REPORT

OF THE

STEERING GROUP ON EDUCATION

FOR THE

FIFTH FIVE YEAR PLAN

EDUCATION DIVISION
PLANNING COMMISSION
GOVERNMENT OF INDIA
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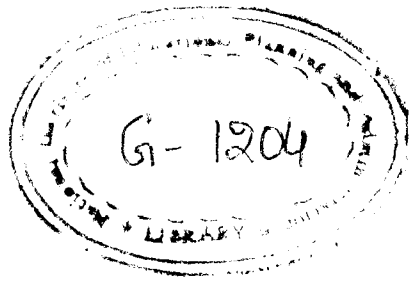

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PLANNING COMMISSION
(EDUCATION DIVISION)

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REPORT OF THE STEERING GROUP ON EDUCATION IN THE FIFTH FIVE YEAR PLAN

I. INTRODUCTION

For the formulation of the Fifth Plan, the Planning Commission set up a Steering Group on Education and 11 sectoral Task Forces with the following terms of reference:-

(1) To take stock of the position as is likely to be reached by the end of the Fourth Plan; to identify bottlenecks and suggest remedial measures.

(2) To suggest a perspective of development from 1973-74 to 1978-79 in the light of the overall development suggested in the Fourth Plan.

(3) To formulate proposals for the Fifth Plan in the light of the perspective, indicating priorities, policies and financial costs.

The composition of the Task Forces and the Steering Group is given in Appendix I. All the Task Forces except those on Youth, Physical Education, Games & Sports and Educational Finance have reported*. While the Task Force on Youth, Physical Education, Games & Sports has yet to submit its report, that on Educational Finance has initiated certain studies which will take considerable time before their results will be available. The Steering Group has, however, carefully considered the tentative conclusions and suggestions which emerged from the two meetings

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* These are brought out separately in Volume II.

of these two Task Forces. The Task Forces and the Steering Group have also had the benefit of the views of the Central Advisory Board of Education, crystallised in their meeting in September, 1972, as well as of the four regional conferences of Directors of Technical Education organised by the Task Force on Vocational and Technical Education. Many of the Task Forces also set up working groups in which, apart from their own members, they drew on outside talent. The report of the Steering Group, therefore, represents a wide spectrum of informed public opinion and the combined thinking of experts, educationists, educational administrators and politicians. Besides, a considerable amount of systematic work, much larger than in any previous Plan, had prepared the ground for it.

II. REVIEW OF POSITION ON THE EVE OF THE FIFTH PLAN

2.0 The Fourth Plan attached a high priority to the expansion of elementary education and particularly to the provision of facilities for backward areas and communities and for girls. At the secondary and higher stages of education, the emphasis was to be on consolidation and diversification so as to meet the diverse needs of trained manpower of the requisite standard. Some of the important programmes included in the Plan to raise the quality of education were improvement of teacher education including in-service education, improvement of curricula and text-books, expansion and improvement of science education, raising the standards of post-graduate education and research and the development of Indian languages and book production. In

technical education, the Plan envisaged consolidation and diversification, especially of polytechnic education, the establishment of closer links with the needs of the industry and the orientation of education and training towards self-employment. To achieve these goals, the Plan called for increased efforts to mobilise public support for educational programmes, laid stress on streamlining the planning, implementing and evaluating machinery at all levels and proposed increasing use of part-time and correspondence courses.

Progress of Expenditure:

2.1 To achieve the objectives indicated in the foregoing paragraph, an outlay of Rs. 804.24 crores - Rs. 701.07 crores for General Education and Rs. 23.17 crores for Technical Education - was provided in the Fourth Plan. Table 1 gives the progress of the Plan expenditure:

Table 1: Plan Expenditure on Education

(Rs. crores)

Sl. No.	Item	1968-74 Fourth Plan Outlay	1969-70 Actual Expenditure	1970-71 Actual Expenditure	1971-72 Actual Expenditure	1972-73 Anticipated Expenditure	1973-74 Approved	1968-74 Anticipated	Col. 9 as Percentage of Col. 3
1	2	3	4	5	6	7	8	9	10
1.	General Education	701.07	68.71	97.49	136.33	195.35			
2.	Technical Education	123.17	18.30	19.66	21.08	24.83			
	Total	824.24	87.01	117.15	157.40	220.25	218.00*	797.79	97.0

* Break-up not available.

2.2 While shortfalls are likely to occur under elementary educatiorn, teacher training, social education and technical education, the expenditure on secondary and university education is likely to exceed the outlays. The shortfall will be mainly in the Central Sector, except iin technical education where the shortfall will be only in the State Sector. (See Appendix II and III).

2.3 The mid-term appraisal led to the introduction of a new Centrallly sponsored scheme in 1971-72 for the appointment of additional teachers in primary schools, thereby assisting the States and Union Territories to relieve unemployment among the educated and also to expand the facilities for elementary education, particularly in the educationally backward States. An outlay of Rs. 4.42 crores was provided under the scheme during 1971-72. In 1972-73, the amount of assistance to States and Union Territories was increased to about Rs. 30 crores. In 1973-74, the commitment on account of this programme is expected to be of the order of Rs. 24 crores. While a provision of Rs. 30 crores has been made under the special employment scheme, more money is likely to be available for the State proposals for relieving unemployment of the educated for which an outlay of Rs. 100 crores has been provided. Thus, in addition to the total anticipated Plan expenditure of Rs. 798 crores, an amount of more than Rs. 64.42 crores may be spent on the expansion of facilities for elementary education, raising the total Plan expenditure to more than Rs. 862 crores.

