomplishing things, of doing things better, of discovering new relationship among facts. It is the exploration of the unknown through observations, experimentation and other forms of systematic enquiry followed by an objective and penetrating analysis and formulation of conclusions. The undergraduates and postgraduates could take up studies, surveys, field work, projects and other assignments related to scientific, technical, socio-economic problems -- for which there is limited scope, and they could make

*Because of diversity of nomenclature, "higher educational institutions" (h.e.i.) is used for universities, ITI's engineering and medical colleges, etc.

a creative contribution to the larger studies designed to tackle national problems. Socio-cultural impediments to the full utilization of the benefits of science, for example -- in having pollution free rivers, or small families, could be studied by students in specific areas, and ways and means of overcoming them may be

suggested. Thus the culture of pursuit of excellence and of thinking beyond traditional lines could be generated and brought to bear both on the quality of education and to the solution of real problems. Curricular and methodological changes, including changes in assessment systems would be called for, and the small resources necessary to take up new activities would have to be provided to the institutions. The benefits would be immense.

BASIC AND RELEVANT RESEARCH

4. Another factor of great importance is to recognise the pre-eminent role universities and other institutions of higher education play in the field of basic research all over the world. In this age of strongly science based industry and defence systems (since a high proportion of national budgets is spent on defence), "strategic research" is much in demand and it is usually defined as basic research carried out with the expectation that it will produce a broad base of knowledge likely to contribute to the solution of recognised current or future practical problems (as compared to entirely curiosity based research). This tool is the forte of the universities, just as, further down the line, applied research partly is. The intrinsic advantages of an hierarchy free atmosphere, of freedom, of an enquiry, and of fresh young minds constantly entering the field, add to the multidisciplinary environment of the universities and make research potentially cost effective. If the research potential of the institutions could be turned into relevant directions for solving immediate or distant problems, technological development, socio-economic development of regions, research related to thrust areas and national missions, and to critical studies on society, culture and the nature of growth and development, etc. the country would stand to gain tremendously.

QUALITY OF RESEARCH

5. These features and characteristics of research lead to certain imperatives which have been recognised by the NPE. Namely there cannot be compromise on the quality of research, a high quality will be ensured as para (5.32) says. Research of an indifferent quality neither contributes to knowledge nor to any social good; such research will have to be guarded against and reduced to the minimum. On the other hand, it is intrinsically difficult to judge or determine the quality of research when it has no relevance either to the concerned discipline or to the solution of significant problems.

LINKS, NETWORKING, PLANNING AND POLICY

6. Research, with all its economic and intellectual returns, requires enhanced support--the implications of expanding frontiers, broader institutional base, and reasonable infra-structural and running costs have to be met (para 5.32) . It calls for cooperation and collaboration between institutions of higher education, between them and research agencies mostly established by Government, and between them and the industry or the production sector in general. Links and networking are mentioned in the NPE in several places (paras 3.9 , 3.12, 5.32, 5.34, 6.14 and 8.3). The vast network of higher educational institutions undertaking great variety of research, some in cooperation, with others, and the enhanced funds to be made available for this activity, as also the necessity of maintaining unremitting , pressure for excellence, would require coordination, planning and evaluation under a well considered policy in order to optimise the results.* This leads to the question of a data base, and of "foresights" into future areas of thrust. Research in institutions of higher education should be a part of the national research effort and as the NPE states without any ambiguity an effort will have to be made to encourage the setting up of national research facilities within the higher education system , with proper forms of autonomous management. The "proper forms of autonomous management" are those which minimize the difficulties and enhance the benefits of being within the university system--in other words, adequate insularity from the local routines and pressures, particularly of associations and other vicissitudes of the particular university, combined with wider merit oriented academic interaction and participation in the pursuit of excellence.

The implication of the commitments contained in NPE which would lead to the tasks ahead , and to action points , may be briefly listed as follows:

A. RESEARCH AS AN INTEGRAL PART OF H.E.I'S.

- (1) Curriculum and methodologies of learning have to be vastly modified to bring in, particularly , elements of problem solving, creativity and relevance. This itself requires R&D dissemination , and large scale teacher orientation .
- (2) Build capability for research in more subjects and more institutions -- with a selective, but expanding base. This capability will be over and above the minimum facilities required for teaching. The infrastructure, and in particular instrumentation facilities must be strengthened, including a system of servicing and maintenance.
- (3) Change rules and procedures in management structure to give greater freedom to researchers -- devolution of authority

*This whole area is itself becoming a science.

accompanied by acceptance of responsibility and accountability.

- (4) Encourage teachers/scholars to undertake research, through facilitating study leave, participation in quality improvement programmes, organising institution of more seminars and helping in participation in them. As preparation to enter upon new areas of research participation in international seminars and in suitable cases, to work abroad to be facilitated.
- (5) Use, or continue to use research as one of the important criteria for recruitment as teacher, and for selection to higher posts. Use the parameter of research in institutional evaluation.
- (6) Set up Research Committees, at least in major university departments, parallel to Board of Studies for teaching activity. Faculty and university level research committees should be set up, to promote, (particularly inter-disciplinary research), to coordinate, keep a check on quality, and enlarge linkages in this sphere with other relevant agencies.

B. ENSURING HIGH QUALITY OF RESEARCH

Points 1 and 2 above apply in this case also, with emphasis on library, documentation and laboratory facilities. Computing, and other infrastructure must be provided, with assured maintenance as well as replacement of obsolete equipment.

- (7) A base of talent has to be built systematically. At undergraduate and postgraduate levels a proper talent search examination should result in awarding a large number of merit cum means scholarships; scholars should be assisted in getting admission to leading autonomous colleges and university departments receiving special support. Either some new colleges be established or some of the leading autonomous colleges be specially selected for achieving really first rate standards, particularly in science including mathematics, because in the present situation high level educational facilities, particularly in laboratory work, are rare. Adequately financed teacher training campus and summer/winter schools for the talented should be organised. A pool of visiting professors may be centrally funded which may be made use of by the universities and other Institutions part of which may be expatriate Indian scholars abroad who may be willing to spend time in India. Admission to research must also be based on merit determined by a common examination. Education and training of talent at the master's and Ph.D. level should be linked with the needs of specialisation and manpower demand. A field which must receive special attention is "applicable mathematics" since a large number of areas such as computer

and information sciences, social sciences and engineering sciences are rapidly coming up where application of mathematics has opened up new concepts and possibilities. Another field which is vital to research is that of instrumentation. Courses in instrumentation and creation of instrumentation facilities would have to be taken up on a significant level. Those who take the highest degree, should have a reasonable chance of being placed in certain jobs; this will encourage some of the best students to take up research careers. Research fellowships must provide at least 80% of the overall benefits that an employed person with the same initial qualifications gets. Junior Research Fellows should get 80% of what a scientist B in CSIR gets or would get on pay revision. A JRF should get proper accommodation or H.R.A., and medical facilities as available to other staff.

- (8) Supervision of research and periodic as well as terminal evaluation have to be made more rigorous. A proper record of work and progress should be maintained. The selection of research problems should be taken up most carefully and superficial or routine type of work should be avoided. Ph.D. Examiner's reports must be available in the UGC or corresponding organizations for confidential monitoring of the quality of the highest degree awarded by the institutions of higher education.
- (9) Special cadres for research may be created to undertake post doctoral work with degree of assurance about a research career. The selection may be made on an all-India basis and appointment may be on contract for 5 years. In the 5 yearly evaluation, if research contribution is found to be excellent, the researcher may be promoted to the next higher grade. The designation Research Scientist: grades A, B and C, has been used by the UGC. A similar system may be adopted by other organisations also.
- (10) Excellence and relevance go hand in hand. Therefore, linkages between ideas and problems, between researchers and users of the results of research are very important and they should be promoted and cultivated as spelt out in Section D below.
- (11) The import of equipment meant for research should be on open general licence, and only a certificate from the concerned institutions countersigned by the UGC/AICTE etc. should be enough to waive duty and permit import.

C. ENHANCED SUPPORT FOR RESEARCH

- (12) Systematic support indicated above would require funds, and new management structures. Today, hardly 10% of the departments/institutions are capable of doing research of reasonable quality -- some would put the percentage much

lower. In the first instance doubling of available funds should be the target with the VII Five Year Plan, to give a reasonable chance of planning a substantial research contribution. Funds for basic research, strategic research as well as applied (Project) research should be augmented. Assistance to centres of Advanced Study, and Deptts. of special assistance and other major centres should be increased. The agencies* should then confine their project support to areas of direct interest to them.

- (13) A data base on research in the institutions of higher education is a must for coordination and planning, as also to reduce waste, improve efficiency and generally to tone up the quality research. Today we have very inadequate information on such aspects as -- the cost of research, time taken for Ph.D. in different fields of institutions, facilities available -- and the quality of performance. A data base and its own network are necessary for planning and systematising the endeavour. Such a base should be with the Research Council visualised below.
- (14) In accordance with the NPE, an indirect but an extremely significant enhancement of research support is by creating cooperative research facilities, in high money consuming fields, within the system of h.e.i.s. Furthermore, national research facilities should be set up within the higher education system with proper autonomous management. There is a variety of management structures possible depending on the field and the scope of cooperation, and one must explore the possibilities before deciding to set up such facilities outside the system -- unless of course, other compelling reasons, such as security, come in the way.
- (15) Public sector and other industry, and research agencies should also be persuaded by the Government to set up at least some of their R&D activities on the campuses of the h.e.i.s. Campus labs established by CSIR or DRDO (in suitable fields) or by the Departments of Civil Aviation, or Information and Broadcasting, or again by ONGC or Fertilizer Corporation -- to mention a few examples -- would prove a shot in the arm for education and training, and it would perhaps also produce cost-effective results for the sponsors. Each major industrial organisation could also be encouraged to develop strong cooperation and links with one or two institutions so as to utilize them intensively or its R&D work.

*The word 'agencies' is used throughout for Government/autonomous Research organisations like CSIR, DAE, DRDO etc.

D. NETWORKING COLLABORATION, LINKAGES --
COORDINATION, POLICY, PLANNING

- (16) In view of the multiplicity of disciplines within the h.e.i's and corresponding multiplicity of research agencies, industries, or other "users" (those who are interested in the results of research, or with whom sharing of work would be mutually beneficial), and the geographical spread of the whole system, it is best to enlarge and deepen relationships between the diverse groups at all levels. Major university departments could have research committees, followed by faculty level Research Committees (smaller departments could skip the first) to promote interdisciplinary research within the institutions and cultivate linkages with neighbouring or relevant institutions. This would create possibilities of cooperation and sharing of ideas which may find application in the solution of problems encountered in the field or in the course of the work of the cooperating team. A suitably high powered committee (with powers like the Academic Council) at the level of the whole university should also be formed to develop linkages, coordinate work, remove bottlenecks and supervise the quality and relevance of research undertaken. Again, under the State Council of Higher Education, there should be a Board of Research, which would have a broad based membership and would join together the system of higher educational institutions in research with other agencies, industries, governments, departments etc. It would have links with the State Councils of S&T, and other state level academies and organizations. The network would thus spread over the whole country and involve a large number of outside researchers and agencies in the research of the universities on problems of significance to various sectors and regions. Where necessary, statutory changes may be brought about to enable such a network to be established.
- (17) The other side of collaboration and cooperation is to coordinate, plan, evaluate outcomes and lay down policies for the pursuit and funding of research within the system of the institutions of higher education. Backed up by a data base, a Research Council operating at the national level and (item 13) responsible for research within the university/h.e.i. system would be indispensable. The Council should be a part of the apex umbrella organization of the institutions of higher education and while it should be self-contained in its operation, it should make its inputs (in respect of data analysis, studies, policies, priorities, and guide lines in some cases) to the State Councils and their Research Boards, as also to the universities. In other words this Council should be responsible on behalf of the apex body to safeguard, pursue, and enlarge the interests of research in the institutions and its relevance to the nation. Its role will be coordination

of research among h.e.i.s, promotion of research and its linkages with research agencies and industry etc., planning for the future and evolving suitable policy on the various aspects of research. It would also oversee quality, maintain proper data, undertake analysis and make studies of the growth of research in the h.e.i.s. What is being proposed will lead to (i) linkages which would ensure that "user" and research agency needs are reflected in the university curricula, and thus better manpower is produced and (ii) a proximity of ideas with problems which have to be solved -- or a linkage between theory and the thinkers on the one hand and practice and practitioners on the other who have real problems to solve. Everyone is bound to be a gainer, and in such a situation research agencies and the users, providing a part of their resources to the universities, will only be helping themselves.

- (18) The concept of close collaboration and networking is linked at the human level with the concept of mobility. There is already a provision that an employee working under one central government agency would have his service benefits transferred to another similar agency or an autonomous body fully funded by the central government if he is selected for a job there.

The NPE imperatives indicate that in the first instance each State should have a similar provision, and then there should be a provision of transfer of benefits between the states and the Centre. Short term assignments, for 3 to 6 months should be facilitated between h.e.i.s, research agencies and Industry by making it mandatory for each to allow about 1 % of its staff to spend 3 to 6 months with another approved agency. Travel and adequate displacement benefits should be available, including free furnished guest house accommodation at the host institution. Suitable designations, like special or adjunct professors in universities, and Visiting Specialist in research agencies or industry can be given to such people. Unless these modalities are consciously induced, they are unlikely to take place. The apex organisation in higher education could set up a broad based Board to "distribute" such transfers.

- (19) In connection with coordination and planning in the sphere of research, the question of priorities inevitably arises -- but they are very difficult to determine. In one of its dimensions the concept is close to that of technology watching and forecasting -- but indeed, the whole question of what areas of research to take up in order to derive maximum social and economic benefit in future is very challenging. All advanced countries are engaged in probing this field by different methodologies and studies are available from the USA, Japan, France, U.K. etc. It is time that the Research Council should set up a cell with a few experts to go into this area -- they could farm out

projects to other institutions, and may be given 3 years to come out with their first set of studies. The studies should then be widely distributed to test their validity and plan further developing of this work.

SECTION III

ACTION POINTS AND TIME FRAME

- (1)* In regard to new approaches to curriculum design, development of new learning methodologies, particularly for introducing creativity and relevance to society, and to take up research and development in this area:
- (i) University Grants Commission/All India Council of Technical Education and other similar bodies will initiate a scheme to set up curriculum development cells in the institutions, and support publication of journals in this field for wider dissemination of knowledge and awareness.
 - (ii) The International Centre of Science and Technology Education would establish activities in this field utilizing the network of h.e.i.s. It would enter into memoranda of understanding with the UGC/AICTE and other agencies, and with institutions so that proper exchange of experience takes place, facilities are shared and also practical use is made of the ideas and material evolved.
2. This will be done within 1986-87.
- (i) To build selectively but also enlarge the number of institutions with some research infrastructure, the apex bodies like the UGC/AICTE will be advised to take stock of the existing situation in the institutions/departments, and work out a phased scheme of development. This basic infrastructure including adequate support for instrumentation facilities and laboratory will have to be over and above the minimum facilities for teaching activities and observance of proper standards. Maintenance and running expenses will be raised and institutions required to report annually on the maintenance of major equipment/facilities.
 - (ii) In addition, this general base of research, the programmes of CAS/DSA etc. will be expanded and more funds will have to be provided for them. Support to areas of emerging technologies and to mathematics will be enhanced.

*The numbering in this Chapter is correlated to the numbering in the previous Chapter.

- (iii) COSIST type programme would be made applicable throughout the educational system for the strengthening infrastructure for science and technology in institutions and departments which have already displayed a high level of S&T performance and leadership in their fields.

The phased scheme of development will be drawn up by the end of 87-88, but actual inputs could be made simultaneously.

- (3) Rules and procedures at every level are not always helpful in going about research speedily. They will be reviewed from the apex level down to institutional and departmental level. Revised rules with greater devolution of authority, and consequent assumption of accountability will be drawn up at each level and changes in regulations made accordingly. The apex bodies will take steps for immediate consideration of this question in consultation with the institutions.

This will be started within 1986-87 and revised procedures established within two years.

- (4) Provision of greater opportunity for teachers to undertake research will be made by the apex bodies through instituting more and better designed seminars, summer schools, and by having facilitating rules adopted by institutions. Instructional seminars in frontier areas of research, with participation of outstanding resource persons from India and abroad will be arranged in more areas more frequently. Exposure of teachers and scholars to work in leading institutions abroad will be provided for.

The apex agencies will be advised in this regard, and these are expected to take suitable steps very soon.

- (5) Research will be used as an important parameter of the performance criteria of teachers (teaching and related responsibilities, and extension being other important parameter) as well as institutions. Institutional performance must relate to the overall objectives of the institutions, and this being a many sided problem, the criteria will have to be carefully designed by the apex bodies like the UGC/AICTE etc.

The apex bodies will be asked by the Ministry of HRD to develop suitable criteria for individual and institutional performance, within 1986-87.

- (6) The setting up of Research Committees at various levels in the institutions to promote inter-disciplinary research, to enlarge linkages with other agencies and users, and to oversee facilities and performance will be recommended to the institutions and the matter pursued. If necessary statutory changes will be made.

The apex bodies will address the institutions immediately and press for the setting up of these committees by the end of 1986-87.

- (7) The UGC will be asked to examine and if possible institute talent search examinations and scholarships at the undergraduate and postgraduate level in subjects which are crucial for national development, for example science including mathematics, instrumentation, or economics and sociology etc., or which are of cultural importance, like fine arts, archaeology etc.,. Admission to research will be based on merit determined by a common all-India examination, which must eventually include research aptitude as an element. Research fellowship will be periodically revised in order to keep the emoluments reasonable and attractive. Married scholars' hostels will be provided in some institutions, to begin with.

The Ministry of HRD will ask the apex bodies, to develop coordinated policy in this direction, immediately i.e. within 1986-87. National Testing Service is to be set up, and it would help in talent search processes.

- (8) Monitoring of the quality of research and strengthening of scholar-supervisor interaction in order to achieve more effective utilization of time and facilities are important and the Research Council proposed will devise a suitable system of data/information based review of performance -- not only at the end but also in the course of research.

The UGC has already taken some steps in this direction. The observance of UGC guidelines in this respect will be ensured, immediately. Other concerned apex bodies would be asked to take similar steps in 1986-87.

- (9) The Research Scientist scheme of the UGC which is intended to grow/promote research as a career in the universities, and is based on central rigorous selection followed by contract appointments and periodic reviews, should be expanded to other type of institutions also.

The Ministry of HRD will ask the apex agencies of h.e.i's to take immediate steps in this direction.

- (10) is linked with the network concept taken up under point 16 below.
- (11) The open general licence (OGL) facilities should be available to h.e.i's in connection with their research activities. This will expedite work.

The Ministry of HRD will take up the matter with the Ministry of Finance in 1986-87.

- (12) Augmentation of funds for research and the mechanics of dispensation are taken up in the next Chapter on 'Financing'.
- (13) The data base for research is important for policy formulation and planning and also to monitor performance, and eventually get an idea of cost-effectiveness. The data base and its infrastructure will be under the Research Council; collection of information, analysis and preparing background papers will be part of its activity. This data base will provide/seek information and support to/from the national R&D data base.

Initial action in this regard will be taken by the Ministry of HRD, in consultation with the UGC/AICTE. The data base will begin its function, after the preparatory work, from 1987-88, and will become fully functional from 1988-89.

- (14) National research facilities should be set up within the university system and proper autonomous management structure should be worked out for them. Only if this is considered infeasible in particular cases, should such facilities be set up elsewhere. Even in this case, the researchers in the educational field should be involved in planning, taking decisions about execution and management, and of course using the facilities as equal partners. Decisions in this regard should be taken by government, in consultation with the Research Council.

The Policy will be observed. The Ministry of HRD will bring it to the notice of all concerned in 1986-87.

- (15) In order to provide major research facilities to the higher education system, S&T agencies would be encouraged to set up such facilities within the higher education system. The university system itself may set up common facilities in certain areas. The management of such facilities would however not be limited to the institute of its location and would be a participatory autonomous system.

The agencies would be advised by the Ministry of HRD in 1986-87 to set up such facilities. The pattern of appropriate autonomous management would be evolved in each case.

- (16) State Councils for Higher Education which are visualised partly as a coordinating and planning forum for the whole State should also have a State Research Board for institutions of higher education to link institutional research with that in the research agencies and with research needs of the whole of the region. A real broad based participation should be effected in order that problems and capabilities can be matched. Where necessary, statutory changes and central support for seeding the activities can be envisaged. State Research Boards will have participation

from representatives of the Research Council and the State S&T Councils as also other state level academies. Each of these Boards will make an annual report to the Research council.

(A separate Task Force is considering the matter of State Councils for Higher Education).

MHRD will convey these recommendations to the State Governments and monitor with a view to getting these Research Boards established within the next two years.

- (16)(1) The linkage should have other forms of involvement as well. Participation of universities and higher educational institutions in the national missions must be ensured. The UGC, AICTE, ICMR, ICAR and the Department of Education must set up Task Forces corresponding to the missions (jointly if feasible in order to participate effectively in the missions.

Task Forces around selected thrust areas will be set up on the advice of the Ministry of HRD.

- (ii) Institutions should have an appropriately high powered Board of Research and a Board of Extension. The Board of Research may not merely look at admission to Ph.D., appointment of examiners, and receiving their reports but it should promote inter-disciplinary linkages within the institutions and sharing of facilities; it should oversee the quality of research, monitor the output and help bring about conditions for the raising of quality, relevance of research, and source of funding. External linkages should also be developed by the Board and the Membership should be drawn partly from outside the institutions - from research agencies, industry, other productive enterprises and eminent professionals. This would allow more significant regional, social, economic and technical problems to be tackled by the institutions.

The parent agencies concerned with institutions will be advised by MHRD/RC to set up the Boards of Research and Extensions. Where necessary statutory changes will be brought about by the Institutions/Government.

To be completed by 1987-88.

- (iii) It would be desirable if major public sector industries develop special and intensive relationships with one or a few institutions each to serve their R&D needs. Both sides will define the nature of inter-action, the specific tasks to be undertaken and each others roles and responsibilities in such a relationship.

Government would ask Central/State Public Sector Undertakings to identify educational organisations for such a relationship. They would be required to back up this relationship with adequate organisational, infrastructural and financial resources.

- (iv) Adequate overheads for research will be provided to educational institutions. These could range between 10 to 50% of the project depending on the nature of the project. A minimum beginning could be made with 10 to 15% of the total cost of the project as overhead cost.

Separate provision should be made for spares, consumables and replacement of short-lived equipment. Institutions will be expected to enter into service and maintenance contract for each major piece of equipment and this cost would be an admissible item under equipment provision.

Funding agencies will be so advised.

- (17) A research council will be set up at the national level to cover all institutions of higher education whether in the university system or in technical/medical/agricultural system. Its main purpose will be to coordinate, provide overall view of research, monitor its progress through a proper information base, lay down policy and priorities, suggest means of mobilising greater funds for the education sector, and provide funding guidelines to participating agencies. In addition it may need to take up funding role of certain common or collaborative activities as well as research areas which are considered important by it in the fulfilment of its responsibilities. The composition would include besides leading academics from h.e.i's, leading scholars from other agencies, representatives of industry/user/financing institutions. The council would be supported by a technical secretariat of its own in order that it can fulfil its role effectively and have infrastructure and data base for monitoring the activities. The Council will be under the apex body for higher education.

Ministry of HRD will take steps to set up a national Research Council in consultation with various main bodies of higher education, scientific and technological agencies and user agencies. The UGC may oversee the Research Council until the apex body for higher education is set up.

The process of setting up may be initiated in 1986-87 and the Council will be set up and made operational by 1987-88.

- (18) Networking will be greatly strengthened by the provision that academic personnel from higher educational institutions will be provided facilities to move among academic institutions and from them to research agencies. For the reverse flow also there should be adequate opportunities.

Government will set up a system of transferring service and other benefits with prompt mobility. Movement from industry to educational institutions will also be encouraged on well defined terms. A number of special/adjunct professorships will be created for this purpose and a national or regional mechanism of selection will be set up. Facilities relating to education of the children and housing in particular would be provided to facilitate this mobility. For short term assignments h.e.i's as well as research agencies and industry will be required to allow/arrange for 1% of their staff every year to spend 3 to 6 months in other types of institutions. Proper facilities will be provided for such secondments.

- (i) The institutions and industry would be asked to earmark slots for people from other institutions and system.
- (ii) Public sector undertakings and institutions will be obligated to send a specified minimum number of people to other institutions.
- (iii) A portion of the housing facilities in each organisation would be set aside for the purpose.