Elementary Education:

3.0 Enrolment: A major task in the field of elementary education is the fulfilment of the Constitutional directive, enjoining the provision

of free and compulsory education to all children up to the age of 14. Substantial progress will have been made by the end of the Fourth Plan when educational facilities will be available for nearly 90 per cent of the children of the age-group 6-11 and 40 per cent of the age-group 11-14. These facilities, however, are at present being partly utilised by under-age and over-age children, about 23 per cent in classes I-V and 41 per cent in classes VI-VIII. In course of time, as children start going to school at the right age and wastage and stagnation are substantially reduced, these facilities will be utilised mostly by the relevant age-groups. About a quarter of the girls in the 6-11 age-group will, however, still not be enrolled in primary classes in 1974. As for the age-group 11-14, a little less than one-half of the boys and about three-fourths of the girls will be out of schools, at the end of the Fourth Five Year Plan.

3.1 The tempo built during the Third Five Year Plan in enrolling children in elementary classes was lost in subsequent years, particularly inthe age-group 6-11, where the additional enrolment in classes I-V, avreging 31 lakhs per year in the Third Plan, fell to 17 lakhs during 1966-69 and has now increased only to 27 lakhs per year in 1969-72. Thetempo may largely be regained with the sanctioning of 75,000 teachers during 1971-73 and a further number in 1973-74 under the Central scheme of relieving unemployment among the educated.

3.2 Disparities continue to exist among the States and within States amon the districts (and blocks) in the enrolment of children in elementary school classes. An estimate of the likely enrolment in 1974 indicates that the percentage of children enrolled in classes I-V will

be substantially below the all-India level of achievement in Assam, Bihar, Haryana, Jammu & Kashmir, Madhya Pradesh, Orissa, Rajasthan, Tripura and West Bengal. As for classes VI-VIII, most of the States have to make up a large leeway, particularly Andhra Pradesh, Assam, Bihar, Madhya Pradesh, Orissa, Uttar Pradesh and West Bengal. (See Appendix IV(a) and IV(b). Within States, educational facilities are not evenly spread. In fact, the disparities are at times sharper within the States than they are among the States. Some illustrative district-wise data may be seen in Appendix V.

2.3 The percentage of girls enrolled in elementary classes is extremely low in many States. The States, where the proportion of girls enrolled in 1974 in classes I-V to their population in the age-group 6-11 will be lower than the estimated all-India achievement of 74 per cent, will be Assam (58.6), Bihar (52.3), Haryana (58.4), Jammu & Kashmir (49.5)), Madhya Pradesh (14.6), Orissa (13.6), Rajasthan (14.0) and Uttar Pradesh (13.8). The enrolment of girls in classes VI-VIII will be less than 20 per cent of their population in the age-group 11-14 at the end of the Fourth Plan in the States of Andhra Pradesh, Bihar, Madhya Prades, Orissa, Rajasthan and Uttar Pradesh. Experience indicates that the means of giving effect to the Constitutional Directive of free and compulsory education to all children up to the age of 14 will have to be both formal and informal education.

3.4 Institutions: The needs of expansion have, in some areas, been met through the establishment of single teacher schools. While, for the country as a whole, 25 per cent of the primary schools in 1971 were

single teacher schools, the percentage of such schools ranged between 8 and 70 in some States. They, however, cater only to about one-fifth of the enrolment at the primary stage. Because of the inadequate training of teachers in handling the problems of multiple class teaching, the lack of technical support from the supervisory personnel and the absence of relevant teaching aids and other materials, the instruction in these schools in seldom effective.

3.5 Teachers: In spite of the considerable improvement in the general qualifications of teachers, a sizeable number of them still continue to be under-qualified. In 1968, for instance, 41 per cent of the teachers in primary and middle schools had not completed secondary education. About a quarter of the teachers working in these schools would be untrained at the end of the Fourth Plan. The position, however, varies in different States. The augmentation of training facilities to cope up with projected enrolments, coupled with lower priority given by the States subsequently to elementary education, has led to the unemployment of trained teachers in some States. In some cases, private managements prefer to employ untrained teachers as they are paid lower emoluments. The Directorate General of Employment and Training statistics show that in 1971 there were about 1.5 lakh trained teachers seeking placement assistance of the employment exchanges. These registrants had increased by about 25 per cent from 1968. There were also 37,000 untrained teachers on the live register of these exchanges in 1971. Unemployment among teachers is particularly high in the States of Andhra Pradesh, Haryana, Kerala, Tamil Nadu, Punjab and Uttar Pradesh which, taken together, had more than 1.29 lakh or 69 per cent

of the trained and untrained teachers on the live register. On the other hand, the pupil-teacher ratios have been worsening over the year under the pressure of expansion, adversely affecting the quality of instruction in elementary schools. The position may ease to some extent with the appointment of 75,000 teachers under the Union Government scheme for relieving unemployment.

3.6 Buildings and Equipment: The condition of elementary school buildings and equipment is very unsatisfactory. The Education Commission indicated that at the primary school stage "only about 30 per cent of the schools are (were) stated to be housed in satisfactory buildings." As for equipment, the Report stated that "at the primary stage, there is (was) still an almost total absence of basic equipment and teaching aids - a good black-board, a small library, essential maps and charts, simple science apparatus and necessary display materials."

3.7 Finances: The share of elementary education in the direct expenditure on education has been decreasing over the years, from 38.7 per cent in 1951 to 32.5 per cent in 1966. While overall expenditure has grown by about 12 per cent per year, expenditure on primary schools has grown by 8.4 per cent only. The plan allocations for education also show the same decreasing trend in the share of resources that elementary education has received. The outlays for elementary education represent 29 per cent of the Fourth Plan outlay for education compared to 53 per cent of the First Plan, 35 per cent of the Second Plan and 30 per cent of the Third Plan. Even the meagre outlays provided for elementary education remain unspent. Compared to about 82 per cent of the plan

allocation for education having been utilised in the first four years of the Fourth Plan, the expenditure on elementary education would constitute 67 per cent of the Plan outlay for these programmes. The educationally backward States, where the magnitude of the task of fulfilling the Constitutional directive is larger, have tended to give even a lower priority in their Plan allocations to the programmes of elementary education. For instance, each of the States of Bihar, Jammu & Kashmir, Madhya Pradesh and Orissa had utilised only about a third of the Plan outlay for elementary education during 1969-72. The mechanism of earmarking outlays for elementary education has not worked well so far and some States divert funds from this sector for one reason or another. This is largely due to the insufficient pressure from the non-Vocal sections of the population whose children have still to be brought to school.

3.6 Quality Improvement: The quality of instruction provided in elementary schools has continued to remain poor and unsatisfactory. Stagnation and wastage rates have not shown any noticeable change over the years; of every hundred students admitted to class I, only 37 reach class V after four years of education while the rest either drop out or repeat the grades. The premature withdrawal of students is primarily due to economic utility of the child for the household. Stagnation rates, on the other hand, can be reduced by improving the attractiveness of the school for the child. Apart from improving the physical conditions of elementary schools and the competence of teachers, priority will have to be given to curricular reorientation with particular

emphasis on work experience and on developing competence in the children to handle local problems.

Secondary Education:

4.0 Enrolment: There has been considerable expansion of facilities for secondary education over the years; the enrolment of boys has increased six-fold and that of girls thirteen-fold between 1951 and 1974. Although the gap between the education of boys and girls has been considerably narrowed - because of the faster rate of growth in the enrolment of girls - the latter still constitute only a little over a quarter of the enrolment in secondary schools. Enrolment in classes IX-XI, as a percentage of the population in the age-group 14-17, is expected to rise from 19.3 in 1969 to 23.5 in 1974 for both boys and girls taken together, from 28.5 per cent to 33.8 in the case of boys and from 9.8 to 13.0 in the case of girls. There is likely to be a shortfall of about 6-7 lakhs in the enrolment targets, most if it in respect of boys (4-5 lakhs). The disparity between and within the States continues to persist; the enrolment of girls is particularly low in the States of Bihar, Madhya Pradesh, Manipur, Rajasthan and Uttar Pradesh and the Union Territory of Arunachal Pradesh. The low enrolment of girls adversely affects national development programmes, particularly the programme of universalisation of elementary education because a sufficient number of qualified women do not become available for work as teachers.

4.1 The enrolment of pupils belonging to the under-privileged sections of the population is generally low in relation to their population. This is particularly true of the children of the Scheduled Castes and the Scheduled Tribes; in their case, although an increasing number is availing of the educational facilities, there is not likely to be any appreciable change in the proportions enrolled in secondary schools since planned development started in 1951. Special efforts would be required to accelerate the provision of educational facilities for children belonging to these sections.

4.2 Institutions: For various reasons - political considerations being paramount - a large number of uneconomic institutions have been allowed to come into existence. About one-half of the secondary schools/sections were revealed by the Second Education Survey to have an enrolment up to 140. This was so not only in rural areas, but also in the urban areas where about 30 per cent of the schools had an enrolment up to 140. Accessibility is comparatively a minor consideration in the location of secondary and collegiate institutions and consequently, the emphasis has to shift to the establishment of institutions of a size that is economic as well as efficient.

4.3 Reorganisation: The implementation of the Education Commission's recommendation regarding a uniform pattern of school education has been very slow. Only the States of Andhra Pradesh, Kerala and Mysore have yet decided to adopt the new pattern and complete the task by the end of the Fourth Plan; the Government of Uttar Pradesh while it has been following the pattern of 10 years of high school and 2 years of intermediate education, it has not switched over to the three year degree course.

4.4 Quality Improvement: Efforts have been made to revise and update the curricula of secondary schools, particularly in Science and Mathematics. The National Council of Educational Research and Training, the State Institutes of Education and the State Institutes of Science Education have done fairly good work in this direction. Most State Boards of Secondary Education have also introduced reforms in the techniques of evaluation. These efforts have, however, had little impact on actual teaching practices primarily because of the absence of a large programme of inservice education of teachers devised as a supportive measure to curricular and examination reform. The programme of work experience has not made much headway except in a few States like Rajasthan, where work experience has been introduced as an extra-curricular activity and in Maharashtra where steps are being taken to introduce it in all schools.

4.5 Vocationalisation: Vocationalisation of secondary education visualising the diversion of a large proportion of students to terminal courses, has made little progress and students passing out of the secondary schools continue to flow into universities and colleges. Vocational training in the Industrial Training Institutes, polytechnics, commercial schools, institutions for the training of nurses and para-medical personnel etc., continues to be provided, according to the assessed need in these areas. But the intake of these courses is very limited compared to the large numbers coming out of secondary schools. A large number of matriculates and intermediates are finding it difficult to secure employment; in 1971 for instance, 19 lakh matriculates and

intermediates were on the live register of the employment exchanges. The slowing down of the rate of growth of the economy has also resulted in considerable unemployment among technically trained personnel. For avoiding a further aggravation of the problem of unemployment, it is necessary to plan carefully the admissions in vocational training institutions, the establishment and maintenance of which require large financial and other investments. A number of surveys have been and are being undertaken; these will indicate the skill requirement of the various areas.

4.6 Teachers: Facilities for teacher training have been expanded substantially over the years; the percentage of trained teachers in secondary schools is, consequently, likely to be over 85 at the end of the Fourth Plan. There are, however, areas where the shortage of trained teachers persists; this is particularly true of the States in the Eastern region. These States will have to make a special effort to reduce the backlog of untrained teachers and to create sufficient training facilities for meeting the requirement of new teachers. The expansion of training facilities without assuring the quality of the programmes has adversely affected the standards of training; many substandard institutions have been allowed to come into existence. There are also acute shortages of equipment, building space and qualified teacher educators. In some States, qualified Science and Mathematics teachers are in short supply.