The system would become operational within the VII Five Year Plan.

- (19) It is necessary to set up a National System for Technology assessment and forecasting. This will prepare profiles for future thrust of R&D activities. This system will have to be sufficiently extensive to cover all areas of technology and would also disseminate information on a regular basis to all concerned. In addition the proposed Research council should set up a group of experts to go into the area of developing foresight from the point of view of S&T potentialities on the one hand and demands of the market/defence or other national programmes and needs on the other. Knowhow and methodology for this kind of work will have to be developed.
 - (i) It is understood a separate group is working out the details of a National System for Technology Forecasting. Their recommendations would provide clues to further action to be taken by the Ministry of HRD and other agencies.
 - (ii) Some study groups will be set up in centres of advanced study or otherwise well endowed centres to develop future profiles of S&T activity.

SECTION IV

FINANCING

I. The Policy states that research in the universities will be provided and enhanced support and steps will be taken to ensure its quality. It asserts that the Government and the community in general will find funds for such programmes as, among others, are necessary for generating knowledge and developing technologies in scientific fields crucial to self-sustained economic development. According to the Technology Policy also, research and development together with sciences and technology education and training of a high order will be accorded pride of place... Basic research and building of centres of excellence will be encouraged.

It is however observed that the expenditure on research and development in India is less than 1 per cent (0.85%) of GNP as against 2-3 per cent of the GNP devoted to research and development in most of the developing countries. Some developed countries spend as much as 6% of their GNP on R&D. Another way of looking at this is the expenditure on R&D in higher education sector expressed as percentage of total national expenditure on R&D, among different countries. This varies from a level of close to 30% in some developed countries and around 15% in other developed countries. In a way, with greater role of S&T in modern industry, including defence industry, the percentage tends to rise. The corresponding figure for India in the same period is much lower. Precise figures are not available, and there is always a difference of opinion regarding how these percentages ought to be calculated but it may be around 5 or at the most 6%. However, there is no difference of opinion about the need for the education sector receiving a much higher proportion of the allocations made for R&D activities in the scientific and socio-economic sectors.

Each S&T agency/R&D organisation would be asked to specially earmark a separate budget for R&D. This budget must be spent on R&D functions and should be non-divertible. Each agency must allocate a certain minimum of its R&D budget for the promotion and/or support of research and related activities in educational institutions. Immediately, these agencies should ensure that not less than 7 per cent of their S&T budget provision is assigned to educational institutions: this percentage should be progressively increased to 10% in the 8th Plan to reach a level of 15 per cent of the S&T budget by the year 2000. In addition, the agency concerned will continue to sponsor, sanction and support projects/programmes related to its own objectives and monitor their progress in accordance with the sectoral perspective and current practices. The implementation of these projects and programmes will be modulated for optimum performance within the education sector by the Research

Council which is being recommended elsewhere in this Report as a high level coordinating agency.

2. Within the education sector, there is an urgent need to strengthen the infrastructure and research capabilities in a large number of institutions/departments and, at the same time, to support R&D work in institutions that have already established necessary capabilities in certain areas. This would also help to widen the technology base as envisaged in the Technology Policy and to raise quality and standards of higher education as stressed in the Education Policy. There are about 2000 University Departments/post-graduate science colleges, engineering colleges and technological institutes: majority of them are presently at sub-critical threshold level of their potential. Between 5 to 10 per cent of them alone have any mentionable capability of research. By providing the essential minimum inputs to these institutions, it will be possible to accelerate the process of their development in desired directions, to increase and improve their research output and make a qualitative difference to the highly trained manpower that the same agencies draw upon. This has to be done on a selective basis, examining the needs and potential institutions by institution; at the same time expansion of the base must also take place. Such an assessment of needs and potential should be taken up immediately to cover all deserving institutions and a profile of development of each of them formulated.

In short term, i.e. by the end of the Seventh Plan period in 1990, at least two or three times the present number of institutions/departments including universities, Institutes of Technology and Regional Engineering Colleges should be funded on a substantial level to be able to undertake an adequate level of R&D activity. This number must be increased in successive Plan periods. Provisions should also take care of the need to guard against obsolescence in, and to ensure continuous maintenance and modernisation of infrastructural facilities.

3. In regard to the promotion of research activities in educational institutions, measures taken so far have been limited. Programmes of quality improvement of research under the Seventh Plan of the UGC cover several measures of institutional support, shared facilities and project support, but the financial resources allocation is hardly Rs. 75 crores for a 5-year period to take care of a large number of institutions. It has also not been possible to develop common service facilities in all disciplines and geographical areas.

It is necessary that not less than 30% of the Central Plan allocation for higher education is earmarked for supporting research work by educational institutions which already have the necessary basic capabilities, particularly the necessary manpower resources.

4. Even after making provision for infrastructural development

in educational institutions and for sponsoring R&D projects by the scientific agencies, there is need to make marginal investments of a complementary nature so that the institutions are enabled to avail themselves of the sponsored R&D funds. Acquisition of certain accessories and/or minor additions to existing facilities or buildings become vital in this connection. In some cases, the need may be for some short training courses or manpower development, in some others, it may be for addition of books and/or back number of journals. These go a long way to strengthen the collaboration between the educational institutions and the S&T system of which they are a part. A beginning has been made for this purpose under the COSIST programme: its scope and coverage needs to be expanded and extended to cover all deserving institutions including agricultural universities, engineering colleges, institutes of social science research and special categories of institutions on higher learning.

In short term, a minimum provision for each year during the Seventh Plan is needed over and above the provision for general improvement of the research facilities indicated earlier. In the long term, the COSIST programme will develop into one of the instruments available to the Research Council to integrate R&D activities within the education sector in more meaningful manner.

The Existing R&D activities and bases (Centres of Advanced Study/Departments of special assistance etc.) will need to be strengthened. In order to augment financial resources for this programme/purpose and, at the same time, to foster the totally integrated approach to R&D activities envisaged in this report, the possibility of setting up a National Research support Fund (NRSF) with its corpus being raised through grants, donations and contributions made by several agencies including private industry may be explored. The Research Council, with its infrastructure, data base, and capability of supporting major universities or national facilities and work connected with thrust areas or mission, would need suitable funding .

SECTION V

MONITORING AND EVALUATION MECHANISMS

1. An information system for research and development suggested earlier would constitute an important instrument for integrated planning, effective implementation and responsive management of the R&D system. Based on this, there should be a mechanism for continuous monitoring. This should be set up within the Research Council so that the sights, thrust/missions and resource allocations for the R&D activities in the education sector are coordi-

nated into a vibrant system. It would also help to ensure that the R&D projects and programmes sponsored by the various S&T agencies, socio-economic sectors etc., (and related to their own objectives) which would have been conceptualised and delineated according to the agencies' perspectives and perceptions, are meaningfully operationalised and implemented as an integral part of the R&D function of the education system. As stated elsewhere in the report, the sponsoring agencies will, no doubt, continue to monitor their projects and programmes with regard to their own programme objectives and parameters. There may be need to supplement their efforts to correspond to the monitoring mechanism under the Research Council with nodal units in the concerned parent Ministries at the Central and State Levels, and in individual institutions for monitoring. Each level would feed information to the higher level to enable the level above to take a broader view about how the system is functioning and introducing concurrent corrective measures. The identification of parameters for monitoring and the design of monitoring system will be undertaken by the specialised agencies such as UGC, ICSSR, ICAR and AICTE.

2. Formative and summative evaluation at fixed frequencies, will be undertaken to appraise the National Council for Education and the information thus generated will be used by agencies and institutions for alteration in tasks, targets procedure and activity sequences.

3. The system of monitoring would be built into the operation structure right from its initiation.

XII. EDUCATION FOR WOMEN'S EQUALITY

THE PRESENT SITUATION

1. Provision of educational opportunities to women has been an important programme in the education sector since independence. Between 1951 and 1981, the percentage of literacy amongst women improved from 7.93 per cent to 24.82 per cent. However, in absolute numbers, illiterate women have increased during this period from 158.7 million to 241.7 million (excluding Assam). Women comprise 57 per cent of the illiterate population and 70 per cent of the non-enrolled children of school stage are girls. In spite of the efforts made so far, the education system has not been able to make sufficient contribution towards women's equality.

TARGETS

- (a) a phased time-bound programme of elementary education for girls, particularly upto the primary stage by 1990, and upto the elementary stage by 1995.
- (b) A phased time-bound programme of adult education for women in the age group 15-35 (whose number is estimated to be 6.8 crores) by 1995.
- (c) Increased women's access to vocational, technical, professional education and to existing and emergent technologies.
- (d) Review and reorganisation of the educational activities to ensure that it makes a substantial contribution towards women's equality, and creation of appropriate cells/units therefor.

POLICY PARAMETERS AND STRATEGIES

3. The National Policy on Education (NPE) envisages that education would be used as a strategy for achieving a basic change in the status of women. The National education system would (i) play a positive interventionist role in the empowerment of women, (ii) contribute towards development of new values through redesigned curricula and text-books, and (iii) women's studies will be promoted as part of various courses. The main features of the targets and implementation strategy will consist of the following:-

- (i) to gear the entire education system to play a positive interventionist role in the empowerment of women;
- (ii) to promote women's studies as a part of various courses and encouragement to educational institutions to take up

active programme to further women's development;

- (iii) to widen the access of women in programmes of vocational, technical and professional education;
- (iv) to create dynamic managerial structure to cope with the targets envisaged.

STRATEGY ENUNCIATION AND PROGRAMME OF ACTION

EMPOWERMENT OF WOMEN

4. Women become empowered through collective reflection and decision making. The parameters of empowerment are:

- building a positive self-image and self-confidence;
- developing ability to think critically;
- building up group cohesion and fostering decision-making and action;
- ensuring equal participation in the process of bringing about social change;
- encouraging group action in order to bring about change in the society;
- providing the wherewithal for economic independence.

5. The following measures will be taken for the achievement of the above parameters:

- (a) Every educational institution should, by 1995, take up active programmes of women's development built around a study and awareness of the women's predicament and for promotion of communication and organisation among women.
- (b) All teachers and Non-Formal Education/Adult Education (NFE/AE) instructors should be trained as agents of women's empowerment. Special training programmes will be developed by NCERT, NIEPA, Directorate of Adult Education (DAE), SCERTs, State Resource Centres (SRCs) and UGC to incorporate in all training programmes of teachers and NFE/AE instructors elements which would motivate them to work for women's empowerment. Voluntary agencies and activist groups for women's development will be involved in these training programmes.
- (c) Women teachers and women instructors in adult/non-formal education programmes should receive special orientation to enable them to play an activist role towards women's equality.

- (d) Special programmes should be developed by research institutions, voluntary institutions and professional groups of artists to promote general awareness and self-image amongst women through a variety of programmes like discussions, street plays, skits, wall papers, puppet shows etc.
- (e) An environment should be created in which practically all sections of the society will commit themselves and work for achieving this objective enunciated in the National Policy on Education. Keeping in view the important role played by media in this sphere, clear policy guidelines should be developed by radio and TV in 1986-87 and measures taken to persuade films and other media on these lines.
- (f) Preference in recruitment of teachers upto school level should be for women. This will create a greater confidence in the rural areas and motivate the parents to send girls to the school.
- (g) The common core curriculum is a powerful instrument for the empowerment of women through the incorporation of values commensurate with the new status of women. The Women's Cell in the NCERT will be revived and given the responsibility for preparing the component of the core curriculum relating to women's equality. The Cell should also accelerate its work of eliminating sexist bias and sex stereo-types from school text-books. The Women's Cell of NCERT should take active help of all persons on playing its assigned role.
- (h) Sensitisation of teachers, trainers, planners and administrators to women's issues will be taken up as a major programme by NIEPA and appropriate State level agencies, through initial training, in-service training and refresher courses. NIEPA should also have a strong cell for planning and execution of these programmes.

WOMEN STUDIES

6. Women's studies programme has 4 dimensions--teaching, research, training and extension. In teaching, the following activities will be taken up:

- (i) Incorporation of issues relating to women's status and role in the foundation course proposed to be introduced by University Grants Commission for all undergraduate students;
- (ii) Incorporation of the women's dimension into courses in different disciplines;
- (iii) Elimination of sexist bias and sex stereo-types from text-books.

7. Under research, the following steps will be taken:
- (i) Encouraging research on identified areas and subjects which are crucial in advancing knowledge in this area and to expand the information base;
 - (ii) Critical appraisal of existing tools and techniques which have been responsible for the disadvantages suffered by them and where necessary reformation of research methodology.
8. The following measures will be taken under training:
- (i) Dissemination of information and interaction through seminars/workshops on the need for Women's Studies and its role in University education;
 - (ii) Orientation of teachers and researchers to handle women-related topics and to incorporate women's dimension into general topics;
 - (iii) Workshops for restructuring the curriculum.
9. Under extension, it is proposed to encourage educational institutions to take up Programmes which directly benefit the community and bring about the empowerment of women.
10. These would include actual implementation of development programmes directly aimed at women's empowerment such as adult education, awareness building, legal literacy, informational and training support for socio-economic programmes of women's development, media, etc.

UNIVERSALISATION OF ELEMENTARY EDUCATION AND ADULT EDUCATION

11. The present programme of non-formal centres for girls on 90:10 pattern will be extended to all educationally backward pockets of the country. NFE Centres should be community based. Responsibility of planning, selection of instructors and monitoring should be with the community including parents. Increased assistance to voluntary agencies to run nonformal education centres for girls should be given.
12. In the rural areas, girls are kept busy at home in sibling and household care, in fetching fuel, fodder and water, or in earning a day's wage. Therefore, special support services referred to in the Policy need to cover all these areas upto 1995. Early childhood education centres are important support service in increasing enrolment and retention of girls in schools. Programmes of social forestry, drinking water supply, mid-day meals, and other nutrition programmes, smokeless chullahs and other devices aimed at eliminating drudgery from women's lives should be formulated by the Ministry and organisation concerned upto 1990 to converge with the objective of universal-

sation of education.

13. Skill development linked to employment or work opportunities in the villages or local areas are required to be given overriding priority so that there is an incentive on the part of the parents to educate the girls.

14. Mass scale adult education programme for women in the age group 15-35 should be developed to eradicate illiteracy amongst women by 1995. As majority of women in this age group are workers literacy per se may not have any relevance for them. It is, therefore, necessary to develop adult education programmes for women linked with upgradation of their skills and income generating activities.

15. Skill development for girls and women should be continuous process of learning starting from the NFE centres and AE centres. Continuing Education Centres should be set up in a phased manner which should organise vocational training, provide opportunities for retention of literacy skills and application of this learning for improving their living conditions.

16. The skill development given by the Continuing Education Centres will be supported by other programmes of nonformal, vocational training and skill development to be administered by a variety of organisations and institutions, such as Polytechnics, Community Polytechnics, ITIs, Shramik Vidyapeeths, Central Social Welfare Board, State Social Welfare Advisory Boards, Voluntary agencies, Krishi Vigyan Kendras, Women's Centres in Agricultural and Home Science Colleges as part of their extension activities. Besides, industries which employ women should themselves run non-formal vocational training courses. For effective learning and monitoring Women's Bureau is to be set up in the Department of Education.

WOMEN'S ACCESS TO VOCATIONAL, TECHNICAL AND PROFESSIONAL EDUCATION AND TO EXISTING AND EMERGENT TECHNOLOGIES:

17. At each stage in school education; or a part of work experience or vocationalisation, girls should be exposed to a variety of vocational training activities. The method of vocational training should be both through the formal and non-formal courses. The choice of skills to be taught will depend on the natural resources, traditional occupations and new activities being taken up through government and private investment.

18. There are 104 ITIs functioning exclusively for women and 97 wings in general ITIs reserved for women. It is proposed that these institutions be revamped during the period 1987-90 on the following lines:

- (i) Diversification of trades and courses, will be done, keeping the job potential of the area in mind. There will be an efficient placement system which will enable the

institutions to have continuous dialogue with employers. The idea behind this diversification is that while girls will continue to receive preferential treatment in trades/occupations, for which they are particularly well suited (eg. teaching and nursing), this will not become a barrier for their participation in technical and professional courses of higher level and equal opportunities will be provided for them in all vocational, technical and professional courses.

- (ii) There will be a strong element of vocational counselling in each ITI/RVTI/NVTI, polytechnics, suitable orientation should also be provided in the schools as preparation for motivating the girls to choose non-traditional courses.
- (iii) Information about credit, banking, entrepreneurial development etc. will be provided by the ITI/NVTI/RVTI/Polytechnics and community polytechnics alongwith practical on-the-job training. The implementation of the apprenticeship scheme will be strengthened to increase the coverage of women.
- (iv) In order to substantially enlarge the opportunities to women for craftsmen's training, shift system will be introduced in existing ITIs-one in the morning and the other in the afternoon.
- (v) DGE&T office should have a separate Directorate of Women's Vocational Training.
- (vi) The women's access to technical education will be improved qualitatively and quantitatively. The choice of trades/disciplines offered to women at Certificate/Diploma/Degree levels in all types of technical education institutions, will be made keeping in view the objective of bringing about women's equality. Necessary incentives, as spelt out in the section of Technical Education will be provided.

MANAGEMENT STRUCTURE AT CENTRE AND STATE LEVEL

19. The interventions and programmes referred to above will be planned, coordinated, monitored and evaluated continuously both at the national and state level. Each of the organisations responsible for the programme will have to be strengthened. The Women's Cell in the NCERT will be revived and strengthened. NIEPA and Directorate of Adult Education will have strong cells to plan and administer Women's training programmes. The Women's Cell in the UGC will be strengthened in order to monitor the implementation of various programmes at higher education level.

20. At the State level, Women's Cell should be set up in all the States with adequate supporting staff to be headed by an officer of at least Joint Director's status.

XIII. EDUCATION OF SC/ST AND OTHER BACKWARD SECTIONS

THE PRESENT SITUATION

1. The All India literacy rates of Scheduled Castes/Scheduled Tribes are 21.38 and 16.35 per cent respectively as against 41.20 of non-SC/ST population according to 1981 census. The literacy rates of women for the above categories are 10.93, 8.04 and 29.43 per cent respectively. The proportion of enrolment of SC/ST children continues to be much less than their population proportion and the drop-out rate continues to be very high at all levels of education; the problem is more severe in case of girls of these communities. The situation calls for systematic efforts directed towards the educational development of SC/ST.

THE POLICY, TARGETS AND IMPLICATIONS FOR STRATEGY

2. The Central focus in educational development of SC/ST is their equalisation with the non-SC/ST population at all stages and levels of education.

3. To this end, cent per cent enrolment of SC/ST children in the age group 6-11 (classes I-V), ensuring their retention in school leading to satisfactory completion of the primary stage of education or its equivalent through the non-formal stream has to be achieved by 1990. This would mean enrolling approximately 15.5 million SC children and 7.5 million ST children in the age group 6-11 by 1990.

4. At least 75 per cent of the children in the age group 11-14 (classes VI-VIII) will have to be enrolled and retained in school leading to satisfactory completion of class VIII to achieve the policy goals envisaged in the NPE.

5. The operational strategy for achieving the above goals and the targets for implementation will be as follows:

- (a) Incentive to indigent families to send their children to school regularly till they reach the age of 14.

To provide incentive/assistance to indigent SC/ST families, details of a scheme of incentive will be worked out in consultation with the State Governments.

- (i) To ensure timely payment of pre-matric. scholarships funded entirely and administered by the state governments (except the centrally sponsored schemes for children of families engaged in the so-called "unclean" occupations which is funded by the centre and the state governments on 50:50 sharing basis), the

amounts of continuing scholarships should be released by the first of the month to which it relates. To avoid delays new scholarships will be sanctioned on the basis of sole affidavit furnished by the parents of the candidate.

- (ii) A single nodal agency will be identified for disbursement of scholarships. State Governments will be requested to draw plans within a month to work out details of disbursement and ensure prompt payment.
 - (iii) Payment through banks, post offices or other agencies like DRDA, SC/ST corporations will also be explored.
 - (iv) Rates and amount of scholarships will be raised to make them adequate from the point of view of helping to ensure universal enrolment of SC/ST children.
 - (v) The coverage will be cent per cent of all eligible SC/ST children.
 - (vi) Measures to ensure prompt payment of post-matric scholarships provided by the Government of India (Ministry of Welfare) will be introduced along the lines as mentioned above for the pre-matric scholarships.
 - (vii) The financial estimates in respect of post-matric scholarships will be worked out after final decision is taken by the High Level Committee set up by the Ministry of Welfare for revision of rates of scholarships.
 - (viii) In respect of the scheme of incentives like provision of uniforms, books, stationery, etc., detailed financial estimates will be worked out by the State Governments and implemented effectively.
- b) Pre-matric scholarships for children of families engaged in occupations like scavenging, flaying and tanning.
- (i) The Ministry of Welfare will take necessary steps to extend the scheme to all children from class I onwards from the beginning of the academic year 1986-87, instead of limiting it as at present to students of classes VI-X; the income ceiling shall be abolished.
 - (ii) Benefits under the scheme will also be extended to cover day scholars.
- c) Constant micro-planning and verification will be done to ensure that enrolment, retention and successful completion of courses by SC/ST students do not fall at any stage.

- (1) Micro-planning will include formulation of detailed village and block level plans within an identified time-frame; mapping of education infrastructure and removal of deficiencies; extension approach at the village level to persuade parents to send the children to school, with the involvement of teachers, parents, local leaders, social workers, etc., and provision of remedial coaching at all stages and special remedial coaching for classes IX-XII for preparing SC/ST children for professional courses.
- d) Recruitment of teachers from SC/STs.
- (1) A crash programme for recruitment of teachers from among SC/ST will be undertaken to remove existing gaps and to equip all single teacher schools. Educational qualification, especially for women teachers should be relaxed. Adequate provision will be made for continuing education of teachers recruited and to ensure their professional upgradation. The crash programme is proposed to be commenced from the Academic year 1986-87.
- e) Provision of hostel facilities for SC/ST at district headquarters.
- (1) A phased programme will be undertaken to ensure that all district headquarters which do not have SC/ST hostels are provided with such facilities in 1986-87.
 - (ii) The Ministry of Welfare will take up this scheme under a centrally sponsored programme.
- f) Location of school buildings, balwadis and adult education centres in scheduled castes bastis/mohallas and tribal villages.
- (1) Priority will be given to locate these institutions in SC bastis and mohalls in tribal villages/hamlets.
- g) Utilisation of NREP, RLEGP resources to provide educational facilities for SC/ST.
- (1) After identifying gaps in infrastructure an accelerated programme will be drawn up to develop educational institutions in SC bastis and tribal villages with funds to be made available from NREP/RLEGP.
- h) Content and value orientation of the curricula in respect of Scheduled Tribes.
- (1) Preparation of primers for classes I and II in respect of tribal languages having more than 1 lakh speakers should be completed by the end of the VII Plan.

(ii) The centre and the state governments will constitute committees at appropriate levels to review the contents of the existing curricula to ensure that caste and other prejudices do not come in the way of integration leading to establishment of an egalitarian society.

i) Educationally backward areas.

(i) Existing gaps in educational infrastructure in remote and inaccessible areas, islands, hills and desert areas will be identified during 1986-87 and plans for implementation to remove the backlog will be undertaken during the remaining years of the VII plan.

j) Other educationally backward sections.

(i) Measures will be further strengthened to ensure that incentives in the form of scholarships, uniforms, books and stationery, etc. reach the clientele groups.

(ii) Priority will be given to the special needs of nomadic, semi-nomadic and denotified communities.

ORGANIZATION AND MANAGEMENT OF PROGRAMMES

4. Detailed guidelines for monitoring will be evolved at the central and state levels to ensure qualitative implementation of the programmes; standards to achieve optimal efficiency in implementation, will be laid down; consistent with the autonomy of the implementing agencies norms of accountability shall be defined at all levels:

7. A single nodal agency for coordination of all programmes leading to the development of SC/ST and other backward sections may be developed at the central and state levels. It is suggested that a Standing Committee of the CABE under the Chairmanship of Minister HRD may be constituted to monitor and review implementation of all educational programmes for SC/ST and other educationally backward sections at the Central level. A similar committee under the State Advisory Board of Education may be constituted at the state level.

8. In addition to an in-built mechanism for continuous evaluation of programmes, evaluation of important schemes like scholarships, hostels and the proposed incentive scheme may be undertaken by external agencies.