4.7 A substantial proportion of the teachers teaching in secondary schools are underqualified. About 14 per cent of the secondary school teachers were found by the Second Education Survey to be under-graduates; about one-sixth of the teachers teaching Science were also

found to have no qualifications in the subject. As for teachers teaching Science (with or without Science qualifications) about 23 per cent were undergraduates. Since the teacher is the most crucial element in the teaching process, improvement of secondary education can be effected mainly by upgrading his academic and professional qualifications.

Teacher Education:

5.0 Training Facilities: The training facilities for teachers have expanded substantially over the years, with the result that the percentage of trained teachers in elementary and secondary schools has increased from 56 in 1951 to 83 in 1971. The stage-wise break-up of the trained teachers is shown in Table 2.

Table 2. Progress in the Training of Teachers

Schools	Percentage of Trained Teachers	
	1951	1971
1	2	3
Primary	58.8	82.9
Middle	53.3	84.9
Secondary	53.8	81.2

The figures, indicated for 1971, are provisional. By the end of the Fourth Plan, the percentage of trained teachers is likely to rise further and may be around 85 for all the stages taken together. The augmentation of training facilities has generally enabled the States to prescribe a degree or diploma/certificate in teacher training as an essential qualification for recruitment of teachers to elementary and secondary schools.

5.1 There are substantial variations among the States as far as the percentage of trained teachers is concerned. If the training of teachers is regarded as an essential requisite for making instruction in schools

efficient, the goal should be to ensure that every teacher in primary, middle and secondary schools is trained. Judged from this criterion, the States of Himachal Pradesh, Haryana, Punjab, Rajasthan (except for middle schools), Andhra Pradesh, Kerala, Tamil Nadu and Gujarat and the Union Territories of Chandigarh and Delhi have almost reached universality in the training of teachers in all the three types of schools. Since these statistics relate to 1971, there is every likelihood that some other States and Union Territories, such as, Bihar (except for secondary schools), Maharashtra, Uttar Pradesh (except for middle schools), Mysore Pondicherry, L. M. & A. Islands and Dadra & Nagar Haveli will also reach near universality in the training of teachers by the end of the Fourth Plan. Practically, all the States and Union Territories in the Eastern region are backward in teacher training; the percentage of trained teachers in this region varies from 29.2 in Nagaland to 72.8 in Assam for primary schools, from 15.8 in Nagaland to 45.1 in Arunachal Pradesh for middle schools and from 14.9 in Nagaland to 60.4 in Tripura for secondary schools. In the Fifth Five Year Plan, these States and Union Territories will have to make a large effort in expanding training facilities for teachers.

5.2 Inservice Education: The augmentation of training facilities will no doubt increase the supply of trained teachers for future appointments to teaching positions. Meanwhile, efforts have to be made to upgrade the competence of the existing teachers. This will involve in-service training of the trained teachers and the training of untrained teachers. The data collected by the Second Education Survey have indicated that, of all the untrained teachers in primary, middle and secondary schools/sections, two-thirds were below 30 years of age and

80 per cent below 35. These teachers will continue to teach in schools for many years to come and would, therefore, need to be given some form of training with the purpose of improving instruction in schools where they are posted. Many of these teachers have been working in schools for many years. The length of their teaching experience should be taken into account while organising training programmes for them.

5.3 Educational Qualifications: Another aspect of the problem of making school instruction effective is that of upgrading the educational background of the teachers already in service. Although, partly because of the increased supply of high school and college graduates and partly because of the inability of the economy to absorb all of them in alternative occupations, schools are recruiting better qualified teachers, a large number of existing teachers do not possess the minimum qualifications regarded as essential for teaching at various stages. Table 3 illustrates:

Table 3. Educational Qualifications of Teachers

Educational qualifications	Percentage of teachers		
	Primary Schools	Middle Schools	Secondary Schools
1	2	3	4
Below middle pass	1.92	13.09	0.31
Middle pass	49.65		
Matric	41.27	49.65	8.75
Intermediate	4.64	11.83	5.33
Graduate	1.39	14.91	54.73
Post-graduates	0.11	2.55	20.70
Others	0.98	7.92	10.27

These data are from the Second Education Survey. The position would no doubt have improved since 1965. However, there would still be a large proportion of underqualified teachers whose educational level will need to be upgraded. The training institutions could, in collaboration with general education institutions, provide condensed and correspondence courses for these teachers as well as organise summer courses for improving their knowledge of the subjects that they teach.

5.4 The emphasis on expansion of educational facilities and inadequate attention to the qualitative aspects of education, have adversely effected the standards of education and training of teachers. Training facilities have, more often than not, been expanded without regard to the maintenance of adequate standards, partly to meet the urgent demand for teachers; sub-standard institutions have consequently been allowed to come into existence. In most institutions, acute shortages of building space, equipment, library facilities and, above all, of qualified staff continue to persist. These and other deficiencies would need to be removed in order to upgrade the professional preparation of teachers.

University Education:

6.0 Enrolments: There has been considerable expansion in the field of university education. The enrolment in arts, science and commerce courses is expected to increase from 2.2 million in 1963-59 to 3.5 million by the end of the Fourth Plan, thereby exceeding the Plan target of one million. During the first three years of the Fourth Plan, 18 new universities were established bringing the total number to 89. Of these, 10 were agricultural universities. Besides the increase in

the number of collegiate institutions, facilities for higher education have also been provided through correspondence in 9 universities.

6.1 Development of higher education has been lop-sided in a number of respects. In terms of student enrolment per million of population, a number of States like Andhra Pradesh, Assam, Bihar, Madhya Pradesh, Orissa, Rajasthan and Tamil Nadu are below the all-India average of 5,197. There is a wide disparity among colleges in regard to institutional strength. In arts, science and commerce courses, 43 per cent of the colleges have an enrolment below 500 and over 30 per cent above 1000. Both represent undesirable aspects, the former of uneconomic units and the other of over-crowding. A similar situation prevails among the universities also. Further, from the point of view of enrolment as well as location of institutions, the colleges are mostly urban based.

6.2 The bulk of expansion has taken place at the undergraduate level, implying thereby that most of the students stop their education after the undergraduate stage. An analysis of the faculty-wise enrolment has shown a slight increase in the proportion of students in arts and commerce courses as against science courses. In absolute terms, however, there has been expansion in the number of both arts and science students.

6.3 Quality Improvement : A number of schemes of qualitative improvement of university education has been continued with the assistance of the University Grants Commission. These include the development of the Centres of Advanced Study for encouraging the pursuit of academic excellence; the establishment of post-graduate centres; the special development of colleges; and for the professional

and academic advancement of teachers: the organisation of summer schools, seminars and refresher courses, orientation courses for new teachers, research participation programmes, assistance for research, exchange of teachers, national lecturerships, travel grants etc. In order to inculcate a feeling of belonging among the students, campus amenities like health services, recreational facilities, vocational and professional guidance and study centres have been provided for them. The large expansion of facilities for university education, however, has to a very great extent, neutralised the effect of various schemes of qualitative improvement. This is evidenced by the almost constant failure rate of about 50 per cent at the undergraduate stage, the alarming proportion of third divisioners, particularly in arts and commerce courses, and the deteriorating quality of the average university student as reported by the Education Commission, the Union Public Service Commission etc.

6.4 Graduate Unemployment: There has been a continuous deterioration in the employment situation among the graduates and the post-graduates, particularly those of humanities and social sciences. This has necessitated the launching of special ameliorative programmes for the unemployed. The programme of setting up bureaux of vocational guidance and employment information in the universities and colleges needs to be stepped up and made more effective. No significant progress has been made in introducing diversified/vocational courses in the curricula of arts, science and commerce subjects in the universities and colleges.

Only a few universities, like Rajasthan and Delhi have taken some initial steps in this direction. The University Grants Commission's plan includes about Rs. 3 crores for special schemes for science education like short courses in applied sciences and the development of instrumentation workshops etc. The progress of these programmes, however, has been negligible.

Social Education:

7.0 The spirit of the Constitutional Directive regarding elementary education requires that all citizens must have a certain minimum of education required for participatory democracy and development. This implies high priority to adult education. It has, however, received only a low priority in the Plans. Adult education was earlier equated with literacy. The failure of mass campaigns to remove illiteracy, launched in 1937, when the Congress assumed power in the provinces, led to the re-definition of the scope of adult education as comprehensive social education of the adults. An attempt was made to implement this concept with the launching of the countrywide programme of Community Development. Due to a variety of factors, the programmes again proved to be ineffective. The movement got scattered and programmes flourished only in isolated areas mostly on local initiative, which the Central and State Governments sought to encourage. As a result, a number of promising approaches have been identified. Among them, the significant ones are the Vidya Peeths of Mysore, the Gram Shiksha Mohim of Maharashtra, urban adult education of the Bombay City Social Education Committee, the village library movement and literature production programmes of Lucknow Literacy House. The most signficant experiment, however, has been that of farmers'

education and functional literacy initiated in 1961. This is likely to be extended to 100 districts by the end of the Fourth Plan and would cover about 1 million farmers. Apart from these, 'adult education' work is going on in the country under various other programmes like agriculture extension, artisan training, family planning, child and family welfare projects, nutrition programmes etc., which seek to educate the citizens in one or the other segment of their lives. These programmes, however, have had no nation-wide impact on the reduction of illiteracy. The National Board of Adult Education has started functioning recently and it has yet to become effective. Some progress has also been registered in setting up departments of adult and continuing education in the universities.

7.1 As a result largely of the expansion of elementary education, the percentage of literates in the population has increased from 24 in 1961 to 29.3 in 1971. If the most effective age-group, i.e., 15-25 is taken into account, rather than the total population, for assessing the literacy percentage, the position improves to 47 per cent. The absolute number of illiterates, however, increased from 333.6 million in 1961 to 386.7 million in 1971 due to the rapid rise in population.

Development of Libraries:

8.0 A widespread and effective library system is an essential support for informal education. The service should be either free or the subscription charged should be very nominal. In pre-Independence period, most of the public libraries were subscription libraries.

Madras in 1948, Andhra Pradesh in 1960 and Mysore in 1965 introduced a library cess to provide free public library services; Maharashtra enacted legislation in 1967 to encourage and support subscription libraries instead of taking direct responsibility for the provision of free public library service. Due to Central initiative in the First and the Second Plans, a large number of City Central Libraries, District Central Libraries and integrated library services in the rural areas were established. The tempo of library development, however, considerably slowed down in the Third and Fourth Plans. At present, besides the National Library, Calcutta, there are 2 Regional Libraries at Bombay and Madras, 12 State Central Libraries, 205 District Central Libraries and 1500 Block Development Libraries. It is estimated that so far about 2 per cent of the total population has been covered by the existing units of the service and about 5 Paise per capita per annum is being spent on the provision of library service. The library service provided is sub-standard and is largely concentrated in the metropolitan areas.

8.1 During the Fourth Plan, the implementation of the recommendations of the Review Committee of the National Library, Calcutta, were taken in hand. The progress of expenditure has been slow both in the case of the National Library, Calcutta, and the Delhi Public Library, primarily because of the delay in the formulation and approval of the schemes. In the Central sector, the expenditure under libraries anticipated during the four years 1969-73, may not be more than 50 per cent of the Fourth Plan outlay of Rs. 122.17 lakhs. The Delhi Public Library extended its facilities to different parts of the Union Territory of Delhi and converted some of the part-time libraries

into full-time libraries. Grants to other public libraries were provided though not to the extent envisaged earlier. The Central Library, Bombay, the Raza Library, Rampur, the T.M.S.S.M. Library, Tanjavoor, have been suitably strengthened. The development of the Central Secretariat Library was also initiated in the middle of the Fourth Plan.