XIV. MINORITIES EDUCATION

PRESENT SITUATION

Articles 29 and 30 guarantee the right of minorities to conserve the language, script and culture and to establish and administer educational institutions of their choice whether based on religion or language. So far as linguistic minorities are concerned the following constitutional guarantees have been provided which are in addition to articles relating to fundamental rights in part III of the Constitution:-

- (i) Article 29. Protection of interests of minorities.
 - (a) Any section of the citizens residing in the territory of India or any part thereof having a distinct language, script or culture of its own shall have the right to conserve the same.
 - (b) No citizen shall be denied admission into any educational institution maintained by the State or receiving aid out of State funds on grounds only of religion, race, caste, language or any of them.
- (ii) Article 30. Right of Minorities to establish and administer educational institutions.
 - (a) All minorities, whether based on religion or language, shall have the right to establish and administer educational institutions of their choice.
 - (b) The State shall not in granting aid to educational institutions, discriminate against any educational institution on the ground that it is under the management of minority, whether based on religion or language.
- (iii) Article 350 A. Facilities for instruction in mother-tongue at primary stage.
 - (a) It shall be the endeavour of every State and of every local authority within the State to provide adequate facilities for instruction in the mother-tongue at the primary stage of education to children belonging to linguistic minority groups; and the President may issue such directions to any State as he considers necessary or proper for securing the provision of such facilities.

The implementation of the above guarantees has been uneven although the various Conferences of Education Ministers,

Government of India memorandum of 1956 as also the statement on languages in 1958 etc., have been laying emphasis on the special treatment to linguistic minorities.

2. According to 1981 Census, the religious minorities constitute about 17.4% of the population of which Muslims are 11.4%, Christians 2.4%, Sikhs 2%, Buddhists 0.7% and Jains 0.5%. Ministry of Home Affairs have identified Muslims and Neo-Buddhists as educationally backward at national level. It was agreed that the State Governments may also identify other groups which are educationally backward at the State level. Special efforts need to be taken to bring these educationally backward minorities on par with the rest of the society and to make them participate fully in the national developmental activities.

3. The National Policy on Education - 1986 states the following regarding education of minorities vide para 4.8 of the document: "Some minority groups are educationally deprived or backward. Greater attention will be paid to the education of these groups in the interest of equality and social justice. This will naturally include the constitutional guarantees given to them to establish and administer their own educational institutions, and protection to their languages and culture. Simultaneously, objectivity will be reflected in the preparation of text books and in all school activities, and all possible measures will be taken to promote an integration based on appreciation of common national goals and ideals, in conformity with the core curriculum."

PHASING OF TARGETS, STRATEGY ENVISAGED AND PRIORITY MEASURES

(a) PROGRAMME FOR 1986-87

The on-going programmes of the Department of Education which would continue in 1986-87 are:

- (i) Imparting of technical skills through the 10 Community Polytechnics set up in areas of predominant minority concentration.
- (ii) Programme of evaluation of text books from the standpoint of national integration currently undertaken by NCERT.
- (iii) Orientation programmes for principals/managers and training programmes for teachers of minority educational institutions to be taken up by NCERT in a phased manner.
- (iv) University Grants Commission's Scheme of giving assistance to universities/colleges for starting Coaching Classes for students belonging to educationally backward minorities.

(b) PROGRAMME TO BE IMPLEMENTED DURING REMAINING THREE YEARS OF THE SEVENTH PLAN VIZ. 1987-88 TO 1989-90:

The above schemes with supportive funding will be extended during the remaining years of the Seventh Plan. The NCERT, Ministry of Welfare and the Department of Education have been having dialogue with the Vice-Chancellors of the Universities of Aligarh, Jamia Millia Islamia, Kashmir, Marathwada and Osmania Universities, for setting up of Resource Centres which would provide training and guidance to minority educational institutions situated near these Centres. The scheme for setting up of such centres is at present under consideration of the Ministry. A proposal amounting to Rs. 65 lakhs has been made for the Seventh Plan period for setting up of these Resource Centres. The scheme of Community Polytechnics would also be extended to include five more polytechnics in the minority concentration areas during the Seventh Plan period.

(c) LONG TERM PROGRAMMES

EARLY CHILDHOOD AND TRADITIONAL SCHOOLS EDUCATION

Efforts will be made to teach Science, Mathematics and English on voluntary basis in institutions imparting instructions in Traditional Schools. Early Childhood Education Centres wherever possible will be set up in these schools and in areas pre-dominantly inhabited by educationally backward minorities. Socially Useful productive Work will also be introduced in these institutions. A central scheme of assistance will be prepared by the Department of Education for this purpose.

PRIMARY EDUCATION

- (i) Institutionalised system for compilation of statistical information required by Commissioner for Linguistic minorities regarding educational facilities. This would be done by State governments.
- (ii) Eliminating delay in sanctioning of linguistic minority teachers' posts and appointment of teachers by delegation of powers to District Collectors. Action will be taken by the State Governments.
- (iii) Survey on availability of text books in minority languages and setting up of printing facilities in minority languages. Action will be taken by the State Governments.
- (iv) Survey on availability of teachers' training facilities for teachers in minority languages and measures to enhance such capacity wherever necessary. Action will be taken by the State Governments.

- (v) Efforts will be made to utilise 15% of the curricular time for training in local crafts/trades and to arrange evening classes for children of artisans/agricultural labourers.

MIDDLE AND HIGHER SECONDARY EDUCATION

- (i) A scheme for in-service training from minority institution teachers in Science, Mathematics, Social Sciences, English and Career guidance, through SCERT and other resource centres and State career guidance institutions. At present the NCERT has a scheme for such training courses. The proposal is to extend this activity through SCERTs and other above mentioned institutions.
- (ii) A scheme for orientation courses for Managers and Principals of minorities institutions in modern educational techniques by SCERT. This is being done by NCERT at present on a small scale.
- (iii) Scheme of appointment of regional language teachers in minority institutions for national integration and for implementation of the Three Language Formula. This will be done by State Governments.
- (iv) A scheme for remedial coaching in minority managed educational institutions. This will be done by State Governments.
- (v) Minority managed educational institutions will be given a fair representation in the scheme for computer literacy in school education.

VOCATIONAL AND TECHNICAL EDUCATION

- (i) Provision of vocational courses in higher secondary schools specially catering to educationally backward minorities.
- (ii) Ensuring that in all the programmes on technical and vocational education included in the policy, minority run institutions derive full benefit.
- (iii) Setting up Crafts Training Institutes in identified minority artisan concentration blocks, with 80% seats for artisans' children.

WOMEN'S EDUCATION

- (1) As the women literacy and the girls enrolment is lowest among educationally backward minorities, in the schemes of opening of girls schools, appointment of lady teachers, opening of girls hostels' and providing of incentives in the form of mid-day meals, uniforms etc. Minorities needs should be fully met.

- (ii) A Production-cum-Training Centre for crafts exclusively for girls preferably with women instructors to the extent possible in each of the identified minority concentration districts. This will be done by State Governments.

VOLUNTARY EFFORT IN ADULT EDUCATION & EARLY CHILDHOOD EDUCATION

Orientation courses for professionals from minority communities to motivate voluntary effort; attaching one centre to all minority institutions to create awareness of these schemes and to train supervisors for multiplier effect. This will be done by State Governments.

LIBRARIES, READING ROOMS AND EXTENSION WORK

Scheme for encouraging setting up of libraries, reading rooms etc. in minority areas; pilot project for educational extension work in a few blocks on an experimental basis. This will be done by State Governments which will provide adequate finances for the purpose.

MINORITY MANAGED EDUCATIONAL INSTITUTIONS

- (i) Clear guidelines for recognition and for timely disposal of applications. Each State Government to formulate its recognition policy and giving wide publicity to this.
- (ii) Effective monitoring arrangements should be made to see the proper implementation of the programmes.
- (iii) Scheme for setting up of a State-wise Federation of minority institutions, to help in seeking cooperation of minority institutions in effective implementation of educational uplift measures, in ensuring minimum infrastructure facilities, maintaining academic standards and protecting the interest of teachers; these bodies to be officially recognised and assisted.

AREA APPROACH

Special attention to the illustrative list of 40 minority concentration districts in locating schools so that minority children have access in matters of admission. The list of 40 districts is appended. The State Governments may include other districts on the basis of the concentration of other educationally backward minorities.

SCHEME FOR SCHOLARSHIPS ETC.

Scheme for Scholarships for weaker sections on merit-cum-means basis, with in-built system of placement in good institutions; fee exemption/fee concession/compensation for opportunity cost for artisans and other weaker sections; such help could be routed through Voluntary Societies of all India repute. To be implemented by State Governments.

ORGANISATIONAL AND MANAGEMENT ISSUES

(1) BENCH MARK SURVEY AND RESEARCH STUDIES

Arranging Bench mark Survey and periodical surveys to assess the increase in literacy and in educational attainments; scheme for periodical research studies on various aspects to improve the effectiveness of remedial measures, especially relative availability of schools in minority concentration areas. This will be done by State Governments.

(ii) ASSOCIATION OF EDUCATIONALLY BACKWARD MINORITIES WITH BOARDS OF EDUCATION AND OTHER ADVISORY BODIES

Educationally Backward minorities to be associated with various Education Boards and Advisory Committees at Central and State levels.

(iii) MONITORING ARRANGEMENTS

A Cell will be created in the Union Education Department and in the State Education Departments to monitor effective implementation of these measures.

(iv) REVIEW

There shall be a review of all minority education programmes every year.

LIST OF MUSLIM DOMINATED DISTRICTS

STATES	DISTRICTS	
UTTAR PRADESH	1. Rampur	
	2. Bijnor	
	3. Moradabad	
	4. Saharanpur	
	5. Muzaffarnagar	
	6. Meerut	
	7. Bahraich	
	8. Gonda	
	9. Ghaziabad	
	10. Pilibhit	
	11. Deoria	
	12. Barabanki	
	13. Basti	
WEST BENGAL	14. Murshidabad	
	15. Malda	
	16. West Dinajpur	
	17. Birbhoom	
	18. Nadia	
	19. 24 Parganas	
	20. Cooch-Bihar	
	21. Howrah	
	KERALA	22. Malappuram
		23. Kozhikode
		24. Cannanore
25. Palghat		
26. Wyanad		
BIHAR		27. Purnea
	28. Katihar	
	29. Darbhanga	
KARNATAKA	30. Bidar	
	31. Gulbarga	
	32. Bijapur	
MAHARASHTRA	33. Greater Bombay	
	34. Aurangabad	
ANDHRA PRADESH	35. Hyderabad	
	36. Kurnool	
HARYANA	37. Gurgaon	
MADHYA PRADESH	38. Bhopal	
RAJASTHAN	39. Jaisalmer	
GUJARAT	40. Kachch	

XV. EDUCATION OF THE HANDICAPPED

PRESENT SITUATION

1. Out of 12 million disabled persons 2.6 million (1.2 LH, 0.74 Million SH, 0.53 million HH and 0.12 million VH, 10% have more than one handicap) fall in the age group 4-15 years. To this should be added 1.7 million MH children not covered in the survey of the disabled persons carried out by NSSO in 1986. The total disabled children falling in the UPE age group comes to 4.3 million.

2. Out 1.4 million children fall in the age group 0-4 years which is relevant for identification, diagnosis, assessment, early stimulation and preparation for education. The disabled needing education and vocational rehabilitation subsequently are also to be considered (Figures given in Annexure).

3. The National Commission on Teachers - I reports that "not more than 5 per cent of the blind and deaf children and, perhaps, 0.50 per cent of the mentally retarded" are estimated to be "in about 800-1000 special schools". Most of these schools are located in the metropolitan cities and other urban centres. Rural areas where about 80 per cent of these children are located remain practically unserved by educational facilities. Even coverage in common schools under the IED scheme is paltry 7000 children. Obviously, the coverage is negligibly small.

4. Apart from the quantitative gap in educational coverage of this group the qualitative aspect also needs improvement. Most of the institutions are run by voluntary organisations. While there are some very good institutions, many do not have trained staff, adequate accommodation and the necessary equipment and material. Some of these institutions are like homes for destitutes rather than educational institutions.

IMPLICATIONS OF NPE STATEMENT

5. The NPE stipulates that wherever possible education of children with locomotor handicap and other mild handicaps will be common with that of others. The children with severe handicaps are proposed to be enrolled in special schools with hostels at district headquarters. Appropriate arrangements for pre-school preparation for the handicapped children and vocational preparation in common with others as well as in special vocational centres have also been envisaged.

6. The implication is that there will be a system for identification, diagnosis and assessment of the handicapped for placement in schools. The handicapped children will be prepared for

education under the ECCE. It involves definition of the degree of handicap under different areas. For this purpose definitions formulated by the Health Ministry will be used. Further, the children will be prepared for education in the pre-school years under the ECCE and pre-school education.

PROCESS FORMULATION

7. Assuming that about 2 million disabled children will require education in special institutions and with the improvement of health services, nutrition standards, mother care and effective measures to prevent disability, the incidence of disability will fall. As a consequence, the absolute number of disabled children will not show significant increase. To cater to the needs of about 2 million severely handicapped children, 10,000 special schools with 150 to 200 children each will be needed. As education in special schools is very costly it will be ensured that only those children whose needs cannot be met in common schools are enrolled in these schools. As soon as the disabled children enrolled in special schools acquire the communication skills and study skills, they will be integrated into common schools. It is further assumed that with the improved efficiency of the common school system as a consequence of the implementation of National Policy on Education 1986, the capacity of the common schools to cater to the needs of the disabled children will also improve.

8. The ideal scenario for education of the handicapped is universalisation of primary education alongwith other children by 1990 (6-11 years) and 1995 (6 to 14 years). It will, however, require a warfooting effort because the coverage at present is not more than 5 per cent and the process of providing educational facilities, particularly in special schools, require large resources and is more time consuming because of the requirements of special educators and other specialists. The preparation of the specialists takes time. However, with concerted efforts LH children and children with mild handicaps can be covered within this time frame if the programmes are taken on warfooting, since large number of children do enter the common school system but drop out because of lack of sensitivity in the system to their needs. It will be a contribution to the goal of UPE. The alternative scenario refers to universalisation of primary education for children with severe handicap synchronised with the goal of health for all by 2000 AD and the UPE for the LH and other mildly handicapped children to be covered by 1990 and 1995.

9. The geoscatter of the handicapped and the fluctuations in the incidence of disability make the task of planning educational facilities very complex. The enrolment of LH and other mildly handicapped children and their retention in common schools will be increased by 25 per cent each year during the current plan through:

- (a) Organising advocacy programme for administrators and

teachers in the common school system;

- (b) Including training component on the management of this group of children in the massive in-service training programme of teachers;
- (c) Orientation programme for the administrators and supplementing the same through distance learning channel;
- (d) development of expertise at the SCERT, DIET, Sub-Divisional and Block levels for providing supervisory services to the teachers managing this group of children;
- (e) development of alternative learning material, teacher's handbook and guidance in managing these children;
- (f) supply of additional equipment/adaptation for pre-vocational and vocational courses in the common schools;
- (g) development of psychological services at the district level for the assessment of disability; and
- (h) mobilisation of support from the Health and Welfare Ministry wherever necessary.

It is suggested that a team of at least 3 persons at the SCERT level, 3 at DIET level and at least one each at the sub-divisional and block levels will be provided adequate training. It involves training of about 6000 Education Officers at the sub-district. An outreach programme covering all the teachers during the remaining 3 years as a part of massive teacher training programme will be undertaken. Ministry of Human Resource Development through its agencies like NCERT, NIEPA and Regional Colleges of Education may undertake the task of training through the SCERTs. The NCERT should also undertake development of handbook for teachers and other education officers for the management of this group of children within the common education system. The Labour Ministry is to undertake addition/modification of facilities for the personnel training in ITIs for the handicapped. The Welfare Ministry and Health Department are to provide prosthetics and the services for the diagnosis and assessment alongwith the District Rehabilitation Centres.

10. The following provisions including incentives are proposed:

- i) Provision of aids and appliances in the area to be covered.
- ii) Adequate provision for the payment of transportation allowance (Rs.50/- per month).
- iii) Provision for capital cost for the purchase of school rickshaw in rural area to an institution which has atleast 10 handicapped children.

- iv) Removal of architectural barriers in school building where atleast 10 handicapped children are enrolled.
- v) Supply of text books and uniforms free of cost as given to scheduled caste and scheduled tribe students.
- vi) Attendance incentives like other special groups like girls and ST children.
- vii) Arrangements for the preparation of these children in Early Childhood Centres for education in schools.
- viii) Provision for admission of children older than the eligibility (upto 8-9 years instead of 6 years). It is essential in the transitional phase of the provision. Extended preparation from schooling also necessitates this provision.

11. The response of the State Governments to the centrally sponsored scheme of Integrated Education for the Disabled has not been very encouraging. Ministry of Human Resource Development is to take up with the States to accelerate the pace of implementing the scheme to achieve the goal of UPE for this special group alongwith others.

12. The current IED scheme needs revision in view of the NPE. The Ministry of Human Resource Development may immediately appoint a committee to review the scheme and revise the same. During the interim period the present scheme should continue.

13. Provision for vocational education of these children may be made alongwith others in the common school with +2 stage or in the ITIs. Additional machines with modifications and safety system wherever necessary will have to be provided for this purpose.

14. The tools for the Psycho-Educational assessment and diagnostic tools for identification of learning problems are conspicuously missing. For the development of educational plan effectively these need to be developed in regional languages. The group suggests that the NCERT should undertake this work on priority basis. It should not only develop such tools, but should also encourage other organisations to translate and adapt in regional languages. It will be worthwhile to develop Psycho-Educational Resource Centre at NCERT. This should procure the available tests, identify areas in which new tests are required and promote development. The National Institutes for Handicap may also be associated with this work.

15. Documentation of innovative and successful experiments relating to educational provision for these children should be undertaken by the NCERT. NCERT should also disseminate these innovative practices to the educational institutions.

16. Education of children with motor handicaps and other mild handicaps in common schools needs to be augmented.

EDUCATION IN SPECIAL SCHOOLS

17. Special schools will be established at the district and sub-district levels. It was felt that composite special schools may be established to start with. This decision is based on the geosscatter of the population of disabled children, reluctance of the parents to send children to schools located at distant places, sharing of specialist staff like therapists and psychologists to support the educational efforts, utilisation of vocational centres for pre-vocational and vocational courses of the children in school as well as for post education rehabilitation courses, meeting the needs of multiple handicapped children, and the economic viability criteria. It was, however, felt that in a particular district if the number of children in a particular disability becomes large enough (60-70), separate special schools for that area of handicap can be carved out at later stage. In the composite special schools the children with different handicaps will be educated in different departments/groups/classrooms.

18. In each of the districts where a special school is set up, a vocational training centre either as a part of the school or as an adjunct to it will also be developed. This institution will provide vocational training to the students from the special schools and other severely handicapped persons for job. The emphasis will be on training craftsmen for locally available jobs. The Rehabilitation Council should be requested to give recognition to this training programme so that the incumbents can get job throughout the country. Wherever necessary recognition from the NCTVT and NCTE may be obtained.

19. Separate hostels will be provided for boys and girls. The capacity for the boys hostel should be 40 and that of the girls about 20. These hostels will cater to the students in the school as well as in vocational training centres.

20. In the Eighth Five Year Plan another 5000 special schools at sub-district level will be opened to bring the total number of schools to about 7500. The number of these schools will have to be increased to 10000 during the Ninth Five Year Plan.

21. Establishment of special schools should be a central scheme implemented through state either through the state machinery or through the voluntary sector. 400 special schools may be established during the Seventh Five Year Plan itself. The schools should be established first in the districts which do not have any special school. Each of these special schools may have atleast 60 handicapped children of all categories as the initial cohort.

22. Assuming that each special school will require 8-10

special teachers, about 3500-4000 special teachers will be required during the current plan. Training of special teachers disability-wise has to be taken up immediately if the proposed special schools at district headquarters have to go functional at the suggested speed. This task may be undertaken by the Ministry of Human Resource Development and Ministry of Welfare through UGC, NCERT, Regional Colleges of Education, National Institutes of Handicap and selected University Departments of Special Education. This task of training teachers is in addition to clearing the backlog of untrained teachers in special schools. The in-service training courses may be organised by the National Institutes through its regional centres and the Regional Colleges of Education in collaboration with SCERTs.

23. It has been observed that the voluntary agencies do not depute untrained teachers for training. The grant may be made contingent on appointing trained teachers or getting them trained within three years of appointment. The delay in this may be accompanied by proportionate reduction in the grant. The grant-in-aid may be linked to the quality of the service provided.

24. Alongwith training, the group also considered the steps to retain trained teachers in special education, as the task is more exacting with these children. The group felt that the special teachers and vocational teachers for the handicapped children may be given additional special pay @ 20 per cent of the basic pay.

25. Besides teachers, 400 psychologists and at least 2 doctors in each district needs to be specially oriented to the task of assessment and rehabilitation of the handicapped children. It is suggested that the existing cadre of Counsellors, wherever available, may be provided inservice training of 4-6 weeks for undertaking assessment of the handicapped children. Similarly, orientation programme for the medical staff for a period of two weeks may be undertaken. In addition other staff like physiotherapists, occupational therapists, speech therapists, will be needed. Atleast 400 each will be required. The Health Ministry and Welfare Ministry may develop and coordinate the programme for the training of these professionals. The efforts may be coordinated through the Rehabilitation Council of India.

26. Orientation training for the vocational teachers may be organised by the National Institutes and Regional Colleges of Education on regional basis. 3000-4000 teachers will have to be oriented during the current plan period. The orientation training will be of two weeks duration.

27. The curriculum of these schools should be modified taking into account the specific learning problems arising out of a particular handicap. For example, limitation of the blind child for science practicals and limitation of the deaf child to study more than one language needs to be adjusted in the curriculum. Caution should, however, be exercised that these children should not miss the curriculum component that they can. The National

Institutes of Handicap and NCERT should develop the curriculum and make available curriculum guides and teacher's handbook to special schools.

28. Flexibility in examinations is a must for severely disabled children. Evaluation guides and tools for educational assessment should be made available to these schools. NCERT which has the expertise in the technology of development of such tools and the National Institutes which have the expertise in disability may collaborate to produce this material.

29. The use of technology in special education should receive attention. It involves modification, adjustment and adaptation of the equipment and material in the learning resource centre. The Department of Electronics, MHRD and Ministry of Welfare may collaborate to produce such material for improving learning opportunity for the handicapped. For example, adaptation and add ons in the computers, scripted TV and Video for the deaf, etc. need to be taken up so that handicapped persons also utilise the opportunities available for other children.

30. The existing special schools will be strengthened for increasing enrolment (wherever possible) and for improving effectiveness (800-1000 schools). The group agreed to the recommendation made by the National Commission on Teachers I that "grants to special schools should be given on the same basis as to regular schools with adequate provision to meet special needs of the disabled children."

31. The weakest link in education of the handicapped in special schools at present refers to the lack of supervision due to the absence of infrastructure for maintenance of standards of special education in the institutions. The Ministry of Welfare and Ministry of Human Resource Development may cooperatively develop an infrastructure for developing supervisory services to the special schools. A panel of supervision may be introduced. The three members of the staff at district level who are to be oriented to education of the handicapped may be provided the knowledge and competencies for carrying out such supervision. The members of staff from the District Rehabilitation Centres may also be associated with this work.

32. Research in education of the handicapped in the Indian socio-cultural milieu is to be taken up immediately. The NCERT, ICSSR, UGC and the National Institutes for Handicap should promote research. One of the reasons for lack of research in this area is very little involvement of the universities and dearth of persons who can carry out and supervise research in this area. Training of research workers, development design for funding and incentive from the National Institute will have to be mobilised for promoting this work.

MONITORING AND EVALUATION

33. The data base regarding education of the handicapped is very weak. Steps will be taken for strengthening the information system. Ministry of Welfare and Ministry of Human Resource Development will monitor the progress of education of the handicapped in special schools and in common schools respectively. An integrated information system will be located in the Ministry of Human Resource Development. The data regarding the institutions for educating the handicapped will also be included in the statistical reports of the MHRD. The Ministry of Welfare will also provide information from special schools to MHRD. Further, the periodical Educational Survey carried out by the NCERT will include data on education of the handicapped also. MHRD and Ministry of Welfare will conduct evaluative studies at different points of time through the National Institutes, NCERT, NIEPA, University Departments of Education and University Departments of Special Education. Qualitative studies will also be undertaken. The NCERT and National Institutes of Handicap will develop a design of evaluation incorporating quantitative as well as qualitative aspects.