Language Development:

9.0 An outlay of Rs. 14.98 crores had been provided for the development of languages in the Fourth Plan. (Rs. 14 crores in the Central sector and Rs. 98 lakhs in the State sector). The outlays provided in the Central plan are likely to be exceeded by about Rs. 1.78 crores mainly due to the scheme of appointing Hindi teachers in non-Hindi speaking States which has made considerable progress. Under this scheme, about 10,000 teachers are likely to be appointed in the middle and secondary schools in non-Hindi speaking States by the end of Fourth Plan. The progress in regard to the other schemes of the development of Hindi, Modern Indian Languages and Sanskrit has also been, by and large, satisfactory.

Book Production:

10.0 The National Book Development Board was set up in 1967 to lay down the guidelines for the overall development of the Indian book trade and industry. It has made many useful recommendations. The major difficulty in implementing these recommendations stemmed from the absence of counter-part organizations at the State level. The Central Government has also set up the National Board of School Text-books, which held its first meeting in April 1969 with the National Council of Educational Research and Training as its programme secretariat.

This Board will function as a clearing house of information and ideas and as a coordinating agency at the Central level for building up and maintaining national standards of production and for carrying out and encouraging curricular research and experimentation. The Board however, has to be activised and made more effective. The Central Government has also launched the scheme for the production of university level books in Indian languages under which a Central grant of Rs. 1 crore has been provided to each of the State Governments, except Nagaland and Jammu & Kashmir. There are expected to be shortfalls under this programme and against the Fourth Plan allocation of Rs. 12 crores only Rs. 9.39 crores are likely to be spent.

10.1 The State Governments have entrusted the work of providing university level books to specially constituted autonomous or departmental boards, language institutes and Granth Academies. The difficulti experienced by the State Boards have become chronic. They relate to scarcity of paper and training facilities, lack of enthusiasm on the part of individual universities, dearth of trained personnel, absence of sales agencies and, finally, the poor quality of end-products in content and presentation. While the Commission of Science and Technical Terminology coordinates the working of the Boards of Hindi speaking States, the other language Boards are functioning practically in isolation, without the help and assistance or guidance of any supervisa

authority or coordinating agency. Even where the production targets have been achieved, the books have largely remained on the shelves the godowns.

10.2 Another scheme launched by the Central Government was the establishment of the Raja Ram Mohan Roy National Educational Resource Centre, under which a text-books reference library was set up in July, 1972, to provide facilities for teachers, authors and publishers etc., to undertake research in various aspects of the production of university level books in English and in Indian languages. The Centre is also expected to act as a lending library to students, and carry out surveys about the availability of Indian books which can replace foreign books now in use in the universities. The Central Government has also carried out the documentation and analysis of imported books. Useful data have been collected for the purpose of designing a meaningful import policy for books. The scheme also visualises the setting up of a net-work of libraries up to the District level. Not much progress has, however, been made in this regard. The Central Government's scheme of giving subsidy to publications by Indian authors has also not progressed satisfactorily.

10.3 The National Book Trust undertook a number of schemes for the promotion and production of books. It also organised exhibitions and held seminars of writers and publishers. The Trust has so far released nearly 892 books under various series. The important series

are the Adan Pradan Scheme for producing books which promote inter-regional understanding, and the Nehru Pustakalaya Scheme under which 23 titles have been published against the Fourth Plan target of producing 100 children's titles. The Central Government has also schemes of subsidising the production of cheap editions of foreign books of which the main expenditure, however, is borne by foreign governments. In 1972, a major undertaking was to celebrate the International Books Year by holding the World Book Fair; as part of the Fair a number of seminars were also held.

Cultural Programmes:

11.0 An outlay of Rs. 14 crores was provided for cultural programmes in the Fourth Plan (Rs. 8.25 crores in the Central Sector and Rs. 5.75 crores in the State sector). There is likely to be a shortfall of Rs. 1.5 crores in the outlay for the Central sector due to inadequate staff support for some schemes and procedural delays; the latter affected particularly the schemes relating to the re-organisation of the Archaeological Survey of India, construction of an annexe to the building of the National Archives of India, and the development of the National Museum.

Games, Sports, Physical Education and Youth Services:

12.0 The National Youth Board was set up which formulated schemes for the welfare of the student and the non-student youth. The programmes for the welfare of the non-student youth were finalised very late and their implementation was held up; consequently, they did not make much progress.

12.1 The development of National Institute of Sports and National Coaching Scheme was satisfactory. Grants were given to national sports organisations and to the State Sports Councils. India's performance at the international meets, however, needs considerable improvement. The various coaching schemes hold promise of greater success in future international meets. The Sports Talent Search Scholarship scheme programmed well. Competitions were organised during the last three years for rural young men and women. This should widen the area of choice for recruits to national and international events. The National Physical Efficiency Drive was organised regularly, but the interest of the people has not yet been roused to the extent anticipated at the beginning of the Fourth Plan. The Government has also tried to promote training and research in Yoga. The scheme of Planning Forums was languishing for want of patronage from most of the State Governments. The Central Government on its part was willing to help the Planning Forums but the counterpart funds were not always forthcoming from the State Governments. Scouting and guiding were given the necessary support. The schemes of National Service and National Sports Organisation made a promising start. The programmes of national integration camps, organised chiefly by the National Council of Educational Research and Training and, to some extent, by the Kendriya Vidyalaya Sangathan and some voluntary organisations, proved very popular.

Technical Education

13.0 In the context of unemployment among engineers, the annual admissions to technical institutions remained at a low level, the

actual admissions being about 64 per cent of the approved capacity. The stress in the Fourth Plan was on the consolidation of existing institutions and programmes and on qualitative improvement of engineering education through faculty development, curriculum research and reorientation of courses in relation to the needs of industry.

13.1 The progress of implementation of several programmes was varied. Some of the State Governments did not accord sufficient priority to the consolidation schemes with the result that the outlays provided for technical education are not likely to be utilised in full. In regard to quality improvement programmes, procedural difficulties did not allow some State Governments to take full advantage of the faculty development schemes. It was also not possible to utilise fully the training places secured in industry for the serving teachers even though the number of such places fell short of the targets set out in the Plan. Being pioneering in nature, the curriculum research activities were planned on a pilot basis in selected institutions. There was initial delay in starting this work due to the organisational problems involved in constituting expert groups in the selected colleges and institutions. Measures to speed up these programmes have, however, been identified recently by the All India Council for Technical Education.

13.2 Programme of diversification of diploma courses were introduced by most of the State Governments. The practical content of training was sought to be improved through sandwich courses which have been organised in about 60 engineering colleges and polytechnics. In

addition, the entire system of polytechnic education was examined by a special committee. A plan of action has been prepared in consultation with the State Governments to bring about reforms in the structure, content and organisation of diploma courses, to ensure practical orientation of these courses in cooperation with industry and to diversify the subject fields into relevant technological specialisations.

13.3 The scheme of post-graduate engineering education and research is currently being reviewed with a view to preparing a blue-print for meaningful development at this level. A joint committee is being set up by the University Grants Commission and the Ministry of Education to undertake a comprehensive review of the first degree level courses in engineering and technology.

13.4 Keeping in view the importance of management education for meeting the requirements of industry and business, it was decided to establish two more Institutes of Management at Bangalore and Lucknow.

13.5 As a result of the developments so far, the technical education system, represented by the 445 engineering colleges and polytechnics with over 20,000 engineers and technologists employed in their faculty and the modern facilities available in their laboratories and workshops, is in a position to admit over 74,600 students, if necessary, and to graduate, consequently 55,000 engineering graduate and diploma holders annually.

13.6 The educational programmes offered in these institutions cover a wide range of specialities so that it would be possible

for the system to meet the future demand for engineering manpower in all these specialities, and in addition, to take care of the emerging needs by making suitable changes within the system itself. Being widely spread out in their locations, the technical institutions provide a wide network of specialised media to extend the services of engineering and technology for meeting the needs of urban and rural development.

Educational Planning and Administration

14.0 An adequately equipped machinery for planning and administration is essential to ensure educational development on desired lines. Adequate attention was, however, not given to the development of organisational arrangements for educational planning. As at present organised, the planning activity of the Education Departments consists primarily of consolidating and transmitting inadequately worked out proposals, received from different sections, to the State Planning and Finance Departments. The long-term perspective of educational development, in the context of which a five year plan could be conceived of as a stage in reaching the overall objectives, has generally not been worked out in the States. The informational inputs, which alone would help in preparing a realistic estimate of the needs and resources, were inadequate. The staff available at the State and the District levels for educational planning was inadequate; the personnel responsible for educational planning were appointed generally for considerations other than those of professional expertise required for the job.

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14.1 The system of communicating policies and programmes, and their objectives and action to be taken, continues to be weak; this was partly responsible for the distortions in educational schemes at the level of implementation. This was, also partly due to the fact that the schemes were proposed in generalised terms, providing little guidance about the nature of the tasks involved and the specific responsibilities of individuals and institutions. In order to improve implementation, there is need for a detailed working out of the educational projects.

14.2 The machinery for collection, consolidation and speedy transmission of information is inadequate. The statistical information collected is not only delayed considerably, but is also inadequate for planning purposes. The personnel incharge of educational statistics are not adequately trained; because this is not their only concern, they cannot give undivided attention to the compilation of information. While the educational statistics, now being routinely collected, are useful, they do not allow a critical evaluation of the extent to which various educational goals are being realised; a realistic formulation of the programmes for future implementation is also not possible. The delays that occur, further reduce their utility for planning purposes. Empirical studies in the field of educational planning, which could develop insights into the several non-quantitative aspects of educational development, are also few and inadequate.

14.3 A machinery for formulating an overall policy for the integrated development of higher education at the State level does not exist. There have, therefore, been imbalances in the development of general and professional education, in terms, for instance,

of enrolment, financial support and so on. The colleges affiliated to universities do not have a voice in formulating the development plans of the universities although they cater to the bulk of the university enrolments. The State Governments, who have to meet the commitments arising from the assistance given by the University Grants Commission to universities, are not associated at the time of determin the development needs of various university departments. This has created serious difficulties for universities, both in respect of maintenance expenditure and their ability to find matching expenditure for lifting the University Grants Commission's assistance. The need for, and importance of, formulating institutional development plans are yet to be incorporated into the educational planning process.

III. PERSPECTIVE OF DEVELOPMENT

15.0 Ever since Independence, the Indian Education System has been going through the pangs of transformation under the impact of a series of challenges. The most important of these are: unemployment of the educated; low productivity; explosion of numbers; the need for social justice; the necessity for achieving excellence; urbanisation; the urgency of building up national character, national identity and national integration; dislocation caused by rapid changes; and lastly, the risi costs. The new trends in Indian education have developed in response to these challenges, but have crystallised in varying degrees of definiteness; from half awareness to a fair degree of successful implementation. That was, however, to be expected. For, changes in the education system are the

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most difficult to effect, involving as they do millions of teachers, students, parents, administrators and others.

15.1 Educated Unemployment: The most serious challenge to the education system has come from the ever-increasing unemployment among the educated. This is so because of the very large numbers involved, of the most vocal and volatile group, whose major expectation of employment is frustrated. This is also perhaps the most important cause of student unrest and violence, which poses a threat to the entire fabric of society - not only to its present but also to its future. The unemployment problem encompasses the whole economy and its strategy of development. Education, however, has the responsibility of ensuring that its products are more employable and more capable of adapting themselves to changes in the employment pattern. For this, in the first instance, education at all stages, must develop basic skills, attitudes and characteristics, which are relevant to the entire spectrum of vocations. These are: finger skills, muscle coordination and an eye for detail; initiative, resourcefulness, habits of planned and systematic work and qualities of leadership; and a sense of the dignity of manual labour and a cooperative spirit. These qualities are best developed by an activity-centred and problemcentred education, closely related to the environment. The methods of teaching should be such as to promote scientific thinking on work. Education must be production centred or at least related to production.