Table

POPULATION OF DISABLED BY AGE GROUPS AND NATURE OF DISABILITY IN 1981

Disability	0-4		5-14		15-59		60+		All ages		(Total)	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban		
	1	2	3	4	5	6	7	8	9	10	11	12
V.H.	23559	4554	92351	34268	693182	171500	2045483	355837	2856575	566159	3422734	
H.H.	Not Covered by		439368	96107	1462450	244680	916857	202577	2818675	543364	3262039	
S.H.	the Survey		575096	168975	688387	199142	99431	24145	1362914	392262	1755176	
L.H.	235077	98366	945900	282806	2094432	500714	913019	192302	4238428	1074138	5312616	
Total	310836	102920	2052715	582156	4938451	1116036	3974790	774861	11276592	2575973	13852565	

Note: Based on prevalent rate given in Nineteen and twenty eighth of National Sample Survey and total population in the population Statistics paper 2 of 1983, Series I India, A.G. Office.

XVI. ADULT EDUCATION

THE PRESENT SITUATION

1. Spread of literacy has been an important programme since independence. Between 1951 and 1981 the percentage of literacy improved from 16.67 per cent to 36.27 per cent. However, in absolute numbers illiterate persons have increased during this period from 300 million to 437 million. Women comprise 57 per cent of the illiterate population and the situation among SC/ST is particularly bad. Adult literacy received special attention during the last ten years - administrative and technical resource structures have been established and voluntary agencies involved in large numbers. However, the situation is characterised by low levels of literacy among persons treated as literate, widespread disuse of literary skills, often resulting in relapse to illiteracy, scanty opportunities for continuing education and access to information. Science, technology and modern research have not been applied to literacy programmes and the youth, workers and the masses have remained uninvolved in it.

THE POLICY, TARGETS AND IMPLICATIONS FOR STRATEGY

2. NPE envisages that adult education would be a means for reducing economic, social and gender disparities. The principal aim of the new National Programme of Adult Education (NPAE) is to provide education including literacy, to the population in 15-35 age-group, which numbers about 100 million. Previous experience have brought out that programmes of literacy can become meaningful only when they come along with a package comprising practical information and skills relevant to day-to-day needs of learners. NPAE would, therefore, inter alia, lay emphasis on skill development, and creation of awareness among the learners of the national goals, of development programmes, and for liberation from oppression. NPAE would be a phased time-bound programme, covering approximately 40 million by 1990 and another 60 million by 1995.

3. The main features of the implementation strategy will consist of the following:

- (a) Reorganisation of the existing programmes, to introduce flexibility and other measures for greater effectiveness.
- (b) Application of science & technology, and pedagogical research for improving the pace and environment of learning.
- (c) Establishing linkage between adult education and the developmental programmes.

- (d) Launching of mass functional literacy programme.
- (e) A multi-dimensional programme of continuing education as the instrument for moving towards a learning society.
- (f) Creation of dynamic management structures to cope with the targets envisaged.
- (g) A distinct slant in favour of women's equality, and taking of all measures in pursuance of this resolve.

CREATION OF ENVIRONMENT - A PRE-REQUISITE FOR ERADICATION OF ILLITERACY

4. The past programmes had suffered due to excessive dependence on administrative structures, and lack of involvement of the mass organisations, media and the education institutions. It is proposed to correct the imbalance by taking the following measures:

- (a) Active cooperation will be sought from political parties and the mass organisations of workers, peasants, women, youth and students.
- (b) Effective support will be provided through the mass media.
- (c) All development departments will be expected to utilise the adult education programme for the furtherance of their objectives.
- (d) The entire educational system will commit itself to this cause.
- (e) The district, tehsil and thana level administrative machinery will be involved in NPAE to ensure their support for awareness-oriented adult education programmes.

REORGANISATION OF THE EXISTING PROGRAMMES

5. The main programme at present is the Rural Functional Literacy Projects (RFLP). In terms of the financial pattern and programme parameters, RFLP has influenced the State Adult Education Programmes (SAEP) as well as the programme of assistance to voluntary agencies. RFLP and SAEPs will be strengthened by (i) introduction of flexibility in the project structure; (ii) greater use of spoken language of the learners (including the languages spoken by the tribal people); (iii) emphasis on training of functionaries; (iv) decentralisation of the supervisory system; (v) increase in the number of women instructors, even by adjusting the minimum qualifications and making arrangements for their continuing education; (vi) continuity regarding duration of the projects; (vii) application of science and technology for improvement in the environment of the learning centres, greater use of educational technology and research in pedagogy of literacy

instructions; and (viii) a direct and continuing linkage between initial literacy instruction and post-literacy and continuing education.

6. The involvement of voluntary agencies and social activist groups will be enhanced by creating a relationship of partnership improving the system of initial selection, assurance regarding continuity, simplification of procedures and ensuring that such agencies are able to take up programmes of their choice provided that they are in conformity with the NPE objectives.

7. The existing programmes of workers education would be reviewed and brought in conformity with the Policy directives. The Shramik Vidyapeeths will pay greater attention to rural workers, women workers, child labour and to increase in workers' productivity. The Central Board of Workers Education will take up effective programmes of literacy and workers education. There will be much greater involvement of trade unions, and they will be encouraged to take up larger programmes.

ADULT EDUCATION AND DEVELOPMENT PROGRAMMES

8. Adult education is both a process through which effective delivery mechanisms are created for the deprived sections of society, and a forum through which such sections secure information and understanding regarding the processes of development. Hence it is of importance that effective linkage is established between adult education and development programmes. Some of the ways in which this will be done are as follows:

- (a) Special literacy primers and other reading material will be developed for the beneficiaries of IRDP and NREP to enable them to understand their rights and responsibilities.
- (b) Efficacy of ICDS has suffered due to discontinuance of the component of functional literacy of adult women. This programme will be restarted in the form of Functional Literacy of Women (FLOW) which would be an integrated part of ICDS.
- (c) The various programmes for development of SC/ST and other educationally backward sections will include a component of literacy and adult education wherever possible.
- (d) Programmes of labour welfare will give special attention to literacy and adult education. Employers will be required, if necessary by law, to organise literacy and skill development programmes for all their employees. Welfare Funds for various categories of workers will be used for running literacy and adult education programmes and due attention given in the various schemes for unorganised workers.

- (e) Literacy and adult education will also form an important part of the various programmes of women's development.
- (f) Starting with 50 NYKs in 1986-87, all Nehru Yuva Kendras will take up in their district one project of 100 functional literacy centres in one block each.

MASS FUNCTIONAL LITERACY PROGRAMME

9. NPE places complete faith in country's youth, teachers and workers and peasants. In conformity with that spirit, it is intended to give a marked slant to NPAE from the present intensive selective activity on a limited scale to a mass programme. Its main features would be as follows:-

- (a) Literacy work would be taken up by a large number of students as "study service" - viz., specific projects taken up as a part of work experience and social/national service, which would be reflected in the students' final result sheets.
- (b) Substantial institutional incentive will be provided to universities, colleges, higher secondary/secondary schools for eradication of illiteracy in a well-defined area.
- (c) Trade unions, Panchayati Raj agencies and other representative organisations of people will be encouraged to voluntarily take up functional literacy programme for which literacy kits and some organisational expenses would be provided to them.
- (d) Encouraging individuals to look upon literacy work as a personal commitment and voluntary service, particularly by women among women, and involvement of voluntary agencies for this purpose.

CONTINUING EDUCATION

10. Continuing education is an indispensable aspect of the strategy of human resource development and of the goal of creation of a learning society. Continuing education includes post-literacy for neo-literates and school drop-outs - for retention of literacy skills, continuation of learning beyond elementary literacy, and application of this learning for improving their living conditions. But continuing education goes beyond post-literacy and its instrumentalities include the following:

- (1) Establishment of Jana Shikshan Nilayams (JSN) for clusters of villages, the total population of which may be about 5000. JSNs to be integrated with the programmes of adult education and non-formal education, will be housed in the school building, Panchayat Ghar etc. and provide facilities of library, reading room, Charcha Mandal, cultural activities and may also include a community TV set.

- (2) Employers, trade-unions and the concerned agencies of Government will organise systematic programmes of workers' education for improving their educational standards and upgradation of their skills with a view to improving productivity, workers' wages and their well-being.
- (3) All post-secondary education institutions - including universities, colleges and polytechnics - will be expected to give to extension work the same importance as they do to instruction. Extension programmes would include mass education as well as systematic courses of continuing education for the work force and the professionals. Distance learning techniques will be widely used for this purpose.
- (4) Programmes of book promotion will be taken up on the lines indicated in the Policy. Libraries and reading rooms in educational institutions will be opened to the public in the evenings and necessary additional grants provided to them for this purpose. Voluntary efforts for establishment of reading rooms and libraries will be encouraged.
- (5) As spelt out in the section of Media and Education Technology, radio, TV and films will be encouraged to subserve the objectives of education and recreation.
- (6) Non-formal programmes of vocational and technical education, based on the needs and interests of learners, will be organised on a large scale, ensuring that women participate in such programmes with men. The existing arrangements provided under schemes such as TRYSEM, Krishi Vigyan Kendras, Farmers' Training Centres, etc., would be supplemented by part-time courses organised by educational and technical institutions.

TECHNICAL RESOURCE SYSTEM

11. The technical and pedagogic resource support for NPAE will have to be greatly strengthened. The emphasis would be on decentralisation and employment of educational technology for quality improvement. The following specific measures will be taken:

- (a) Greatest attention would be paid to preparation of good learning materials, teachers' guides, and to training. For this, as well as for production of learning materials for post-literacy and continuing education latest technologies of printing and communication will be employed. The national level organisation for this purpose will be reviewed and suitably reorganised.
- (b) The work of each State Resource Centre will be reviewed. Those not functioning satisfactorily will be improved, and if necessary, shifted under the auspices of some other

organisation. Much more provision will be made for improvement of infra-structure and staff in SRCs.

- (c) District Resource Units (DRU) for adult education and non-formal education will form an integral part of DIETs. In cooperation with other staff of DIET, as well as other resource persons available in the district, the DRUs will take responsibility for initial and continuing education of the field level functionaries. They will also design and oversee the methods employed in evaluation of learners.

TECHNOLOGY MISSION OF ERADICATION OF ILLITERACY

12. Eradication of Illiteracy will be launched as a Technical and Societal Mission. Such a Mission approach presupposes that we are at the threshold of momentous scientific, technological and pedagogic changes, which may, besides augmenting the range of the communication system, make the process of acquiring literacy quicker and easier. In pursuance of the Mission, effort will be made to (i) improve the physical environment, power supply and the illumination etc. of the Adult Education Centres; (ii) facilitate and expedite preparation, printing, distribution of topical and relevant learning materials and learning aids on a decentralised basis; (iii) enrich the process of learning with audio-visual materials by enlarging the range of Television and Radio broadcasts and also by developing cheaper and sturdier equipment; (iv) reduce the time-lag between pedagogic research and the assimilation of its results in the teaching-learning processes; and (v) create inter-active environment between the electronic teaching devices and the learners.

MANAGEMENT OF NPAE

13. The objectives of the management system of NPAE is to ensure effective delivery of the learning inputs to the intended beneficiaries of the programme in the most effective manner, in accordance with the strategies spelt out at paragraph 2 and thereafter. For this purpose the main considerations in determining the management system will be (i) the guiding considerations for planning and management spelt out in NPE; (ii) need for the centralised policy framework and direction with decentralisation of the planning and implementation process and functional autonomy; (iii) establishment of effective linkage between development agencies and NPAE; (iv) securing the commitment of political parties, mass organisations, educational institutions, voluntary agencies, etc.; (v) delineation of responsibility to enforce operational accountability; and (vi) ensuring the effective participation of functionaries of NPAE, the intended beneficiaries and the community in planning and day-to-day implementation of the programme at the grassroots level.

14. Project approach: The critical level in the management of NPAE is the project level. A project may be defined as the administratively viable and functionally autonomous field agency

with complete responsibility for eradication of illiteracy and the organisation of continuing education programmes in a compact area. The project will function on the advice of a committee in which representatives of the functionaries, local community, people's organisations and officials of the concerned development departments would be represented. The management functions at the project level would comprise (i) planning of the programme; (ii) selection and training of supervisors and instructors; (iii) ensuring coordination and cooperation with the various developmental agencies and mass organisations; (iv) provision of supplies and materials; (v) ensuring that the programme is run in accordance with the overall objectives; and (vi) effective evaluation and monitoring.

15. The operational unit of adult education would continue to be the Adult Education Centre (AEC) organised at the village or mohalla level. The AEC Organiser is envisaged as an activist worker who would run the AEC for organisation of programme as spelt out in paragraph 2. A cluster of 8 to 10 AECs will be overseen by a supervisor who will be selected from the local area, preferably an experienced and successful AEC Organiser. The functions of a supervisor will include organisation of post-literacy and continuing education activities through a Jana Shikshan Nilayam.

16. All existing Adult Education Projects will be reviewed and reorganised. The basic features and financial norms of all projects, whether funded by the Central Government or the State Government, and run through a governmental agency or a voluntary agency, would be similar, permitting within a range, flexibility and variation to increase effectiveness and to promote innovation.

17. Planning at the district level: Detailed planning at the district level for illiteracy eradication would be the responsibility of the District Boards of Education (DBE). Technical assistance would be provided to DBE by the District Resource Units referred to at paragraph 11. DEB will undertake:

- spatial allocation of responsibility among the various agencies implementing the programme;
- provide overall guidance to DRUs;
- coordinate the Mass Programme referred to at paragraph 9;
- guide and coordinate the adult education programmes undertaken by the employers, etc.

18. The State and the National Level: At the State as well as National level there will be a commission headed by the Chief Minister and the Minister of Human Resource Development respectively. Its membership would include senior level political leaders of the main national parties. These will be autonomous

bodies and will have responsibility for planning and implementation of NPAE. Their responsibilities will include:

- planning and budgeting for the programme;
- creation of multi-level structures for development of materials and for training of functionaries;
- evaluation, monitoring, concurrent review and research;
- continuing education programmes;
- provision of media support; and
- linkages with other development Departments.

The day-to-day financial and administrative powers necessary for implementation of this Programme of Action will be the responsibility of the Executive Committees of the State as well as the National Commissions. The State Executive Committee would be headed by the Chief Secretary, Education Secretary and the national committee by the Union Education Secretary.

19. Evaluation and MIS: Maximum attention will be paid to the subject of learner evaluation - the purpose being to ensure that all adult learners attain a level in literacy and numeracy which would enable them to continue learning in a self-reliant manner. Learner evaluation will also concern itself with the other components of NPAE - skill development, awareness, etc. A system of programme evaluation will be built into NPAE to ensure that all AEC organisers, supervisors and management personnel concurrently review, in a participatory manner, the progress of the programme. Institutions of higher education and of social science research will be associated with external evaluation - of the process, the quality of the programme, quantitative achievements and the management system. Necessary correctives will be introduced from time to time on the basis of those evaluations.

20. A Management Information System will be instituted to ensure periodic flow of information needed for improvement in management. Measures will also be taken towards careful analysis of the information data received and feedback.

XVII. CONTENT AND PROCESS OF SCHOOL EDUCATION

THE PRESENT SITUATION

1. In a knowledge-based society, the content and process of education has to undergo continuous reorganisation and upgradation. A major reorganisation of curriculum took place in 1975 with the introduction of the 10+2 pattern of school education. While all the States have by now accepted this pattern in principle, its implementation, particularly in terms of re-orienting the content and process has remained indifferent and uneven. One of the major weaknesses of the attempts to bring about curricular reform in the past has been the lack of a comprehensive plan to link curricular changes with the processes of teaching, learning, teacher training and examination reform. A review conducted by NCERT revealed that a large number of text-books in languages and history were found to be unsatisfactory from the standpoint of national integration. Also, the comprehensibility of text-books has been found to be by and large very poor through another study conducted by NCERT. It has also been observed that there is considerable room for improvement of text-books in terms of the organisation and presentation of the content and its value orientation. The layout, design, illustration and binding of textbooks also need drastic improvement, particularly in view of the advancement in the technology in these areas. Innovations and research in the field of curriculum development and training methodology is by and large confined to specially funded projects and small groups. The existing technical support structure is not adequately equipped to provide professional support to the process of institutionalisation of innovation. Except the project SITE, educational technology and mass media support to educational reorganisation has remained insignificant. The existing widespread disparities in the schooling facilities available to the children belonging to different socio-economic groups has stood in the way of ensuring comparability of educational standards.

THE POLICY AND ITS IMPLICATIONS

2. The parameters related to the reorientation of the content and process of education, as indicated in the NPE are:-

- (i) access to education of a comparable quality for all irrespective of caste, creed, location or sex,
- (ii) introduction of the norm of minimum levels of learning for different stages and provision of threshold facilities (Operation Blackboard) so that learning becomes a more enjoyable experience even for slow learners,

- (iii) articulation of a national system of education with a common structure, national curricular framework which contains a common core,
- (iv) examination reform and introduction of evaluation as an ongoing process in schools for the improvement of teaching and learning,
- (v) development of culture-specific curricula and instructional material for the tribal people and educationally deprived minority groups keeping in view their rich cultural identity,
- (vi) overhauling of the system of teacher education and strengthening of the technical and resource support structures, including the establishment of District Institutes of Education and Training (DIET),
- (vii) decentralisation of educational administration, creation of a spirit of autonomy for educational institutions with greater role assigned to the institutional heads and development of professionalism among teachers,
- (viii) promotion of non-governmental and voluntary efforts and people's participation for giving impetus to innovative ideas and practices and mobilisation of resources, and
- (ix) effective use of modern communication technology for generation and dissemination of educational programmes, training packages, and for creating awareness.

INTERVENTION PROGRAMMES:

3. The intervention programmes will broadly cover orientation in curricular areas, inservice teacher training, support systems, use of technology for motivation and monitoring.

The modes of intervention and the corresponding programmes as deduced from the Policy are as follows:

- a) CONTENT Reorientation
 - 1) National Core Curriculum
 - 2) Revised Work Experience Programmes
 - 3) National Curriculum Framework, Syllabi and Instructional Packages.
- b) Process Reorientation
 - 4) Reorientation of In-service Teachers
 - 5) Special Training Programmes for In-service Teachers in
 - i) Work Experience
 - ii) Art Education
 - iii) Physical Education
 - 6) Examination Reform
 - i) Reorientation of functionaries and teachers through special programmes

- ii) Establishment of Educational Testing Service
- c) Both CONTENT AND PROCESS
 - 7) Strengthening of the Technical Support System
 - i) Existing Institutions
 - ii) Linkages and Networking
 - iii) Establishment of DIET
- d) MOBILISATION AND MOTIVATION
 - 8) Communication Technology
 - i) Terrestrial Radio and TV
 - ii) Audio and Video Cassette service
 - iii) Microcomputer, Electronic Notice Board and Teletext.
 - 9) Networking of non-traditional Resource Centres, Voluntary Agencies and Social Activities of Groups.
- e) TRIGGERING & MONITORING
 - 10) Planning, Budgeting, Coordinating Monitoring network.

THE STRATEGIES

4.a) As indicated earlier, the reorientation of content is proposed to be brought about by simultaneously launching three programmes. The approach to be followed in the preparation of instructional packages is linked with the method of teaching, learning and evaluation recommended under the national curriculum framework. Similarly, there is a need to reorient the educational personnel responsible for management, supervision and for provision of technical and logistical support. The strategy for implementation of the national curriculum is therefore linked with the

- reorientation of teachers and other educational personnel
- development of professional capability at all levels
- phased preparation, production and distribution of textbooks and other instructional materials.

In order to achieve these objectives it would be necessary to decentralise the technical support system, and to standardise the methodology for diffusion of the programmes with reasonable flexibility. This process will be facilitated by the preparation and dissemination of the following methodological guidelines by NCERT in close collaboration with the educational authorities:

1. Curriculum Guidelines,
2. Methodological Handbook for Teachers,

3. Methodological Handbook for Evaluators of Textbooks and other Instructional material,
4. Guidelines for Textbook Writers,
5. Guidelines for Textbook Designers and Illustrators,
6. Guidelines for Producers of Kits and A.V. Equipment,
7. Guidelines for producers of Audio and Video Programmes,
8. Guidelines for Principals and Head Teachers,
9. Guidelines for Educational Administrators and Supervisors,
10. Training Guidelines for Teacher Educators and Resource Persons,
11. Guidelines for Evaluators of Pupil Growth.

The time schedule for development, production and introduction of revised instructional packages, including text books, based on the National Curriculum framework is indicated in the chart attached.

(b) The implementation of the national curricular framework in a systematic manner by the educational authorities will to a great extent depend on the creation of a favourable climate both within the education system and at the societal level. Such a climate is expected to be created with the introduction of the exemplar materials based on the national core curriculum and model instructional packages for upgradation of the quality of Work Experience programmes, right in the current year.

(c) The present organisational structure for implementation of educational programme can be made more efficient through appropriate administrative measures and simplification of rules and procedures. However, without making room for introduction of new ideas into the system through deliberate promotion of its linkages with the existing innovative projects (run by other governmental and non-governmental agencies) the present system on its own may act as a self-propelling one. Induction of the communication media and local innovative groups into the process of implementation of the Policy may itself prove to be an innovation.

(d) Much of the effectiveness of the intervention programmes will depend on how they are planned, reduced to specific activities, sequenced and coordinated by dedicated groups responsible for providing professional guidance at different levels of implementation. The special cells identified for this purpose at different levels should constitute the planning and monitoring network.

(e) As large number of institutions are to be identified at the state, district and local levels for providing technical support of specialised nature, it may not be feasible to provide any additional staff or capital equipment. Most of these institutions should be able to provide their own physical facilities and existing expertise for the organisation of the proposed programmes. However, some of them may soon prove to be very effective and willing to perform the role of resource centre on a long term basis. A long term plan to network these potential resource centres should be in-built in all short term intervention programmes, so that the process of institutionalisation of the innovative practices could be realised within a reasonable period.

ORGANISATIONAL RESPONSIBILITIES

5. Since NCERT and the State Directorates of Education, SCERT/SIE and Boards of Education are engaged in the implementation of several collaboration programmes over a long period, the whole operation of reorienting the content and process of education should be jointly planned by NCERT and the State agencies concerned. A detailed State-wise action plan will be designed by NCERT by October, 1986 on the basis of the document on implementation of NPE in collaboration with the State Governments and under the guidance of the Ministry of Human Resource Development. While concretising the total plan, the State authorities may simultaneously initiate action for implementation of the priority programmes planned for 1986.

The action plan will be initiated as follows:

NCERT and other national level institutions will actively involve the State level agencies in the finalisation of methodological guidelines, their translation into regional languages, production and wider dissemination.

- (a) Pending finalisation of the modality for budgeting and allocation of funds for the above programmes necessary money will be disbursed by NCERT to the nodal State agencies for implementation of these components of the programmes for which they will be directly responsible.
- (b) State agencies will be responsible for the establishment of the State Planning, Co-ordination and Monitoring Cells and identification of resource persons and centres for adoption/adaption or preparation of instructional packages and organisation of local training programmes.
- (c) NCERT will be responsible for coordinating all programmes related to the orientation of key resource persons and preparation of programmes for the mass media.
- (d) NCERT will also initiate action for the identification of competent professional and voluntary organisations, local activist groups and developmental agencies for providing logistical and resource support to the State, district and

local educational authorities in the implementation of the intervention programmes with a broad framework of policy safeguards for funding.

- (e) NCERT and the nodal State agency will be jointly responsible for monitoring the programme, reporting to the concerned authorities and for initiating corrective measures on a regular basis.
- (f) Since the commitment of supply of revised textbooks kits and aids of different kinds to the resource centres and schools would immediately call for planning of large scale production and distribution of these materials, the production capacity of the existing infrastructure needs to be immediately reviewed by Central and State Governments, Department of Education. An appropriate division of the areas of operation will be decided for the public, private and voluntary or non-profit sectors with emphasis on technological upgradation, policy safeguards regarding pricing of the products and services, and standardisation of quality.

THE IMMEDIATE TASK

6. While the National Curriculum framework and the Common Core provide the detailed rational objectives and guidelines for curricular change, their implementation in the form of the introduction of new instructional materials and appropriate teaching, learning and evaluation norms will have to be ensured by the National, State and other educational authorities in the shortest possible time. The draft curriculum guides, model syllabi and exemplar materials which are in the process of preparation by NCERT may provide the basis for immediate review of the textbooks prescribed or recommended by the educational authorities. In order to make a beginning in the process of curricular change in the current academic year itself, NCERT has been assigned the responsibility of bringing model syllabi and exemplar instructional packages in the following ten core curricular areas:

- (i) History of India's Freedom Movement,
- (ii) Constitutional obligations,
- (iii) Content Essential to Nurture National Identity,
- (iv) India's Common Cultural Heritage,
- (v) Egalitarianism, Democracy and Secularism,
- (vi) Equality of Sexes,
- (vii) Protection of the Environment,

(viii) Removal of Social Barriers,

(ix) Observance of the Small Family Norm,

(x) Inculcation of the Scientific Temper.

In addition to these packages, NCERT will also bring exemplar packages on 20 activities which may be organised by schools under the curriculum area of Work Experience as Model Programmes.

The Core Curricular and Model Work Experience activities can be introduced in selected schools in 1986 without much difficulty in the appropriate stages of teaching in relevant subject periods. These packages should demonstrate not only the cross curricular content but also the non-directive methods of teaching.

DEVELOPMENT, PRODUCTION AND INTRODUCTION OF REVISED INSTRUCTIONAL PACKAGES, INCLUDING TEXTBOOKS, BASED ON THE NATIONAL CURRICULUM FRAMEWORK

S.NO	ACTIVITY	1986						1987				1988				1989				1990				
		JUL	AUG	SEP	OCT	NOV	DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	
1	Preparation of guidelines for framing syllabi by NCERT (July & August 1986)	*****																						
2	Development of Syllabi for classes I to XII (August to October 1986)		*****																					
3	Development of Instructional packages, including textbooks, by NCERT (For Classes I, III & VI) (October 1986 to March 1987).			*****																				
4	Development of Instructional packages, including textbooks, by States/UTs (For Classes I, III & VI) (October 1986 to March 1988).			*****				+++++																
5	Introduction of revised instructional packages in Classes I, III & VI (July 1987 & July 1988)							****				+++												
6	Development of Instructional packages, including textbooks, for Classes II, IV, VII, IX & XI by NCERT (April 1987 to March 1988).							*****																
7	Development of Instructional packages, including textbooks, for Classes II, IV, VII, IX & XI by States/UTs (April 1987 to March 1989).							*****		+++++														
8	Introduction of revised instructional package in Classes II, IV, VII, IX & XI (July 1988 & July 1989).											****					++++							
9	Development of Instructional packages, including textbooks, for Classes V, VIII, X & XII by NCERT (April 1988 to March 1989).											*****												
10	Development of Instructional packages, including textbooks, for Classes V, VIII, X & XII by States/UTs (April 1988 to March 1990).											*****		+++++										
11	Introduction of revised instructional packages, including textbooks, for Classes V, VIII, X & XII (July 1989 & July 1990)																****						++++	

*** States/Union Territories which will adopt Hindi and/or English versions of the instructional packages, including textbooks, developed by NCERT
 +++ States/Union Territories which will adapt instructional packages, including textbooks, developed by NCERT or use them as models for development of similar packages in regional languages

XVIII. EVALUATION PROCESS AND EXAMINATION REFORMS

1. Reforms in examinations have been a subject of serious discussion for long. Some changes have been introduced in the system at the initiative of the NCERT in school examinations and the UGC in university examinations. On the whole, however, the impact of these reforms have not been too significant.

THE POLICY AND STRATEGIES FOR IMPLEMENTATION

2. The policy visualises integration of the assessment of performance with the process of learning and teaching, and utilising the process of evaluation to bring about qualitative improvement in education (para 8.23). In order to ensure that the method of assessment of students' performance is valid and reliable, the following short-term measures are proposed:-

(a) At the School Level:

- (i) Public examinations will continue to be held only at the levels of Classes X and XII;
- (ii) Decentralisation of the operation involved in the conduct of examinations to make the system work more effective.
- (iii) School Boards in certain States have set up a number of sub-centres to decentralise the conduct of examinations. Adoption of similar measures by other State will be pursued.
- (iv) In the event of decentralisation as indicated above, the State Boards of School Education would continue to get the question papers set and printed, consolidate the results of examinations and also undertake test checks on random basis of the functioning of the sub-centres; and
- (v) Spot evaluation of answer scripts.

(b) At the University Level:

- (i) Continuous institutional evaluation will be introduced at the post-graduate level, to begin with, in Unitary Universities, Deemed Universities and Autonomous Colleges;
- (ii) Students' performance will be indicated through letter grades, and assessment of overall performance will be on the basis of cumulative grade point average;

- (iii) Provision will be made for improvement of performances through subsequent appearances without involving any disadvantage to the candidates;
- (iv) External examinations will continue to be held by universities which have a large number of affiliated colleges and efforts will be made to improve the conduct of examinations through effective decentralisation as indicated for school level examinations;
- (v) Modifications in the qualifying recruitments for admissions in the universities and colleges will be examined to accelerate the process of change in the school level examinations.

(c) Conduct of Examinations:

- (i) The possibility of introducing legislation to define various malpractices connected with examinations and to treat them as cognizable and unbailable offences will be considered;
- (ii) Such laws will also, when enacted, make provision to prescribe the nature and type of punishments for various offences under the law, and to include within its scope persons engaged in various operations connected with examinations and also to provide protection to them; and
- (iii) Innovations and experiments in the conduct of examinations, like printing and distribution of question papers with questions arranged in different sequences to avoid copying and other unfair means in the examination halls.

3. In order to attain the objective of integrating the process of evaluation with teaching and learning, several long-term reforms will be necessary. For this purpose, the following programmes would be considered:

(a) At the School Level:

- (i) The Boards of Education will lay down the levels of attainment expected at classes V, VIII, X and XII;
- (ii) The Boards will also prescribe the learning objectives corresponding to these levels of attainment in terms of knowledge and comprehension, communication, skills in the application of knowledge, and the ability to learn;
- (iii) Schemes of evaluation consisting of examinations to test those aspects of learning which can be assessed through formal examinations, and the procedure for

assessing those aspects which cannot be tested through such an examination, will be developed. Abilities and proficiencies which can and should be assessed through institutional evaluation will be identified and procedures evolved for such evaluation;

- (iv) The development of schemes of evaluation is a continuing process. To provide professional support to this process, the Boards of Education will consider setting up a Consortium for initiating research and development in evaluation procedures and in the conduct of examinations;
 - (v) For performing this task, the Consortium will adopt selected schools as pilot centres and will hold examinations and award certificates for the students of such schools;
 - (vi) Before question papers are set, a detailed design will be evolved indicating the weightage to be given to various areas of content, types of questions and the objectives of teaching/learning;
 - (vii) Along with external examinations, continuous institutional evaluation of scholastic and non-scholastic aspects of education will be introduced;
 - (viii) Evaluation of students' performance will move towards cumulative grading system;
 - (ix) In the big States, the possibility of establishing more than one Board of Education will be considered, so that the number of students to be examined by one Board does not exceed one lakh; and
 - (x) Procedures will be developed for the appointment of Chairmen/Secretaries of Boards of Education and Controllers of Examinations to inspire confidence among public.
- (b) At the University Level:
- (i) The possibility of developing alternate system of evaluation in place of external examinations for affiliated colleges will be explored;
 - (ii) The question of some universities functioning only as examining bodies for a number of colleges will be examined;
 - (iii) Academic reforms visualised in the policy like flexibility in the combination of courses, modular structure, provision for accumulation of credits, redesigning of courses, etc. will lead to considerable

decentralisation in the evaluation process. Detailed schemes will be evolved to facilitate transition to new evaluation procedures concurrently with the changes in the content and structure; and

- (iv) An agency will be developed either as part of the AIU, or independently, for continuous research and development in evaluation procedure.

(c) General:

- (i) Integrity of the examiner is crucial to the credibility of the examination system.

This credibility can be established by the openness of the examinations. It has to be recognised that students have the inalienable right to scrutinise their answer scripts and its evaluation and also compare them with those of others:

- (ii) The practice of declaring results in terms of over-all divisions and pass/fail may be reviewed and substituted by a system of declaration of results in terms of marks/grades in each subject separately;
- (iii) Candidates should have the opportunity to improve upon their grades through subsequent attempts;
- (iv) Provisions should be made for clearing examinations in parts, in conformity with the modular pattern of courses;
- (v) The practice of scaling marks of different subjects which are not at par may be adopted in determining the grades;
- (vi) Intensive training programmes will be organised for paper setters;
- (vii) Question banks will be developed to assist paper setters;
- (viii) A detailed marking scheme will be developed to ensure objectivity in scoring answer scripts;
- (ix) Innovative ideas like open book examination, diagnostic evaluation etc. may be experimented with;
- (x) Separate certificates will be awarded showing the results of institutional evaluation and external examinations;
- (xi) The certificate of institutional evaluation may cover academic achievements as well as non-scholastic

aspects.

- (xii) Attempts will be made to move towards a situation in which only those who teach will evaluate their students;
- (xiii) Integration of evaluation with the process of teaching and learning will help diagnose the weaknesses and deficiencies in education. This diagnostic aspect will be utilised to develop remedial programme for weaker sections.
- (xiv) Facilities will be provided in schools and colleges for maintenance of students' records to facilitate continuous institutional evaluation; and
- (xv) Programmes of training and orientation of teachers will give special attention to new evaluation methodologies, setting of question papers, measurement of performances, etc.

(d) National Testing Service

A National Testing Service will be established and developed as a quality control mechanism to organise nation-wide tests on a voluntary basis so that norms can be evolved for comparability of performance and also for conducting independent tests.

XIX. YOUTH & SPORTS

I. THE PRESENT SITUATION

No information about the present position of health, yoga and physical education in the school education curricula of different States and Union Territories is available. However, at present, adequate participation and satisfactory performance in sports and physical education is not considered a necessary condition for promotion to the next higher class as in the case of other subjects.

2. The 'National Curriculum for Primary and Secondary Education - A Framework prepared by N.C.E.R.T. in December, 1985, suggests the following allocation of time in school education for physical and health education:-

(a) Lower Primary stage (Classes I - V)	10%
(b) Upper Primary stage (Classes VI-VIII)	10%
(c) Secondary stage (Classes IX and X)	8%

At the senior secondary stage, the scheme of studies prescribed by the CBSE is quite flexible so that the students can select their subjects leaving out the elective subject of physical education altogether.

3. The only reliable data about playfields and equipment at the school level are set forth in the Fourth All India Educational Survey conducted by the NCERT with 30th September, 1978, as the reference date. The findings of the Survey are as follows:-

(a) Availability of Playfields

Lower Primary Schools	46.54%
Upper Primary Schools	66.09%
High and Higher Secondary Schools	83.41%

(b) Games and Sports Equipment

Lower Primary Schools	15.42%
Upper Primary Schools	64.91%
High and Higher Secondary Schools	92.89%

4. At the stage of higher education, facilities for study of physical education at graduate, post-graduate and diploma/certificate levels are available only in twenty-nine universities located in ten States. No statistics about the physical facilities for games and sports in higher education sector are available, but it can safely be stated that in universities and colleges, games and sports have been neglected areas.

5. In the area of involvement of youth in national and social development, sports and games, etc., particularly through educational institutions, the National Service Scheme already involves about 7 lakh students in its programmes of social service and that

over a million students are enrolled under the National Cadet Corps at the stages of higher secondary and higher education, with about 4 lakhs out of these being at the latter stage. The National Service Volunteer Scheme provides opportunities, on a voluntary basis, though in a limited way at present, to fresh graduates to involve themselves in tasks of national development in rural areas. A large body of students out of a population of about 3 million in institutions of higher learning is thus not covered under any of the existing schemes.

6. Yoga is being taught in 366 Kendriya Vidyalayas out of the total number of 540 spread all over the country as an independent subject on an experimental basis since the academic year 1981-82. Yoga is also taught in the schools in Delhi Administration. Information regarding states is not available.

II. IDENTIFICATION OF KEY AREAS IN THE NATIONAL POLICY ON EDUCATION

7. Two key areas stand out, namely, (i) integration of sports and physical education in the learning process and evaluation of performance and (ii) involvement of youth in national and social development and sports and games, etc., particularly, through educational Institutions at the level of higher learning.

III. THE PROGRAMME

8. The following broad programme of action needs to be implemented:-

CURRICULUM

- i) At the lower primary stage, considering the age of children, there is need for considerable physical activity even while they are in school. This need not necessarily involve use of sports equipment. At this level, physical education and games should be only in the form of participation/activities and not in the form of textual reading/learning materials. A minimum of ten periods a week should be devoted for physical education and sports.
- ii) At the upper primary stage, while participation in activities relating to physical education and sports should be the main theme, some elements of textual materials could be introduced also. A minimum of one period a day should be devoted for physical education and sports at this stage.
- iii) At the secondary level again, one period a day should be devoted to physical education and games.
- iv) At the senior secondary level, some limited opportunities become available to students to take part in activities such as NCC and NSS. However, for such of the students who do not participate in these activities, participation in other organised endeavours related to physical education such as scouting and guiding, adventure activities, besides sports, should be made compulsory.

- v) In the sphere of higher education, the curriculum should provide compulsory participation of students, at least at the first degree level, in sports and games, physical education activities, NCC, NSS, scouting and guiding, adventure or other suitable activities.
- vi) The National Council of Educational Research and Training and the University Grants Commission, in concert with appropriate bodies of the State Governments and LNCPE and NSNIS, should finalize a model curriculum and syllabus in physical education including yoga and sports, that could be made applicable to the different stages of school and higher education. NCERT should also prepare the model text books on the subjects relating to physical education, sports and yoga.
- vii) Sports and physical education should be included in the evaluation of performance at different stages of education:

EVALUATION

- (a) At the level of school education, assessment of participation and performance in sports and physical education activities may continue to be done in the form of grading. However, the grade awarded to a child in sports and physical education should have the same weightage in the annual examination as is attached to marks and grades in other subjects. Grades in physical education and sports corresponding to failure should be clearly identified.
- (b) At the undergraduate level, regular participation in sports, NSS and other activities that may be specified, should be considered as a qualifying requirement for promotion to the next higher class and award of degrees. The percentage of attendance that would constitute regular participation in these activities will have to be laid down.
- (c) Where students outstanding in sports are unable, because of their participation in sports tournaments or coaching camps, to take their examinations at the appointed time, efforts will be made to provide facilities to them to appear at examinations later.

INFRASTRUCTURE

- viii) In order to make it possible that the above mentioned activities at the stage of school and higher education are included in the curricula and made part of evaluation, creation and supplementing of the available infrastructure in schools and institutes of higher learning would be necessary. The following measures will, therefore, have to be taken:-
 - (a) A quick survey should be undertaken by the Central/ State agencies of the availability of trained teachers

in the sphere of physical education and sports at the stage of school and higher education and also of the physical infrastructure available for these activities in institutions of higher learning.

- (b) Basing on the results of the survey, the States and Central agencies should draw up plans so that the necessary infrastructure is provided in all educational institutions, if possible, by the end of the Eighth Five Year Plan.
- (c) Full utilisation of the amount provided under the scheme of National Sports Organisation for promotion of sports in universities and colleges in Seventh Five Year Plan should be ensured. The detailed survey proposed with regard to the availability of sports infrastructure may be conducted by the UGC within the next one year so that the actual requirements of funds as may become necessary as a result of the survey could be built into the Eighth Five Year Plan.
- (d) The local village institutions should be prevailed upon to make available at least one acre of land for a lower primary school and 2.5 acres of land for an upper primary school for use as playgrounds. The local community should be encouraged to undertake the development of the land for sports and benefit of schemes of rural development also made available for this purpose.
- (e) As a general rule, it should be mandatory for a secondary or a senior secondary school to have playgrounds according to the prescribed norms before they are granted recognition by the appropriate State/Central authorities. Where however, due to unavoidable reasons land is not available, alternative arrangements by sharing of playgrounds by two or more schools or use of public land should be ensured.
- (f) On the basis of the data available in the 4th All India Educational Survey and the number of secondary and senior secondary schools in 1983-84, there are about 10,000 such schools not having playgrounds. These should be provided with playgrounds on priority.
- (g) In consonance with National Policy on Education -1986 and National Sports Policy-1984, the Central and State Governments should ensure, if necessary by suitable legislation, that available playfields and stadia in rural and urban areas are preserved for sports purposes and progressively more available open spaces made available for sports and physical education activities.
- (h) In towns, four to five acres of land should be earmarked through Master Plans/Town Plans/Local Plans for use as common playgrounds.

- (1) As a rule, no college either general or technical, should be allowed to come up without ensuring availability of adequate playfield facilities.
- ix) Where playfield facilities and other infrastructure are not readily available in an institution, sports and physical education syllabi should be so designed that they lend themselves for evaluation of performance on a basis comparable to that obtaining in institutions with requisite facilities.
- x) The requirements of equipment for games and sports, keeping in view the rise in prices, are large. On a rough estimate the following minimum amounts per annum should be provided for institutions at various levels:

Lower Primary Schools	Rs. 1,000
Upper Primary Schools	Rs. 5,000
Secondary/Senior Secondary Schools	Rs.15,000
Colleges	Rs.25,000
University Campuses	Rs.1,00,000

Twice the amounts mentioned above should be provided to the institutions as non-recurring expenditure.

- xi) Integration of physical education and sports with the learning process would require provision and orientation of physical education teachers in various educational institutions. While generally institutions of secondary/senior secondary level have physical education teachers on their staff strength, and a few of the upper primary schools also have physical education teachers, there are no separate physical education teachers in the lower primary schools. To fill in this void:

TEACHERS

- (a) Training in physical education should be made part of the curriculum of teacher training institutions at the elementary level (primary and upper primary) as also in the teacher training colleges.
- (b) At least, one teacher in each primary and upper primary school should be exposed to an orientation course in physical education in a phased manner during the vacations commencing from summer break in 1987. The physical education teachers of the nearby secondary schools can be the resource personnel to begin with. The number of the teachers to be orientated will be about 6,00,000. They could be covered at the rate of about 2,00,000 per year. Thus by the end of the Seventh Five Year Plan each lower and upper primary school would have at least one teacher orientated to physical education.
- xii) Since teachers in physical education are available in secondary and senior secondary schools, they may be provided special orientation in coaching for games and

sports. The number of such schools being about 60,000, the number of physical education teachers therein may be around 1 lakh. These could be given orientation courses during summer vacations commencing from summer of 1987 so that all are covered by the end of the Eighth Five Year Plan.

- xiii) At the level of higher education with collaborative arrangements between LNCPE/NSNIS and the concerned colleges, refresher training programmes will have to be conducted for the Directors of Physical Education of colleges and universities. These institutions should be able to meet the cost of these programmes within their own budgets.

YOUTH

- xiv) The youth of the country comprising about 30% of the population between the age group of 15-35 constitutes a vital and vibrant human resource of the nation. They have a right as well as an obligation to make their contribution in national affairs in general, and national development in particular. The need, therefore, of providing increasing opportunities to young persons to enable them to develop their personality, upgrade their functional capabilities, make themselves economically productive and socially useful, is fully recognised. The Central and State Governments should provide such opportunities on a large scale.
- xv) Enrolment under the National Service Scheme is expected to go up from about six lakh students at the commencement of the Seventh Five Year Plan to about one million students at the end of it. The increase in enrolment under NSS at the rate of 10% per annum should be kept up even during the Eighth Five Year Plan, so that the enrolment increases to about sixteen lakh students at the end of Eighth Five Year Plan.
- xvi) The National Service Volunteer Scheme which provides an opportunity to educated young persons to share in the task of development in the rural areas, will be greatly strengthened and expanded during the Seventh Five Year Plan and beyond. Further, towards this end, an effective programme of training young persons who opt to become national service volunteers will be implemented and opportunities for such volunteers to work in voluntary youth organisations and other sectors also provided.

YOGA

- xvii) Efforts should be made to gradually provide instruction in Yoga at all stages of education up to the higher secondary stage.
- xviii) Yoga should be introduced in the Teacher Training Courses at different levels. Further, for providing in-service training to the existing teachers, well-known institutions

in the country should be identified and the teachers provided with training of adequate duration. Having regard to the nature of yoga, the process will have to be slow and no time limit can be laid down.

GENERAL

- xix) Some States have already set up special sports schools and hostels for nurturing of sports talent. There is also a central scheme for setting up of sports hostels. This endeavour needed to be encouraged and adequate funds provided in the State and Central Plan budget as the case may be.
- xx) The UGC have accepted the report of a committee constituted by them to consider the introduction of a 3-year degree course in physical education, health education and sports in multi-faculty colleges and advised the universities to introduce such a course in one College of General Education in a district on a selective basis. These colleges with the 3-year degree course should also be developed to become institutions where excellence in sports is actively fostered. The U.G.C. will have to work out the actual number of such colleges for the Seventh Five Year Plan and beyond.
- xxi) In keeping with the principle that physical education should be given the same status in educational institutions as other subjects, the physical education teachers at different levels should have the same status as that enjoyed by the teachers in other disciplines. In higher education, physical education should be one of the elective subjects at the undergraduate level, at least in some institutions.
- xxii) For effective implementation of the various programmes mentioned above, some integration at the administrative level in States will be necessary. For this purpose, there should be an officer of the level of Joint Director exclusively looking after Physical Education and Sports in the office of the Director of Public Instructions/Director of School Education/Director of Collegiate Education.

TARGETS AND PHASING

- 9. (i) Since over 80% of secondary and higher secondary schools have playgrounds already and 92% of them have the necessary sports equipment, the integration of physical education and sports into the learning process and evaluation can begin as soon as the model curriculum and syllabi for this stage have been finalised. It might be possible to introduce this from the academic year 1987-88.
- (ii) The integration and evaluation at the lower and upper primary stages can begin when the orientation of at least one teacher in physical education from each school has been

completed. The process is likely to take about three years as mentioned earlier, and it may, therefore, be possible to make integration and evaluation at this stage mandatory only from the first year of the Eighth Five Year Plan. Meanwhile, wherever facilities exist and physical education teachers are available, Primary schools can be encouraged to lay stress on physical education and sports.

- (iii) At the first degree level, participation in sports and games, social service activities like NSS and other beneficial activities like NCC, adventure, scouting and guiding etc. can be made compulsory sooner than later since a great deal of innovation is possible with grown up students. By utilising all the different possible activities suited for this purpose, it might be possible to start integration and evaluation of performance from the year 1987-88. However, this needs to be looked into greater detail by the UGC and realistic targets set.
- (iv) The provision of equipment and upgradation of sports facilities in all the institutions will go on for quite some time as the States will have to build requirements of funds into their Plans. Therefore, as a general principle, the whole process in respect of lower and upper primary schools could be targeted to be completed by the end of the Eighth Five Year Plan with about 25% of schools not having playground facilities and equipment being covered in the Seventh Five Year Plan. In respect of the secondary and higher secondary schools, with funds becoming available, 50% of schools, not having playgrounds, could be covered in the Seventh Five Year Plan and the remaining 50% in the initial years of the Eighth Five Year Plan.

MONITORING AND EVALUATION

10. As made clear in the National Policy on Education-1986, sports and physical education and also rendering of social service by students while learning, are an inseparable part of the learning process and, therefore, the same agencies at the State and Central levels should monitor the implementation of these programmes as will monitor the general process of education at the levels of schools and higher education.

XX. LANGUAGE DEVELOPMENT

POLICY

The National Policy on Education, 1986 has reiterated in respect of languages the policy elaborated in the National Policy on Education, 1968. Briefly, the policy emphasises the adoption of regional languages as the media of instruction at the university stage; vigorous effort at implementation of the three language-formula; improvement in the linguistic competencies of students at different stages of education; provision of facilities for the study of English and other foreign languages; development of Hindi as the link language, as provided for in Article 351 of the Constitution; teaching of Sanskrit at the university stage as part of certain courses like Indology, Indian History, Archaeology etc.; serious effort at translation of books from one language to the other; and the preparation of bilingual and multi-lingual dictionaries.

MEDIUM OF INSTRUCTION AT THE UNIVERSITY STAGE

Present Position:

2. The emphasis in the Policy is on the adoption of modern Indian languages as the media of instruction at the university stage. However, the need to provide education through the mother tongue, which may be different from a modern Indian language included in the VIII Schedule, is recognised on academic grounds. The Constitution of India recognises, in respect of linguistic minorities, the desirability of providing instruction through the mother tongue for first five years of education (Article 350-A). Every effort is, therefore, required to implement this obligation, although a number of difficulties are likely to be encountered: administrative and financial feasibility of providing instructional facilities through a variety of mother tongues, difficulty to use some tribal languages as media of education etc. In the context of these difficulties switch over to a modern Indian/regional language has to be ensured as early as possible. The Safeguards for Linguistic Minorities, recognising the difficulties, recommended that "for the purpose of providing instruction in the mother tongue of the linguistic minorities at the secondary stage of education, the modern Indian languages in the Eighth Schedule of the Constitution as well as English, should be used as media".

3. Modern Indian languages are already being used as media of instruction at the school stage. The need is for their progressive adoption as media at the university stage. To facilitate this, 7000 university level textbooks have been

produced by the State agencies and some universities with the assistance of the Government of India. The off-take of these books is not satisfactory. Consequently, large unsold stocks of books have accumulated in the States, the main reasons being (a) preparation and production of these books has not synchronised with the universities' decision to switch over to modern Indian languages; (b) university teachers having received education through English find it difficult to teach through the Indian languages; (c) unlike the school stage, control over prescription of textbooks is not tight, with the result that, for various reasons, book produced by private publishers get generally recommended; and (d) Indian language-medium courses are generally not popular with students because of the lack of professional comparability and poor employment potential.

Pre-requisites

4. The primary pre-requisite appears to be specific decisions by the State Governments, in consultation with universities, to progressively adopt the modern Indian languages as media of instruction in all subjects and at all levels.

5. A critical review of the experience of the programme of production of university level textbooks is required. A decision to constitute a review committee has already been taken. The study and recommendations of the committee are likely to assist in formulating a more worthwhile and feasible programme for implementation. The review is proposed to be completed early.

Specific Action

6. The main action would include; (a) preparation and production of textual materials/reference books in modern Indian languages on a much larger scale than undertaken hitherto; (b) orientation of university teachers; (c) translation of text books, reference books from English into Indian languages; and (d) regular review and monitoring of the effort.

Role of Agencies

7. The State Governments would have to, in consultation with universities and the University Grants Commission, identify measures to ensure the adoption of modern Indian languages as media of instruction. With the assistance of expert institutions, a feasible and time-bound programme of action would have to be worked out. The preparation of university level books in regional languages, being undertaken with the assistance of the Government of India, would have to be speeded up by State level agencies, ensuring at the same time that books so prepared are used in the system.

8. The Ministry has been receiving requests from State Governments to continue assistance beyond Rs.1.03 crores provided/committed to them for creating a revolving fund. In case

of some participating States, the full amount has not been released. Apart from releasing the balance amount to those States which have not yet utilised the admissible assistance, there is need to consider the possibility of providing more assistance to States to which the admissible amount has already been released.

Monitoring

9. At the Central level, the Commission for Scientific and Technical Terminology which has been coordinating the programme would need to be strengthened to undertake more effective monitoring of the programmes and for organizing orientation courses for teachers of various disciplines. The University Grants Commission could set up a small cell for monitoring the adoption of the regional languages as media of instruction. In each university, a cell could be established for monitoring and facilitating the switch-over to regional languages.

IMPLEMENTATION OF THE THREE LANGUAGE FORMULA

10. The Three Language Formula provides for a study of a modern Indian language, preferably one of the Southern languages, apart from Hindi and English in the Hindi speaking States and of Hindi alongwith the regional language and English in the non-Hindi speaking States.

Present Status

11. The implementation of the three language formula has been less than satisfactory. The main deficiencies include the following: (a) all the languages are not being taught compulsorily at the secondary stage; (b) a classical language has been substituted for a modern Indian language in some States; (c) no provision exists for the teaching of South Indian languages for which the formula indicated a preference, in the Hindi speaking States; (d) duration for compulsory study of three languages varies; and (e) competency levels to be achieved by students in respect of each language have not been precisely specified.

Pre-requisites

12. The effective implementation of the three language formula would require: (a) decision by States, State Boards of Secondary/School Education, etc. to make the study of three languages compulsory at the secondary stage; (b) prescription of the Class from and the duration for which three languages will be taught; (c) specification of objectives of teaching different languages; and (d) specification of levels of language proficiency to be reached in respect of each language.

Specific action

13. The action required would include:

- (i) The Central Government should continue to assist the non-Hindi speaking States for the appointment of Hindi teachers.
- (ii) The pattern of Government of India's assistance should be restored to 100 per cent of the approved expenditure on the appointment of Hindi teachers as was available till 1978-79.
- (iii) On the pattern of the scheme for appointment of Hindi teachers in non-Hindi speaking States cent per cent assistance should be given to Hindi speaking States for the appointment of modern Indian language teachers, preferably teachers of South Indian languages, as the three language formula suggests.
- (iv) Apart from establishing teacher training institutions for training of Hindi and modern Indian language teachers in States, facilities for training of language teachers need to be augmented and improved in existing teacher training colleges.
- (v) The Ministry's language institutions should be strengthened to undertake programmes facilitating teaching of languages, particularly research in methodology of teaching languages and experimentation in the use of computers and new communication technologies.

Physical Targets

14. The number of teachers to be appointed for teaching of languages would depend upon the number of schools and students and the requirements of the syllabus of secondary schools. With the decision to make study of three languages compulsory at the secondary stage—to be taken by the State Board/States would have to work out the exact requirement of teachers and provide for their salaries in the State budgets. While most of the language teachers required would be provided for under the normal programmes of the States for provision of educational facilities, the Government of India could share part of the financial burden of the States.

Roles of Agencies

15. A proposal, seeking the restoration of the earlier pattern of assistance, will be formulated by the Ministry. With cent per cent assistance Hindi speaking States will find it easier to appoint a much larger number of teachers. A proposal for assisting Hindi speaking States to appoint modern Indian language teachers in the Seventh Plan has also been worked out.

16. The State Governments and the Boards of School/Secondary Education would be primarily responsible for implementation and monitoring of the programme. They would have to take decision to prescribe on compulsory basis the study of three languages. The scheme of examinations would have to prescribe and evaluate the competency levels to be achieved in different languages.

Monitoring

17. The Kendriya Hindi Sansthan, Agra, the Central Institute of Indian Languages, Mysore, the Central Institute of English and Foreign Languages, Hyderabad, and the National Council of Educational Research and Training will establish cells to monitor the programme. They will also be responsible for providing academic/technical assistance to State Boards and educational institutions.

IMPROVEMENT IN THE LANGUAGE COMPETENCIES OF STUDENTS

Present Status

18. The proficiency of students in using languages is reported to have deteriorated over the years. No definitive evidence is, however, available to indicate whether students enrolled in and/or completing different levels of education are less proficient in the use of languages than those who completed education 15-20 years back. Irrespective of the expressed opinions, improvement in language skills of students is important, considering the significance of language proficiency for cognitive development and further learning.

Pre-requisites

19. It would seem necessary, among other things, to: (a) undertake study of the language attainments of students; (b) specify objectives of teaching different languages, particularly at the school stage where three languages are to be studied compulsorily; and (c) identify language skills that students must attain in terms of the specified objectives.

20. The Kendriya Hindi Sansthan, NCERT, Central Institute of Indian Languages, Central Institute of English and Foreign Languages, Regional Institute of English, Bangalore and H.M. Patel Institute of English, Vallabh Vidyanagar, have been requested to (i) collaborate in the task of undertaking a systematic study of language attainments of students; (ii) undertake studies with the purpose of specifying objectives of teaching various languages; and (iii) consider the possibility of using the English language proficiency test developed at the instance of the Bureau, by NCERT, Regional Institute of English, Bangalore, CIEFL, Hyderabad and H.M. Patel Institute of English, Vallabh Vidyanagar for foreign students seeking admission to institutions of higher learning in India, with a view to determining the English language proficiency of Indian students completing Class XII. The Central

Institute of Indian Languages, Kendriya Hindi Sansthan and Dakshin Bharat Hindi Prachar Sabha have been provided with BBC micro computers for undertaking experimentation in computer aided language instruction and learning. The CIEFL has set up an Educational Media Research Centre for English language teaching. The University Grants Commission has identified and is assisting some universities for strengthening arrangements for English language teaching. Summer institutes for orientation of university/college teachers of English are also being undertaken.

Specific Action

21. Apart from continuing these and other similar activities, some specific programmes to be taken up for implementation, will include: (a) development of textual materials for ensuring attainment of specified language abilities; (b) preservice and inservice training of teachers in the methodology of language teaching; (c) research in the methodology of effective teaching-learning of languages, with particular emphasis on the use of computers and other communication media; (d) infrastructural facilities of language and other training institutions for training of teachers and experimentation in computer aided instruction and the use of new communication technology; (e) designing of specialised/bridge/remedial courses for school and university students.

22. The programmes included in the Seventh Five Year Plan of institutions provide for some of the activities listed earlier. A scheme under which assistance will be provided to States and some State level institutions for in-service training of English language teachers and production of textual materials, has already been developed. Financial assistance is being given to State Governments for establishment of District Centres for English language teaching. The augmentation of the activities of these institutions will require additional provision.

Roles

23. The language institutions of the Ministry and NCERT will provide academic and technical inputs in the form of prototype textual materials, modules for inservice training of teachers, training of key personnel, software for computer-aided instruction and for transmission through radio and television, etc. The implementation of the plan of action on a sufficiently large scale, covering as many institutions as possible, will be the responsibility of State Governments/State Boards of School/Secondary Education and universities. For instance, once objectives of language teaching and specification of language abilities have been determined necessary changes would have to be incorporated in the syllabi, text books and scheme of examinations. In respect of universities, the University Grants Commission and universities will assume responsibility for above functions.

Monitoring

24. The Kendriya Hindi Sansthan for Hindi, the CIEFL for English and the CIIL for modern Indian languages will, in collaboration with other institutions, assume the responsibility for providing research and training inputs. U.G.C. can coordinate and support the programmes for university students and teachers. These organisations will also be involved in monitoring the plan of action.

TRANSLATION OF BOOKS AND PREPARATION OF BILINGUAL AND MULTI-LINGUAL DICTIONARIES

Present Status

25. At present translation of worthwhile books and their production is undertaken by a number of governmental and non-governmental agencies - the National Book Trust, the Sahitya Academy and State Academies, private publishers etc. However, the availability of the translated books in different Indian languages does not seem to be satisfactory. Dissatisfaction with the quality of translation has also been voiced which may be due to non-availability, in sufficient number, of good translators.

26. As regards dictionaries, the Central Hindi Directorate has already brought out 19 dictionaries. The manuscripts of other 41 dictionaries are either in press or in various stages of preparation. The Commission on Scientific and Technical Terminology has also brought 23 definitional dictionaries on science and social science disciplines. Similarly, the Bureau for the Promotion of Urdu has published seven glossaries while work on 8 dictionaries is in progress. The State level agencies also undertake similar work. The Central government is also assisting in the preparation of dictionaries in Sanskrit. The activities of the governmental agencies do not represent the total effort. Private publishers also bring out bilingual dictionaries.

Pre-requisites

27. Information on the magnitude of current effort is not available. There is, therefore, need for surveys which will indicate (a) extent of existing governmental and non-governmental effort (b) capabilities of agencies undertaking translation work and (c) arrangements for training of translators.

28. As in the case of translations information on the magnitude of the total effort and its quality is not available in respect of dictionaries. A status report on dictionaries available, their quality and facilities for preparing dictionaries at different levels, is needed. This study should also provide information about the gaps that exist. The Central Hindi Directorate and CSTT in collaboration with State level agencies, could be entrusted with this responsibility.

Specific Action

29. While the studies are proceeding, immediate effort could be made by the National Book Trust and Sahitya Academy to identify, translate and publish some books from each language into other Indian languages. Identification of these books could be done by the Sahitya Academy with the assistance of State academies.

30. The effort at translation should be systematic, of high quality and of sizeable magnitude. There is also the need to coordinate various programmes of translating books and training of translators. These tasks can more effectively be accomplished by a Central Translation Bureau. The functions of this Bureau would be different from those of the Translation Bureau functioning under the Department of Official Languages of the Ministry of Home Affairs.

Monitoring

31. At the Central level the Central Hindi Directorate, Bureau for the Promotion of Urdu, Commission for Scientific and Technical Terminology, the Central Institute of Indian Languages and the proposed Central Translation Bureau will be made responsible for identifying gaps that exist and for developing suitable programmes of support for the preparation of bilingual and multilingual dictionaries.

DEVELOPMENT OF HINDI AS LINK LANGUAGE

Present Status

32. The need for developing Hindi as the link language has been emphasized in the National Policy on Education. At present the Kendriya Hindi Sansthan, the Central Hindi Directorate and the Commission for Scientific and Technical Terminology are undertaking a number of activities; organization of institutional and correspondence courses for teaching of Hindi through various languages; preparation and production of materials; display and free distribution of Hindi books; organization of seminars/workshops for non-Hindi speaking writers; evolution of scientific and technical terminology etc. A large number of voluntary organisations in both Hindi and non-Hindi speaking States are being supported for organization of Hindi teaching classes, publication of materials, training of teachers, etc.

Pre-requisites

33. A general consensus among the States about the use of Hindi as link language seems necessary. The effective implementation of the three language formula is also necessary to promote adequate level of proficiency in the use of Hindi among people.

Specific Action

34. Information on the impact of various programmes, implemented in pursuance of Article 351 of the Constitution, is not available. Systematic studies are required to determine the impact and effectiveness of the present effort. The other action would include: (a) exploration of the possibility of developing a core vocabulary for general use; (b) augmentation of effort to produce dictionaries, glossaries and conversational guides; (c) augmentation of the facilities for correspondence courses for teaching Hindi through various Indian languages; (d) increased assistance to voluntary organisations for teaching of Hindi; (e) preparation of self-instructional materials and use of modern communication media; (f) establishment of Hindi resource centres in non-Hindi speaking States; and (g) free distribution of Hindi books throughout the country.

Roles

35. The implementation of intention of Article 351 of the Constitution should not be regarded as the sole responsibility of the Central Government. States should make effort to promote knowledge and use of Hindi in their territories. The Kendriya Hindi Sansthan, CHD and CSTT would provide academic and technical assistance for popularisation and promotion of Hindi. Specific cells for monitoring various programmes will be set up.

PROMOTION OF INTER-DISCIPLINARY RESEARCH IN SANSKRIT AND INDOLOGY

Present Position

36. The National Policy on Education has emphasised the need for research in Indology, particularly with a view to "delving into India's ancient fund of knowledge and to relate it to contemporary reality." It has been stated that this "effort will imply the development of facilities for the intensive study of Sanskrit and other classical languages."

Present Status

37. Apart from the fact that the quality of research undertaken in universities and institutions of higher learning in social sciences and humanities leaves much to be desired, research in manuscripts and materials available in Sanskrit, Pali, Prakrit, old Tamil and other classical languages has not been taken up with any degree of seriousness in India, particularly with a view to establishing the validity and relationship of the knowledge and experience embedded in these languages to contemporary scientific thought and technological development.

38. At the time of formulating the Seventh Five Year Plan, the establishment of an International Institute was proposed. The objectives envisaged were to enable scholars to find the roots of a common world culture in Indian and foreign classical literature.

It was felt that classical languages like Greek, Latin, Old Tamil, Sanskrit etc. have several common features and a study of these would not only help to project Indian culture but also enrich modern ideas and concepts.

Specific Action

39. Considering a definite policy recommendation in the National Policy on Education, 1986, it is proposed to pursue the proposal to establish an International Institute for the promotion of Indology and Classical languages. The specific action required would include: (a) a firm decision by the Ministry to establish such an Institute; (b) provision of outlay for its establishment, (c) establishment of an autonomous Institute under the Societies Registration Act 1860; (d) preparation of the constitution, bye-laws etc. of the proposed Institute; (e) appointment of required academic and supporting staff.

ROLE OF THE GOVERNMENT

40. A small group of experts drawn from various disciplines will be constituted to work out the structure and roles of the proposed Institute. This exercise will be completed early.

POLICY-PLANNING FOR LANGUAGE DEVELOPMENT

41. The decisions about language policy and the development of languages are taken at various levels—Central and State Governments, universities, Boards of Secondary/School Education etc. Consequently, there is no uniformity on the language policy followed in education. Implementation of the policies has also not been effective for want of regular monitoring. Although the Three Language Formula was arrived at through consensus and adopted in the context of social and political considerations, in actual implementation substantial modifications have been made in it. In recent years, the effort of the States to determine the relative place of various languages in education has become a matter of considerable argument and agitation. In view of these rather unpleasant developments, it would seem desirable to (a) undertake a critical review of the language policies being adopted at various levels, (b) suggest a policy which would bring some uniformity about the place of languages in education; and (c) identify directions on which language development should be undertaken. For this purpose, it is suggested that a Standing Committee of the Central Advisory Board of Education may be constituted. The Bureau of languages of the Ministry would function as its secretariat.

XVI. THE CULTURAL PERSPECTIVE

BROAD PARAMETERS OF THE STRATEGY

The basic emphasis in interlinking Education and Culture would be on the development of a child's personality particularly in terms of helping the child to discover his latent talent and to express it creatively. This Plan of Action envisages development of a progressive sequence from the pre-primary stage to the University level. The chief features of the Plan of Action may be enunciated as under:

- a) students will be expected to learn in a participative process;
- b) the means and material used for cultural exposure would be simple, inexpensive and related to their immediate environment;
- c) over a period of time, the concept of cultural neighbourhood would be evolved, in which the community would be expected to play a significant role in terms of its help and involvement in various forms;
- d) a special emphasis would be given to curriculum reorientations and motivating teachers to interact with the students by suitable adjustments in pre-service and inservice training courses;
- e) with a view to encouraging students and youth in cultural and allied activities their interest in them will be appropriately reflected in their result sheet.

2. This Plan of Action would be phased over the 7th Plan and 8th Plan periods. The thrust in the first instance would be on building up a pervasive consciousness of India's cultural heritage through curriculum changes, utilisation of local material and community interaction. This will be followed by stress on specialisation of courses and sophistication of cultural software. The momentum would be built up by extensive networking of cultural and educational institutions so as to make an optimal use of cultural expertise, facilities and materials.

PRE-PRIMARY SCHOOL STAGE

OBJECTIVE

3. The main objectives at this stage would be:
 - a) to arouse in the child certain elementary sensitivities towards environment;
 - b) to help them learn through playing freely with natural material like clay, sand, flowers and leaves;

- c) to help them learn through movement and sound by singing and dancing together and by exposure to natural environment to participate in the joy of sensing colours, forms and rhythms.

PLAN OF ACTION

- 4. The main accent of this programme would be on the following:
 - a) preparation of a 'Cultural Primer' as a kind of handbook for teachers, workers engaged in institutional care of children at the pre-primary level. This would cover pre-primary nursery, anganwadi and other network of institutions;
 - b) the community through Panchayats and other civic bodies would be motivated to provide facilities like open spaces, other incentives to familiarise children with toys, inexpensive material like posters, pictures, clay models etc. depicting cultural motifs.

SUBSEQUENT PROGRAMME

- 5. Subsequently, action would be taken to take care of the development of a certain basic core of facilities to cover all those children who are not looked after by an institutional or departmental agency. This would require the following action:
 - a) provision in each village and for each segment in urban areas minimum facility for playing space or park for children at this stage;
 - b) Training of pre-school teachers in integrating cultural activities with pre-school learning programmes;
 - c) preparation of educational toys and games for pre-school students which are indigenous and aesthetic in quality and safe for use by small children.

PRIMARY SCHOOL STAGE

OBJECTIVE

- 6. The main objective at this stage would be:
 - a) to impart the child with a basic core of facts about India's cultural heritage;
 - b) to integrate and develop students' physical and cognitive skills;
 - c) to create through awareness a feeling of love for India's natural and cultural heritage;
 - d) to encourage participation of students in creatively meaningful activities and initiating them in collective singing and other arts.

PLAN OF ACTION:

7. The chief aspects of the Plan of Action in this period would be to take care of the following:

- a) extensive revision of the textbooks to reflect cultural awareness as part of the school curriculum;
- b) reorientation of teachers' training programmes to give them the capability of imparting instruction in theoretical and demonstrative methodologies in cultural instruction;
- c) extensive training programmes for in-service teachers in each district for specified durations through pooling of resource personnel;
- d) inducing students to learn by participating in community singing, in painting and dancing together and other manifestations of cultural inclinations; spotting out talent in arts and other cultural activities would also begin at this stage;
- e) building up community interaction by inviting local artists and craftsmen to demonstrate and teach students their crafts like clay work, wall paintings, carpentry, puppetry, folk dancing and singing;
- f) setting up of schools museum corners largely with collections of students themselves in the form of stones, feathers, leaves etc;
- g) organisation of tours in the neighbourhood particularly to monuments and places of historical and cultural significance.

8. In subsequent years, the above activities would be systematised further and the emphasis would be on provision of more developed facilities and specialisation of pre-service and in-service training for the teachers. This would cover the following action:

- a) preparation of special books, educational material and audio visual facilities for primary schools;
- b) earmarking of separate rooms for cultural activities equipped with museum corners, musical instruments, pictures and posters for students;
- c) institutionalising community interaction in terms of seeking help of local artisans and craftsmen including performing artists like dancers, singers on an organised basis of association, through honorarium, fees, incentives etc.

MIDDLE/HIGH/SECONDARY SCHOOLS

OBJECTIVE

9. At this stage, the main objectives in cultural instruction would be:

- a) to further strengthen and build up in students love and understanding of India's natural and cultural heritage;
- b) to nurture in students an aesthetic approach based on perception of beauty and a perspective beyond immediate emotional or other passions;
- c) to impart to the student's personality a broad-based approach that reflects values of secularism, nationalism and consciousness of their constructive role in the larger destiny of India.

PLAN OF ACTION:

As in the earlier stages of education, approach would be to enlarge cultural activities mainly through students' own participation, community help and building up of certain core facilities. This plan would cover:

- a) provision of at least one core/resource teacher for culture in each school;
- b) reflection of diverse images of natural and cultural heritage in the school curriculum;
- c) imparting the curriculum with a distinct outlook particularly in terms of social studies and history by correcting historical distortions and by giving a value orientation to lessons drawn largely from Indian heritage and great Classics;
- d) organisation of systematic visits and to us to monuments, museums and sanctuaries;
- e) building up of a system of cultural demonstration by local artists and training in productive work as a part of Socially Useful Productive Work;
- f) development of conservation ideas by adoption of monuments by the students and the community and helping to clean and safeguard these monuments;
- g) inducing among the students an idea of service by motivating them to participate in cleanliness operations, literacy drives, conducting of surveys with particular emphasis on the value of dignity of labour;
- h) setting up of museum corners with models, illustrations, posters, charts, books and with objects collected by students from their neighbourhood including local crafts, flowers, leaves, feathers etc.

10. In subsequent periods, these cultural exposures would be enlarged in terms of thematic coverage with broadbasing of participation and induction of technology. These aspects would cover the following action:

- a) the network of Navodaya Vidyalayas would be used for development of resource centres in each district to share with other schools in the neighbourhood the facilities of exhibitions, projections through audio-visual technology and models for cultural soft-ware based on the peculiar features of the area;
- b) extensive cultural meets would be held at the inter-school, inter-district and later at inter-State levels to spot creative talent through a system of awards and scholarships. The idea would be to honour the creatively distinguished as also the dedicated through a system of incentives;
- c) networking of various schools for visits to museums, libraries, galleries and monuments maintained by the State and the Central Archaeological Surveys;
- d) provision of a cultural kit containing an audio visual and related educational material on Indian culture in all High Schools through Central/State sharing scheme;
- e) special courses for cultural reorientation of teaching and administrative personnel connected with educational institutions;
- f) development of software for satellite programmes on India's natural and cultural property with particular reference to themes of creativity and inculcation of values;
- g) building up of a cultural resurgence through system of awards and incentives for honouring teachers and trainers for their expression of cultural creativity and devotion to its promotion.

UNIVERSITY LEVEL

OBJECTIVE

11. At the college and university level, the main emphasis would be on the following aspects:

- a) broad-basing and diversifying of cultural courses like music, fine arts, performing arts, etc.
- b) correction of historical and cultural distortions by reassessing critically the content of existing courses in social sciences, humanities, languages etc.;
- c) imparting of cultural instruction of students engaged in highly specialised science or technical courses so as to give their personality an all-round development;

- d) development of special courses in technical institutions like archaeological engineering, relevance of India's architectural heritage, maintenance of monuments, museology, musical composition etc., apart from performance. PLAN OF ACTION:

12. The following action is envisaged:

- a) opening of the Fine Arts Departments in Universities;
- b) setting up of special assessment studies to appraise the cultural thrusts of the existing curriculum and revision of textbooks;
- c) earmarking of separate space in colleges for painting gallery of art, facilities for photography, sculpture etc.:
- d) colleges would be encouraged to have societies/groups of students devoted to drama, dance, literature, music etc. Special assistance could be provided for encouraging these voluntary activities by the students;
- e) networking with schools in the neighbourhood area for putting up of mobile exhibitions or conducted tours by school students to these special rooms/galleries put up for cultural displays.

13. In the later phases, emphasis would be on enlarging the base as also sophisticating courses and technology connected with culture. This would cover the following activities:

- a) development of specialised courses like archaeological engineering, traditional Indian architecture and its relevance to contemporary context, use of inexpensive local material for building etc. In engineering, technical institutions particularly Regional Engineering Colleges, IITs, State Engineering colleges and Institutions of Architecture;
- b) capsule courses on these subjects in institutions like Polytechnics and ITIs;
- c) special fellowships/scholarships/incentives would be given on the basis of State and national competitions for creative and performing arts.

IMPERATIVE REQUIREMENTS OF INSTITUTIONAL INFRASTRUCTURE

14. It is imperative that the Plan of Action should have an institutional infrastructure for its implementation and monitoring. This aspect has certain crucial parameters and these could be enunciated as follows:

- a) strengthening of existing infrastructure;

- b) evolving a system of organised networking with institutions in the neighbourhood by developing linkages between Central and State institutions through a 'cultural spread' effect;
- c) innovating new institutions to fill the present cultural void.

PLAN OF ACTION: STRENGTHENING OF EXISTING INSTITUTIONS

I. NCERT

This institution will have a crucial role to play in revision and reorientation of curriculum at the school level. In this connection, it will be required to coordinate its activities with SCERTs and State Departments. In this context, it could be used as a channel for funding as also as an institution for monitoring.

II. CENTRE FOR CULTURAL RESOURCES AND TRAINING (CCRT)

This institution will be required to play administrative and software development role to the activities of NCERT in respect of framing of curriculum. Its current programme of training of resource personnel in cultural instruction will have to be further expanded. It would be required to open State chapters/cells in close coordination with State Departments of culture and other institutions. Its chief task would concern evolving of inexpensive but effective cultural software mainly with local material. In close collaboration with NCERT, it would also develop models for cultural technology like audio visual projections, sets of posters, display albums etc.

III. UNIVERSITY GRANTS COMMISSION

The University Grants Commission would, through a special arrangement in its organisation, monitor promotion of arts through institutions. It would also evolve an innovative scheme to encourage and finance participation by local communities, State Governments, Voluntary Agencies in promoting art education through courses at the college and university level.

IV. ZONAL CULTURAL CENTRES

The networking of the entire country through Zonal Cultural Centres will help in provision of inter-State cultural linkages and affinities. These Zonal Cultural Centres would also build up exhibitions and displays of performing arts not only in terms of their emphasis on revival of languishing art forms but also in making the student community aware of the rich diversity of India's cultural heritage.

V. SCOUTING MOVEMENT

This movement has very pervasive coverage in the country. Through its inexpensive yet disciplined activities, the Scouting

and Guiding and to the extent possible Rovering movements would be used to take care of activities like community singing, protection of monuments, cultural camps, rallies, jamborees and inter-State Camps. This movement is capable of achieving a great deal with very little investment.

VI. N.C.C., N.S.S. AND N.Y.Ks.

These institutions would be required to encourage cultural instruction particularly in terms of community interaction through camps and through organised and disciplined activity related to protection of cultural and natural environment.

VII. MUSEUMS AND ARCHAEOLOGICAL SURVEYS

While these institutions have at national and State levels made a beginning to interact with educational institutions, in the proposed action plan, this activity would be systematised. The network of museums in the country and the protected monuments maintained by the Archaeological Surveys would be required to evolve with educational institutions comprehensive linkages by close collaboration.

VIII. DEVELOPMENT OF NEW INSTITUTIONS

a) INSTITUTES OF FOLKLORE AND ARTS

In the 8th Plan, special institutions for documenting and promotion of folklore and arts would be set up. These would take care of preservation and documenting of the rich diversity of art forms particularly in the rural and tribal areas. These would conduct special capsule course for teachers and scholars.

b) INSTITUTES OF MORAL EDUCATION

A special place has been assigned to imparting of value oriented education in the Education Policy document. A beginning would be made by instituting a special study value-oriented education. Based on its analysis, it would in collaboration with NCERT and State institutions, help in suggesting broad parameters of values of integrity, truth, devotion, loyalty etc. with particular reference to their embodiment in Indian heritage, so as to blend naturally with the over-all educational process.

XXII MEDIA & EDUCATIONAL TECHNOLOGY (INCLUDING USE OF COMPUTERS IN EDUCATION)

I. PRESENT SITUATION

Several efforts have been made in the past to use technological aids for improving the quality of education. Audio-visual units and film libraries were set up at the Centre and in the States for promoting the use of educational films and projection/non-projection aids. Educational Technology cells were also established in 21 States/UTs in a phased manner and a Centre of Educational Technology was set up in the National Council of Educational Research and Training (NCERT) to stimulate the use of television and other instructional media. School radio broadcasts have been in vogue for more than 40 years. AIR's Educational Programme-Production units, set up in 44 of the network's 88 stations, produce radio programmes for primary and secondary schools, which are presently broadcast by 74 stations. General enrichment programmes of 15-20 minutes duration are relayed 3-5 school days per week for primary school children. Programmes for secondary school students are broadcast for 15-20 minutes on all school days. AIR stations at Delhi, Jalandhar, Hyderabad and all stations in Tamilnadu also broadcast programmes 5-7 days a week, in support of the correspondence courses conducted by Universities. 3-4 adult-education programmes are broadcast per week by 14 AIR radio stations.

2. Curriculum-based school TV programmes for secondary school students are presently being telecast by 4 Doordarshan kendras. Educational Television (ETV programmes) of general enrichment for children in the age group 5-11 years are being telecast in the respective regional languages through satellite, six days a week, in the 6 INSAT States, and are being relayed by all transmitters in the 4 other Hindi-speaking States. A 1-hour general enrichment programme for University/College students is also being telecast daily. 2,000 VHF and 2,000 Direct Reception Sets (DRS) have been provided for community viewing in selected village clusters in the 6 INSAT States, installed mostly in the village schools. Under the "INSAT for EDUCATION" project, launched in 1982, State Institutes of Educational project, launched in 1982, State Institutes of Educational Technology (SIETs) are being set up in the States of Andhra Pradesh, Bihar, Gujarat, Maharashtra, Orissa and Uttar Pradesh and a Central Institute of Educational Technology (CIET) has been established in the NCERT, with 100% Central assistance, to generate educational software for children. Audio-visual Research Centres (AVRCs) and Educational Media Research Centres (EMRCs) have also been set up in 6 Universities to prepare educational TV programmes for University/College students. Some facilities for TV programme/production have also been developed in the Technical Teacher Training Institutions (TTIIs).

3. Video Technology has also appeared on the educational horizon. The Electronics Trade and Technology Development

Corporation (ET&T) has formulated a "TELETEACH" project to prepare educational software on videotape. VCRs and viewing equipment would be provided in about 600 viewing centres to be established in schools this year. The Ministry has also identified certain subject areas in which educational software would be developed by ET&T.

4. Computer-education courses at the Master's level (NCA) are presently being offered in 25 Universities, in addition to the Ph.D., M.Tech. and B.Tech. programmes conducted by the IITs and other technological institutions. Diploma level programmes are being run in 35 polytechnics. With the introduction of the Computer Literacy and Studies in Schools (CLASS) project, computers, for long the preserve of select research and technological institutions, have transcended these barriers and entered the schools. 750 secondary/higher secondary schools have been provided with micro-computers to familiarise students and teachers with the range of computer applications and their potential as a learning medium.

TARGETS ARISING AS AN IMPLICATION OF THE NPE AND PRIORITY MEASURES DURING THE VIIITH PLAN

5. The following tasks would emerge from the NPE statements:
- (i) Expand the TV and Radio transmission network to:
 - Provide minimum ETV and Radio programme coverage for identified target groups in all major language zones by 1990
 - establish Radio stations in teaching Universities/Colleges during the VIIth Plan
 - provide a dedicated educational TV channel by 1991-92
 - create a dedicated satellite system for educational needs in the long-term;
 - (ii) Expansion of in-house programme-production facilities to generate adequate capacity in major Indian languages by 1990, and in other languages during the VIIth Plan;
 - (iii) Development of facilities/organisations for production, duplication and dissemination of curricular support material using non-broadcast methods/graphic teaching aids during the VIIth Plan;
 - (iv) Development of training programmes/facilities for manpower generation for educational media during the VIIth Plan;
 - (v) Provide Radio receivers in all primary/elementary schools during the VIIth Plan and TV sets to all schools by 1995;
 - (vi) Eliminating elements of consumerism, violence etc. from media programmes without delay;
 - (vii) Expand existing/initiate new programmes for computer-manpower development during the VIIth Plan to reach desired levels by 1995;
 - (viii) Integration of computer-education modules in professional and general education courses at first-degree level and provision of computer facilities in these institutions-initiated in the VIIth Plan to be completed by 1995;

- (ix) Introduction of elective computer-science courses at higher-secondary level during the VIIth Plan;
- (x) Extension of computer literacy programmes to cover all higher-secondary schools by 1991, secondary schools by 1995 and elementary schools in the long-term;
- (xi) Establish a national Centre of Educational Informatics during the VIIth Plan;
- (xii) Mount a technology mission to develop a reliable source of electric supply to schools in remote areas by 1990.

III. STRATEGY ENVISAGED AND BASIC PRE-REQUISITES

6. The National Policy emphasises that "In order to avoid structural dualism, modern educational technology should reach out to the most distant areas and most deprived sections of beneficiaries simultaneously with the areas of comparative affluence and ready availability". This approach would intrinsically favour the use of broadcast methods, with their inherent advantages of greater reach, convenience of management and cost-effectiveness, over the non-broadcast methods largely oriented to individual learning. Because it is not possible to broadcast programmes for every class through Radio and TV, co-ordinated with their teaching schedule, these media can be utilised effectively only for enrichment of the learning process, and to transmit course material for distance education. However, the extent to which media like Radio and TV can be used in the service of education is, inter alia, dependent on the transmission capability of the network as well as the manner in which competing claims on broadcast time are sought to be rationalised. Large scale use of Audio and Video programmes in broadcast and non-broadcast modes would also generate enormous demand for qualified manpower to work in educational media set-ups. In the long-run, it would be desirable and probably essential that maintenance structures be decentralised, both organisationally and geographically, and local "technician-entrepreneurs" could be trained for such responsibilities. Education requires media support which is related to the curriculum as well as enrichment. Curriculum-based education also requires materials which the teacher can draw upon in the course of this teaching. This could be provided in the form of charts, slides, transparencies etc. Video technology offers considerable potential for improving the quality of education especially at higher levels.

7. Exposure and training in the use of computers in professional education implies intensified manpower-development programmes for computer professionals at different levels and integration of computer-education modules in all professional disciplines, and even in the general education courses at the first-degree level; together with the provision of necessary staff and facilities in these institutions. Computers can play an important role in enhancing the efficiency of the teaching-learning process, to make children more creative and provide them with an individualised learning environment. Computer literacy will be crucial in preparing children to cope with the micro-computer explosion, which has the same potential for social change as the industrial revolution.

The demands of equity would, therefore, require that computer literacy programmes be progressively integrated with the school curriculum at lower-secondary and elementary levels.

8. Educational technology offers the means to reach large numbers in remote and inaccessible areas, remove disparity in educational facilities available to the disadvantaged and provide individualised instruction to learners conveniently suited to their needs and pace of learning. However, all technology requires supporting infrastructure, and unless that infrastructure, like trained manpower, competent and willing teachers, school buildings etc., exists, no technology--direct or distance-- is likely to succeed. One of the major hurdles in the way of introducing modern technology in the rural hinterland is the availability of assured electric supply. Providing a source of assured electricity is a pre-requisite for using technological options in the service of education, and needs to be addressed on priority.

IV. ROLE OF VARIOUS ORGANISATIONS

9. The Ministry of Human Resource Development (MHRD) and the Ministry of Information and Broadcasting should jointly evolve a long-term perspective for media usage. The CIET and the UGC must continue to discharge a coordinating role, as well as provide the necessary leadership and guidance to the State agencies/Universities in setting up and managing production facilities, training of their staff, design of support material and tools for evaluation and programme research. The State Governments and their agencies would be responsible for the production of locally relevant programmes for the target audiences, supply and maintenance of receiving systems, production and distribution of support material, audience research and evaluation studies, and the recruitment and training of production staff and user custodians of receiving sets. Voluntary agencies and individual producers will be involved in all these activities to the extent possible. The Department of Electronics, as the policy-making body in the field of computers, should be closely involved in the planning and development of various manpower programmes as at present, and in identifying the hardware needs of different educational institutions. The State Governments and their agencies, the UGC and other statutory bodies governing professional education at higher levels would share the responsibility for bringing about necessary changes in curriculum and admission requirements of various courses, accreditation and providing infrastructural requirements. Since the measures suggested involve considerable investment in hardware facilities and would require expert guidance at all stages of implementation, the central government will have to continue to play a substantial role in the planning and implementation of this programme.

XXIII. TEACHERS AND THEIR TRAINING

THE PRESENT SITUATION

Traditionally teachers have enjoyed a position of great respect in our country. The religious leaders and social reformers have been addressed as teachers of the people. Hundreds of thousands of teachers are still held in esteem by their pupils and the community. However, on the whole the status of teachers has diminished during the last few decades. The reasons for this are not difficult to find: deterioration in their service conditions, the isolation in which teachers work, phenomenal expansion of the educational system, lowering of standards of teacher training, a general impression that a very large number of teachers do not perform their duty properly, changes in the value system in society, etc. The status of teachers has had a direct bearing on the quality of education, and many of the ills of the latter can be ascribed to the indifferent manner in which society has looked upon the teacher and the manner in which many teachers have performed their functions.

THE POLICY, IMPLEMENTATION STRATEGIES AND OPERATIONAL PREREQUISITES

2. The NPE places complete trust in the teaching community. It calls for a substantial improvement in the conditions of work and the quality of teachers' education. The Policy also emphasises the teachers' accountability - to the pupils, their parents, the community and to their own profession.

3. The strategy of implementation of NPE in regard to teachers and teacher education will consist of a variety of measures for improvement in the status of teachers, along with effective teacher accountability and a substantial upgradation in the quality of teacher education.

In specific terms, the main aspects of the strategy of Implementation would be the following:

- (a) Introduction of reforms in the system of selection of teachers;
- (b) Improvement in the living and working/service conditions of teachers;
- (c) Creation of an effective machinery for removal of grievances;
- (d) Involvement of teachers in the planning and management of education;

- (e) Involvement of teachers' associations in upholding the dignity of teachers, their professional integrity and curbing professional misconduct;
- (f) Preparation of a code of professional ethics for teachers and ensuring that teachers perform their duties in accordance with acceptable norms;
- (g) Willingness to take hard decisions with regard to the observance of (e) and (f) above;
- (h) Creation of opportunities and atmosphere to promote autonomy and innovation among teachers.

Operationalisation of this strategy will call for strong determination, meticulous planning, innovative and participatory methods of programme implementation, and a considerable amount of financial resources.

THE ROLE OF THE TEACHER

4. The teacher is the principal means for implementing educational programmes and of the organisation of education. While speaking of teachers we include heads of educational institutions, whole-time teachers in institutions of formal education, instructors of non-formal and adult education centres, teachers engaged in instruction through the various techniques of distance learning and also voluntary and part-time workers who may be engaged for playing a specific role for a specific period of time. As far as the whole-time teachers in educational institutions are concerned, their principal role is, and will always be, teaching and guidance of their pupils, not only through classroom instruction and tutorials but by personal contact and numerous other ways teachers have always employed for building the character of their pupils. Teachers at all stages have to be expected to undertake or promote research, experimentation and innovation. Teachers have an indispensable role in extension and social service. They have also to participate in the management of a variety of services and activities which educational institutions undertake to implement their programme.

TEACHERS IN HIGHER AND TECHNICAL AND MANAGEMENT EDUCATION

5. In Higher Education and Technical and Management Education the programmes of action already visualize preservice training and orientation of teachers, and providing them further opportunities for professional growth through continuing education recurring every five years. Opportunities to undertake research are being expanded and the infrastructure of institutions improved. Freedom to innovate in teaching, course design and evaluation is to be ensured through greater autonomy of colleges and departments in the institutions of higher education. Linkages with research agencies and industry or other productive sectors are to be promoted so that the opportunity of creative work is vastly

expanded, and teachers will be able to work in other agencies for short periods, and in the event of their selection to posts in other agencies they may be able to transfer their service benefits from one institution to another. New management structures for higher educational institutions are also to be evolved to ensure greater participation of teachers in all relevant spheres of work.

Under these conditions it would be natural to expect that the teachers will be able to give of their best to the students and the community, and would perform their duties conscientiously and with discipline. Institutions will be helped to set up a system of teacher evaluation, based on the multiple tasks which a teacher may perform; an evaluation which would be open, participative and data based. This concrete record would be used when a teacher is to be assessed for career advancement. Poor performance of a teacher would also call for remedial steps.

GRIEVANCE REMOVAL (HIGHER EDUCATION)

6. Removal of grievances will be effected by the creation of a suitable machinery which could take speedy action. Grievances pertaining to pay scales, or service conditions etc. which relate to many colleges or institutions cannot be resolved at the institutional level. Hence an inter institution or state level machinery will be created to examine such grievances within limited time. Unfortunately in our institutions numerous individual grievances accumulate over time and lead to good deal of discontent. Steps will be taken to examine if an ombudsman type of senior person could be appointed at the Pro-Vice-Chancellor's level in every university only to look into all the records, in the case of individual grievances, and tender his advice to the Vice-Chancellor and the Executive Council/Syndicate for remedial action.

GRIEVANCE REMOVAL (SCHOOL LEVEL TEACHERS)

7. Arrangements will be made to ensure that legitimate grievances are promptly attended to. The most important thing is to ensure that teachers get what is due to them - timely disbursement of pay, reimbursement of travel and medical bills, annual increments, decisions regarding crossing of E.Bs, seniority lists, postings and transfers in accordance with rules, promotions as prescribed etc. It is also necessary that disaffection among teachers is taken note of promptly. Joint Consultative Committees will be formed at District and State levels to examine such grievances; and officers may be designated to particularly examine individual grievances. It will be examined if this activity can be undertaken by a standing committee of the State Advisory Board of Education.

LIVING AND WORKING CONDITIONS OF TEACHERS

8. The most important factor affecting the status of teachers is their living and working conditions. Some of the directions in

which action will be taken are as follows:

- (a) Pay & allowances - Eventually, we have to move towards providing pay and allowances to teachers at all levels which are in keeping with their educational qualifications, professional responsibilities and the expected status in society. As far as teachers in higher, technical and management education are concerned the matter is under active consideration and a decision will be taken soon. Compatibility of pay structures with those in other agencies will be kept in mind. For school teachers it is expected that the State Governments will examine the question. The anomaly of providing lower scales of pay to some categories of teachers (e.g. teachers of physical education, fine arts and craft teachers) and librarians will be done away with.
- (b) It is intended to link career advancement with professional growth. The data based comprehensive appraisal would therefore, be necessary at suitable intervals.
- (c) Retirement and old-age benefits and medical-care- All teachers in Government, local bodies and in institutions created by Government or by Acts of Parliament/State Legislatures will be eligible for retirement and medical benefits identical with Government servants. Teachers in aided and private institutions will also be eligible for such benefits in accordance with such directions as may be issued by the Government from time to time.
- (d) Housing- Special measures will be taken to provide housing facilities for teachers in urban as well as in rural areas. In addition to budgetary resources, funds from various corporations and housing agencies will be attracted for this purpose. Variety of financial resources will be used for construction of houses in desert, hilly, tribal and remote rural areas.
- (e) Study Leave- All teachers will be entitled on full pay, one long-term study leave. It will be necessary for them to give an account of their having optimally utilised the period of study leave. Other opportunities of continuing education will also be provided to teachers and they would be encouraged to avail of them.
- (f) Special provisions for women teachers - All women teachers desirous of being posted with their spouses will be posted as such provided that the latter are working in desert, hilly, tribal or remote rural areas. Placement of women teachers will be made keeping in view their domestic obligations. Every effort will be made to provide the facility of creches to women teachers. They will also be provided convenience of long leave, if necessary, for bringing up their children. Possibility of providing them part-time

work will be explored.

- (g) Uniformity of service conditions - It is desirable that there should be uniformity of service conditions for all teachers of the same category throughout the country, and efforts will be made to reach that goal. Specific directions in this respect would be worked out in consultation with State Governments.
- (h) Postings and transfers of teachers - It is essential that postings and transfers of teachers are made in accordance with certain norms. By and large, a teacher should not be moved for three years after his first appointment and we should move towards a situation where by and large a teacher does not get transferred till he/she is promoted or there are some unavoidable exigencies.
- (i) National Foundation for Teachers' Welfare - The activities of the Foundation will be enlarged, the eligibility of teachers widened and necessary organisational support provided to make the Foundation an effective instrument of teachers' welfare.

TEACHERS' PARTICIPATION

9. It is only through their active participation at all levels of management that the principal responsibility of educational transformation can be entrusted to the teachers. The main features of teachers' participation would be the following:

- (a) Involvement of teachers in implementation of NPE, in laying down of rules, procedures and norms therefor and in monitoring of Policy implementation;
- (b) Participation of teachers in the policy^o-making and management forums such as CIBE, State Advisory Boards of Education, District Boards of Education, Village Education Committee, etc.;
- (c) Provision of Executive Committee/Syndicate and Academic Council level consultative bodies with teachers, in fairly large numbers, to discuss specific or general issues of improving the institutional system.

TEACHERS' ASSOCIATIONS

10. Strong, unified and responsible teachers' associations are necessary for the protection of the dignity and rights of teachers as also for ensuring proper professional conduct of teachers. It would be advisable to encourage development of such associations. Professional associations of teachers will be encouraged to develop awareness of teachers towards their professional growth and development. It is necessary to stress the need for democratic functioning of all these organisations in the absence of which

they tend to break into small groups and their credibility and capacity to serve the cause sufferers.

RECRUITMENT OF TEACHERS

11. Methods of recruitment of teachers will be reorganised to ensure objectivity, merit and conformity with spatial and functional requirements. Discussions will soon be initiated with State Governments, and agencies such as the UGC/AICTE etc. to evolve such a method of recruitment. The need to reduce ad hoc and temporary appointments and fill vacancies speedily will be kept in view.

12. Every effort will be made to make teaching an attractive profession to which young persons of talent and commitment may feel motivated to join. Apart from improvement in working and living conditions, the procedures of selection of teachers will also be reorganised. Persons who have given evidence of interest in teaching, love for children, of a spirit of adventure and creativity, and commitment for social upliftment will be preferred. In addition to these qualities, at the level of higher education due attention would be given to the quality of intellect and capability to provide leadership to the youth. For selection of professors, readers and lecturers, persons from all parts of the country would be made eligible and effort made to ensure that at least one-fourth of the teachers at the university/college level in a State come from outside it.

13. In the school system, particularly at the elementary level, the desert, hill, tribal and remote rural areas have always had difficulty in regard to placement of teachers. A systematic and phased programme will be prepared to deal with this problem, the main components of which will be as follows:

- (a) Teachers who are willing to live permanently in such areas, particularly those whose wives can also be teachers, will be assured long term postings in the rural areas of their choice, and scholarships provided for their children's education.
- (b) A large programme of construction of houses will be taken up. These houses will be close to the habitations and would be built in clusters so that apart from teachers, other functionaries who are required to stay in the villages stay there. Special RLEGP projects will be prepared for this purpose. These funds will be supplemented by allocations for this purpose from the Finance Commission, Tribal Sub-Plans, Desert Development Programme, Hill Area Development Programme, etc.
- (c) Spatial requirement will be an important consideration in admission to teacher training institutions.
- (d) Integrated condensed courses will be organised for upgrada-

tion of educational qualifications and teacher training of local village women to prepare them as teachers and non-formal/adult education instructors.

- (e) Village youth who may not fulfill the prescribed qualifications for the post of teacher may be appointed as volunteer teachers for two to three hours a day to run a primary school, and also to function as non-formal/adult education instructors in the evenings. These volunteer teachers may be appointed only in areas where arrangements can be made for training of good quality. It would generally be possible to take up such programmes in cooperation with SCERTs, DIETs, suitable voluntary agencies and with full cooperation of the panchayati raj institutions and the local community.

14. Keeping in view the importance of non-formal education in universalisation of elementary education and of adult education in the strategy of educational development envisaged in NPE, special arrangements will be made for training of instructors. Apart from what has been mentioned in this regard in the relevant Sections, it may be their role as community workers. Special arrangements will be made for upgradation of their professional competence through systematic programmes of continuing education. Finally these instructors would also be given appropriate recognition and reward.

TEACHER EDUCATION*

15. Professional training of teachers to be employed in elementary and secondary schools is a pre-requisite in all parts of the country. The requirement is waived only in areas or among groups where there is a severe shortage of teachers. There are at present about 1200 institutions for training of elementary school teachers and about 360 colleges for preparing secondary teachers. A large number of these institutions suffer from inadequate facilities - human, physical and academic to provide good professional education. Curricula remain unrevised for years, reading lists out of date and practices adopted by teacher educators in direct contradiction to ones being prescribed to prospective teachers.

16. Keeping in view the central place of teacher education NPE calls for its overhaul as the first step towards educational reorganisation. Giving particular importance to the training of elementary school teachers, it is envisaged that selected institutions would be developed as District Institutes of Education and Training (DIET), both for pre-service and inservice courses of elementary school teachers and for continued education of the

*This pertains to School Education only. Teacher education for teachers in higher and technical education has been dealt with in other relevant sections.

personnel working in non-formal and adult education programme. Reorganisation of secondary teacher education system is also implied in the policy.

17. The National Council of Teacher Education will be given the statutory status and necessary resources to play its role.

REORGANISATION OF ELEMENTARY TEACHER EDUCATION

18. An important change in the educational system will be brought about by the radical transformation of the present system of Elementary Teacher Education. The functions of an Elementary Teacher Education institution would include:

- Pre-Service and inservice education of teachers for the formal school system.
- Induction level and continuing education of Non-Formal and Adult Education Instructors and Supervisors.
- Training and orientation of heads of institutions in institutional planning and management and micro-level planning.
- Orientation of community leaders, functionaries of Voluntary organisations and others influencing school level education.
- Academic support to school complexes and District Boards of Education.
- Action research and experimentation work.
- Serving as evaluation centre for primary and upper primary schools as well as Non-Formal and Adult Education Programme.
- Provision of services of a resource and learning centre for teachers and instructors.
- Consultancy & advice, for example to DBE's.

19. Each State Government will set up immediately a Task Force for making an assessment of the number of institutions of this nature required in the State keeping in view the various relevant Programmes of Action. The Task Force will also identify the existing institutions which can be developed as District Institutes of Education and Training. As DIETs get established, sub-standard institutions would be phased out.

20. The DIET will perform all the functions mentioned in the preceding paragraph. The Head of a DIET would be of the status of a Principal of a Degree College/B.Ed. College and most of the faculty members would be persons with background in elementary education. Special selection procedures will be established to

ensure that ablest persons are selected, given higher scales of pay and are reoriented in cooperation with NCERT, NIEPA, SCERTs, University Departments of Education, some outstanding Teachers' etc. The NFE/Adult Education District Resource Units would be an integral part of DIET for which additional faculty will be provided. On this programme, Central Government will meet a major share in funding.

21. Facilities of latest technology such as computer-based learning, VCR, TV, etc. will be provided at DIETs. The teachers receiving training at DIETs would be encouraged to develop their own programmes using the facilities available at DIETs and to use these materials as instructional resources. Capability for making copies of video cassettes, audio cassettes, etc. would also be provided in these institutes. Besides, imaginative use of traditional teaching aids would be emphasised and teachers encouraged to improvise their own instructional materials.

SECONDARY TEACHER EDUCATION

22. The responsibility for secondary teacher education would continue to rest with Colleges of Teacher Education affiliated to Universities. The university in co-operation with NCTE will exercise responsibility for academic aspects including conduct of examinations, award of degrees and ensuring quality of secondary teacher education institutions. These institutions would also be responsible for continuing education programmes for secondary teachers. Some Colleges of Teacher Education will be developed as comprehensive institutions organising programmes for primary teacher education and possibly also, 4 years' integrated courses after higher secondary stage, in addition to the usual B.Ed./M.Ed. courses. These comprehensive institutions would also be provided facilities and staff for undertaking research and to supplement the efforts of State Councils of Educational Research and Training (SCERT). In order to promote innovations and experimentation, good colleges and departments of education of universities will also be given autonomous status.

IN-SERVICE EDUCATION OF TEACHERS

23. A great deal of responsibility would be given to SCERTs. They would have the major role of planning, sponsoring, monitoring and evaluating the in-service education programme for all levels of teachers, instructors and other educational personnel. The needs for in-service education of teachers arise from several sources, such as, changing national goals, revision of school curricula, additional inputs in teaching-learning system, inadequate background of teachers, etc. The state level agency would take cognizance of all the needs before preparing a programme of in-service education for a given period of time.

24. SCERTs would also prepare suitable material for inservice education of teachers, undertake orientation of key persons, monitoring and evaluation of programmes. Similar steps for training

of teachers in Vocational Stream should also be taken by SCERTs.

25. The District Institutes of Education and Training for the primary level would be the major agency to conduct the programmes of in-service education for primary teachers; assistance would be sought from school complexes in the district. In case of secondary school teachers, the programmes would be extended through teacher training institutions and the Centres for Continuing Education. The District level education officer will help in effective conduct of the programmes.

26. All in-service education programmes cannot be organised in face-to-face modality, especially in view of the numbers involved. Distance inservice education will be prepared and extended with the help of broadcasting agencies. SCERTs would be equipped with necessary resources for production of learning material other than print. Minimum essential equipment to record audio, video programmes would be provided to each SCERT. The comprehensive college of education as well as DIETs would also be provided production facilities in a phased manner. The production facilities at DIETs and the colleges may not be of professional quality which would produce material which can be used in its own training programmes and can also be shared by other sister organisations. Experiences especially those of voluntary organizations should be drawn upon in designing courses, development of material and strategies for inservice education.

CADRE OF TEACHER EDUCATORS

27. A separate cadre will be created for appointment of staff in SCERTs, secondary teacher education institutions and DIETs. Persons selected to this cadre will receive incentives such as housing and placement in a higher scale of pay. Special arrangements will be made to ensure continuing education of these persons. An inter-change will also be organised between teaching and teacher education. Sufficient number of supernumerary/reserve positions will be created in schools to enable people from this cadre to go as teachers for 1-2 years every 4-5 years.

NATIONAL COUNCIL OF TEACHER EDUCATION (NCTE)

28. NCTE has been in existence since 1973 but it has not been able to guide the system of teacher education to meet emerging challenges. Some of the difficulties are inherent in its constitution. To remedy this, it will be conferred autonomous and statutory status.

It would perform the following functions:

- (a) Accreditation/disaccreditation of institutions of teacher education
- (b) Laying down of standards and norms for institutions of teacher education

- (c) Development of guidelines for curricula and methods of teacher education
- (d) Other functions like earning of credits for in-service education, duration of various courses, emphasis to be laid in training programmes for NFE/AE instructors, place of correspondence education in teacher education etc.

Some other functions like preparation of learning material, orientation of senior teacher educators etc. may continue to be performed by NCERT, SCERTs, in co-operation with NCTE.

29. The curriculum for teachers' training needs to be revised in the light of the new policy thrusts. In particular, there should be an emphasis on integration of education and culture, work experience, physical education and sports, the study of Indian culture and the problems of the unity and integration of India. Planning and Management are emerging areas and curriculum should bring out the importance of these areas. Educational technology will influence not only methodologies of teaching - learning process but also the contents and their design. These aspects should also be taken into account while framing the curriculum.

There is too much emphasis in textbooks on Western ideas, and teachers under training do not get exposed adequately to Indian philosophical and psychological concepts of education. Therefore, NCERT and UGC should undertake the task of preparing new learning materials, which would include textbooks, reference books, anthologies, slides, films, etc., and which will reflect the Indian experience in education.

XXIV. MANAGEMENT OF EDUCATION

THE PRESENT SITUATION

✓ Educational planning will need to be linked to manpower planning by setting up mechanisms for assessing the needs of the industry, commerce, professional services, agriculture in the context of the technological trends and growth strategies. ✓ Based on different assumptions indicating the level and structure of income and income distribution, nature of technologies likely to be used in different capital-labour co-efficients, structure of employment and job/skill profiles required, alternative scenarios of development for the next 15-20 years and the task for education derived from such scenarios will require to be formulated. At present no agency has either the capacity or the responsibility to undertake the kind of exercise required even in quantitative terms, to link long term planning of education to match developmental and manpower needs in the country. ✓ This capacity of manpower demand forecasting will have to be provided for in the overall structure for the management of the educational system. ✓

POLICIES AND IMPLICATION FOR STRATEGY

2. The management design and process for education are derived in the context of objectives and the specific functions of the education process. In order to achieve the objectives of universalisation of elementary education and eradication of illiteracy the implementation process will require special measures to be taken to ensure that the groups who are left out of the ambit of education namely the weaker sections of the society including SC/ST and women and, adult illiterates in the age-group 15-35, are enabled to participate effectively as beneficiaries of the relevant educational programmes so that achievement of national goals and objectives could be ensured. This would call for a planning model which would have the flexibility to cater to the immense diversities encountered in the context of universalisation of elementary education, equalisation of educational opportunities especially in respect of disadvantaged sections and reorienting the content and process of education. Decentralisation of the planning and management process within a multilevel framework appears to be inescapable for the implementation of educational programmes.

3. Decentralisation, as far as education at higher levels, namely at under-graduate/post-graduate or at the level of polytechnics, technical colleges etc. is concerned, would be required essentially to allow the exercise of initiatives and making of innovations by teachers, students and management with a view to enhancing the relevance and improving the quality of education. In order to make the system work effectively, it will be essential

not only to distinguish carefully between roles and responsibilities, but also to define for each of the functions performed, the section or group towards which various authorities will be accountable. In addition, to perform the functions for which accountability has been defined, operational autonomy and the requisite authority and powers for the management of institutions will have to be matched with each other. In this context, some institutional arrangements will have to be established which would have the authority as well as the resources to encourage institutions with a good record in respect of innovations and adherence to academic schedules, processes and programmes and the attainment of students and, in an appropriate and effective manner, ensure that those not fulfilling their obligations come to adverse notice of all concerned. Rigorous systems of performance audit against practical and objective performance will have to be laid down and enforced through incentives and disincentives.

4. The National Policy on Education gives pre-eminence to people's involvement, including association of non-governmental agencies and voluntary effort. People's involvement should, even more than non-governmental agencies and voluntary associations, mean involvement of parents, developmental agencies, employers, professionally competent teachers and representatives of financing bodies with educational processes at all levels. People's involvement should lead to establishment of closer linkages between educational institutions and the community, improvement in relevance and quality of education, reduction of absenteeism and irresponsibility, greater access to community resources and better discipline in the management of educational institutions. At the same time, it should eschew importation of local politics and power play into educational institutions.

PRIORITIES AND MACHINERY FOR IMPLEMENTATION

5. ✓ The following areas identified for implementation of the National Policy on Education will deserve priority attention:

- (a) making the system work;
- (b) decentralisation of management and establishment of District Boards of Education, District Institutes of Education and Training (DIET), provision of autonomy and establishing accountability of institutions, systems and teachers;
- (c) working out the details, mechanics, funding arrangements for the National System of Education;
- (d) manpower planning and Demand Forecasting;
- (e) media and Educational Technology with special reference to Adult Education, Non-formal Education, Open and Continuing Education;

- (f) development and periodic review of curricula and teaching-learning processes;
- (g) strengthening the data base: monitoring and evaluation system.

6. The CABE may consider looking into details of implementation of National Policy on Education in the above mentioned areas through appropriate committees.

7. It was recognised that the main areas of central responsibility in respect of the management functions include determination of national priorities, evolving strategies through the participation of concerned agencies, laying down guidelines for formulation of programmes and schemes, providing continuous technical back-up and resource support, undertaking monitoring and evaluation and creating conditions for the maintenance of quality and efficiency.

NATIONAL LEVEL MECHANISM

8. Considering the responsibility vested in the Government of India and the role it is expected to play especially in respect of universalisation of education and establishment of a National System of Education, immediate steps will have to be taken to strengthen the Departments under the Ministry of Human Resource Development dealing with the NPE. This strengthening will, inter alia, involve setting up of effective mechanisms for exploratory studies for collecting inputs for programme formulation; participative field studies to assess the effectiveness of on going programmes and provide on-the-spot guidance; cellular structures for handling the tasks of project/programme formulation and appraisal and, administrative and financial management of programmes for which the Centre will hereafter be equally responsible along with the States; and performing the clearing house functions for exchange of relevant experiences between States.

9. While considering the restructuring of programmes at the central level, the desirability of placing programme planning, implementation of policy, monitoring, guidance, interpretation of NPE under one authority may be considered.

10. Because of historical reasons, government has tended to assign an increasing measure of responsibility for the implementation of even State administered educational programmes to bodies which, because of their autonomous and central character, could not negotiate with the State agencies with the requisite blend of firmness and flexibility. It has also been observed that wherever these bodies have accepted to function as "agencies" for the government, they have had to compromise with their creative research and technical responsibilities. In view of this, two essential decisions are called for: the first is with regard to the role of the Government itself which now has to assume larger responsibility for motivating and, within a multilevel framework,

ensuring proper management of the programmes for which central government will be making large provisions; and secondly, to establish the role and responsibilities and availability of autonomous bodies more sharply.

STATE LEVEL MECHANISM

11. The State Governments will consider creating a framework for integrating all the activities concerned with human resource development through the State Advisory Board of Education which will perform as an umbrella organisation for this purpose.

12. In setting up the State Advisory Boards of Education, the State Government will, for getting a wider over-view, consider giving adequate representation to educationists of national standing, who are actually involved in innovative and experimental work in education, inducting some from other States; planners, scientists, industrialists and representatives of Development Departments. Representation from women and youth will be ensured in this body. Representation will be given not only to distinguished teachers functioning at different levels of the educational hierarchy, but, also to parents who, more than any other group, have a critical stake in the effective functioning of the educational system. Systematic nurturing of parents, participation and involvement is, even otherwise, advocated as an urgent need for strengthening the educational system. Besides, these, representatives of voluntary organisations and trade unions participating in educational programmes will also have to be associated with the SABE.

13. The arrangements for planning and coordination of college and university education at the state level at present are inadequate. States with large number of universities will set up State Councils for Higher Education to review performance, determine financial requirements and plan for innovations and inter-se network. These Councils will have, besides the Vice-Chancellors and officials, Vice-Chancellors of Central Universities if any in the State, distinguished educationists as well as representatives of the Central scientific, education and resource institutions as and such other persons as may be considered necessary, as members.

14. At the state level also administrative arrangements will be strengthened and reorganised in view of the priority assigned in the NPE to the implementation of programmes of universalisation of elementary education, non-formal education, eradication of illiteracy, establishment of the National System of Education as well as monitoring and evaluation of all priority programmes.

INDIAN EDUCATION SERVICE

15. The establishment of an Indian Education Service will be an essential step towards promoting a national perspective on management of education. Basic principles, functions and procedures for recruitment to this service will call for detailed consultation

with the States so that the States adequately appreciate the need and benefit of this structure, particularly in the context of attracting talented personnel and giving them a stature commensurate with their responsibilities. Detailed proposal inclusive of alternate career paths for the cadre, processes of selection and induction of existing manpower engaged in education, arrangements for mobility between the State and the Central Government and the scope for lateral movement as well as mobility and secondment vis-a-vis the academic system will require to be worked out in consultation with the State Governments.

TRAINING OF EDUCATIONAL PLANNERS, ADMINISTRATORS AND HEADS OF INSTITUTIONS

16. Educational planning and management requires separate identity and separate attention; special schemes for research and development in this area will be launched as soon as possible.

17. In addition to specialised institutions at the national and State levels, for the training of educational administrators and heads of institutions, Institutes of Management and other similar organisations will also be motivated and enabled to take up management development and training programmes, as well as policy^d oriented research in these areas through documentation of case studies of real life situations and action research for institutional development.

18. Training of senior level personnel will be designed to provide some exposure to educational perspective and the role of education in social development and, in addition, include institu^d tional planning and development, curriculum planning and, program^d me evaluation and review techniques.

19. For Heads of Institutions training in financial rules and procedures, legal provisions governing educational activities, personnel management, programme planning and data management and review techniques will be considered essential.

20. Before training is initiated, the objectives of the training programme for various categories of personnel like planners, administrators and heads of institutions will be defined in terms of job profiles of various levels of personnel and the required expertise skill and, institutional development.

21. Pre-induction training will be prescribed as an essential requirement for personnel selected as Heads of Institutions. Further, their confirmation in grades of Heads of Institutions will be subject to satisfactory completion of periods of probation as may be prescribed in the relevant recruitment rules.

MACHINERY FOR IMPLEMENTATION AT DISTRICT LEVEL

22. District Boards of Education will be set up with the responsibility for implementation of all educational programmes

including, school, non-formal and adult education upto the higher secondary level. The Boards will also be vested with the responsibility for planning which would include inter alia, area development, spatial planning institutional planning, administrative and financial control and personnel management with respect to primary, middle, secondary and higher secondary schools.

23. The District Boards will be required to formulate development strategies and plan educational activities of these institutions mentioned for the entire district. These plans will, inter alia, look into the settlement pattern of habitations, distribution of educational institutions, the demographic profile and projections. The District Educational Plans will also go into the levels of participation and retention of boys and girls under different age groups by socio-cultural and economic categories and plan for measures for ensuring not only for physical infrastructure and a more equitable access to all but also for the qualitative aspects of education.

24. The need for ensuring that the decisions at the State level regarding various educational programmes should invariably take into account the plans drawn up and suggestions put forward at the district level would call for special emphasis.

25. Considering the planning and management model envisaged, and their functions, unless the District Boards of Education are vested with appropriate statutory authority, these bodies cannot effectively manage the functions entrusted to them.

26. In such States where administration and management of education already constitute the responsibility of Panchayat Raj bodies, the composition of the District Boards of Education will in consonance with the existing management structure of the Panchayat Raj bodies. In States where Panchayat Raj institutions are not in existence, the composition of the District Boards of Education will take into account the need for representation of educationists, women, youth representative of parents, Scheduled Castes/Scheduled Tribes, minorities and interests of representative institutions in the district if any.

27. In order that the District Boards of Education discharge the functions allotted, it would be necessary to assign State funds for implementation of the various programmes. Provision will also be made while constituting the statutory authority to enable the District Boards of Education to raise their own resources. Some un-earmarked funds will also be placed at the disposal of the District Boards by the State Governments so that District Boards can use these resources for any purpose that may be considered essential by raising matching funds of their own.

28. The relationship of the State Government with the District Boards of Education in terms of administrative and financial control and personnel management vis-a-vis primary, middle, secondary and higher secondary levels will need to be clearly

spelt out in appropriate guidelines to be issued by the State Governments. It will also be necessary to spell out clearly the levels of recruitment and structure of cadres of teachers of different categories. The State Governments will take the measures required to constitute District cadres of elementary school teachers.

29. There will be a Chief Education Officer for the District to look after all levels of education - primary, middle and secondary. Under him there will be a District Education Officer looking after establishment, budgeting, planning and the educational data base. In addition there will be district level official of appropriate rank engaged in specific educational programme.

30. Implementation of different educational programmes at the District level, will be supervised and monitored by the District Boards of Education which will oversee all aspects of educational development.

31. Monitoring of all educational programmes for implementation in the District will take place at the State level and relevant indicators to establish inter-district comparison will need to be worked out. The resources to be transferred to the District will be linked to the performance and achievement.

32. For ensuring quality of education in educational institutions at different levels, consideration will be given to appointment of District Inspectors of Education to look after academic functions exclusively. Such functionaries who will be selected with due regard to their understanding of the academic functions to be performed, will be responsible for looking after the academic standards in educational institutions, provide academic leadership and help in better performance of their academic functions by heads of institutions and teachers.

33. The District Institute of Education & Training (DIET) under the District Board will be responsible for making substantive curricular and pedagogic inputs into all programmes of education at the district level and will also be responsible for training of personnel and provision of resource support to programmes including adult education.

MACHINERY FOR IMPLEMENTATION AT LOCAL LEVELS

34. Consistent with the important role assigned to the heads of institutions, their selection should be done with due care. It is essential that there should be fixed term of appointment for the head of the institution and transfer should be kept to the minimum to enable the head of the institution to exercise a leadership role and make his contribution to the development of the institution.

35. The head of the institution particularly at the primary/

middle school level will be made accountable to the Village Education Committee of which, he will be a member in respect of running of his institution.

36. A Village Education Committee comprising not more than 15 members with representatives from parents, Panchayats, cooperatives, women, Scheduled Castes/Scheduled Tribes, minorities and local development functionaries will be constituted to look into the over-all management of all educational programmes at the village level.

37. The State Governments will lay down general guidelines regarding the constitution of the Village Education Committee and establish norms of accountability in respect of head of the institution at the village level to this Committee. Accountability will be established also in respect of programmes like Early Childhood Care Education (ECCE), elementary education, ICDS, non-formal education, adult and continuing education.

PROMOTION OF SCHOOL COMPLEXES

38. School complexes as a network of institutions on a flexible pattern will be promoted to provide synergic alliances to encourage professionalism among teachers, ensure observance of norms and conduct and enable the sharing of experiences and facilities. The school complex will serve as the lowest viable unit of area planning and will form a cluster of 8-10 institutions in which different institutions can reinforce each other by exchanging resources, personnel, material, teaching aids etc. and using them on a sharing basis.

39. It is expected that in course of time, school complexes when fully developed, will take over much of the inspection functions. The inspection functions of school complexes will be performed keeping in view the need to bring in greater cohesion among the participating schools and will include inter alia:

educational mapping, grading of institutions and identifying strength and weakness of individual schools. Inspection to be conducted will invoke a culture of participation and providing correctives rather than the existing practice of finding faults. These inspections will be in addition to the normal routine inspection functions of District/Block level inspecting authorities.

40. The State Governments may lay down necessary guidelines for qualitative inspections to be undertaken by the school complex and also specify the nature of quantitative data required in respect of each institution and each complex for inspection purposes.

41. Considering that many of the schools which will form part of the complex will be non-governmental institutions, the State Governments may make necessary provision of funds for facilitating the work of school complexes including training, resource support

travel costs as well as allowances for inspection.

42. Immediate preparatory action to implement the above suggestions will require to be taken so that appropriate guidelines for development of school complexes could be issued by the State Governments and the school complexes could become operational in the year 1987.

PEOPLES PARTICIPATION AND INVOLVEMENT OF VOLUNTARY AGENCIES

43. The successful implementation of programmes like elementary education including non-formal education, early childhood care and education (ECCE), adult education, education of the disabled, etc. will require people's involvement and participation in educational programmes at the grass-root level and participation of voluntary agencies and social activist groups on a much larger scale. Considering the need for ensuring relationship of the genuine partnership between the Government and voluntary agencies, Government will take positive steps to promote their wider involvement. Consultations will be held with them from time to time and representation given to them on bodies responsible for making decisions in respect of them. They will be assured necessary facilities to participate in implementation of programmes and procedures for selection of voluntary agencies and of financial assistance will be streamlined to enable the voluntary agencies to play optimal role.

PHASING OF REQUIREMENTS AND ADVANCE PREPARATORY ACTION

REQUIREMENT OF RESOURCES

44. The Plan of Action relating to Management of Education will require to be prepared at the State and local levels - village, block, and district. The State Governments will be required to work out these details and issue necessary guidelines for developing a multi-level planning model with decentralisation and autonomy.

45. It is essential that involvement of the local communities in the management of educational institutions in rural areas is ensured and the school complexes should commence from the year 1986-87.

46. Keeping this in view, the State Governments will consider giving necessary powers to the Boards of Secondary Education to earmark funds for developing multi-level planning models for management of education, and development of school complexes.

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