15.2 Another contribution that education should make towards the solution of the unemployment problem is to lend intelligence and research support to the improvement of the traditional sector through

making education centre round its problems at the first two levels of education and taking up its problems for research and investigation under appropriate courses at the university stage. It will have a double advantage. As the large body of pupils and teachers begin to apply their mind to the traditional vocations, they will begin to suggest many an improvement in them, which may be small in themselves but their cumulative effect will be considerable as the mass of agriculturists and artisans imbibe these improvements. Secondly, such an exercise will throw up potential inventive talent, which can be deliberately built up. The steady improvement of the traditional sector, with the help of science and technology, can play an important role in easing the unemployment situation in developing countries, where the traditional sector today supports the largest number of workers, where the possibility of absorption of the labour force in the modern sector is limited, and where, obviously, the first step to tackling the unemployment problem must be to prevent the shrinkage of existing employment opportunities through the stagnation and consequent desertion of the traditional sector.

15.3 Another responsibility of the educational system is to guide its products in regard to the available and developing employment pattern. While we have made some headway in developing educational and vocational guidance services, it is like scratching the surface. A guidance system suited to our circumstances and our resources has yet to be evolved. The cooperation of the employment system and the educational system, which has evolved, will need to be further strengthened.

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15.4 Vocationalisation of the higher secondary stage is another identified need and, to some extent, developed, in the form of engineering and agricultural polytechnics, training of para-medical personnel, etc. The vocations already identified have, however, limited absorptive capacity and new areas requiring trained manpower need to be identified and the training for them will need to be organised by the close cooperation of the employing authorities and the educational institutions. It is, however, doubtful if the organised sector will be able to absorb the large output from secondary schools, who will, therefore, have to be prepared for self-employment through the development, by the education system, of those basic characteristics already mentioned, identification of development possibilities of an area, provision of necessary training and State help- financial, organisational and infra-structural. The problems of employment at the end of the secondary stage have yet to be throughly studied, although this is the most strategic area from the point of view of the educated unemployed. For, if we can settle most of the students coming out from secondary schools in employment we will be able to reduce to manageable dimensions the problem of numbers in our universities.

15.5 At the higher stage, while professional education has to be and can be - within limits -- related to the requirements of the economy, general education cannot be related to specific requirements - except in the case of teachers - and has to be regarded

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as a general upgrader of the labour force and an agency for promotion of social mobility. The expectations from general education of specific employment - clerical jobs - is irrational and our youth need to be educated through every possible channel of what they can expect from their education. It can and ought to improve their general capability of fitting into available jobs and improve their profitability. The introduction of work experience and practical projects should help in this orientation of the student mind. Introduction of specific vocational courses should, however, be done only after a careful assessment of the market needs; for a vocationally trained man, unwanted by his vocation, is much more frustrated than one who has gone through general education and who is more inclined to explore the employment market and adapt himself to available opportunities. Vocational education is also much more expensive.

15.6 Increasing Productivity: Closely allied to the problem of unemployment is the problem of increasing productivity, especially if improved technology is ruled out for reasons of maximum employment creation. In that case productivity depends upon thebasic skills of the worker and his attitude to and habits of work. The challenge of increasing productivity, therefore, reinforces the need for the educational reforms that are required for meeting the challenge of unemployment.

15. 7 Explosion of Numbers: The Indian educational system has experienced an explosion of numbers - second only to what has happened in China - primarily due to population increase and the

expectations aroused by independence for realising which education appeared to be the only means. This has severely strained available resources, even though the expenditure on education has been growing at a faster rate than the national income. This has led to three important developments in the field of education. First, the necessity and importance of informal techniques of education - correspondence courses, use of radio and television, evening colleges etc., - are being increasingly realised. It was, therefore, stated in the Fourth Plan that institutional facilities at the university level will be expanded only to the extent of available resources while additional demand for higher education will be met by informal channels of education. Not much progress has, however, been made in this regard. The situation requires a most serious effort in the coming years.

15.8 Second, the middle and upper class expectations of education no longer suit the diverse class composition of the students. The courses have to be more practical and varied to suit the complexity of the consumer demand which has emerged, the varying aptitudes which have to be catered to and the vast and varied employment market for which students have to be prepared. Finally, the campus has increasingly become a microcosm of society with all its complexity, variety, tensions and pressures. Its placidity has disappeared. The interaction of the society and the academic institutions has increased manifold. The teachers and students are no more the same. The outdatedness of the curriculum, methods of teaching and

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examination - which have, by and large, remained unchanged-- has come into still sharper focus and the irrelevance of much of the education imparted has been further underlined. A new balance between the forces at work has to be arrived at. New codes of behaviour have to be defined. The revision of curricula, methods of teaching and examination have to be given the highest priority.

15.9 Demands of Social Justice: Any serious pursuit of social justice in poor countries like India involves bringing in educational institutions the majority of the masses who had been kept out under the scheme of limited opportunities which held sway in the pre-Independence period. The increase in numbers coming up for education in India is terrific and yet this rush is going to continue and increase; for, the percentages of population in schools and colleges are still relatively small. The poorer classes coming in for education for the first time do not know what reasonably to expect from education and which courses to take. The task of guiding them into appropriate courses becomes very delicate. The large scale entry of these classes into the educational system also increases the costs of education. Incentives in the form of free education, food, clothes, books, slates, transport etc., have to be ensured to enable them to take advantage of the facilities provided. And still a poor child may come to school after having been permanently handicapped due to deficient diet in his earlier years. The deadweight of his

environment is another factor which must be removed through programmes of adult education, residential schools etc.

15.10 A multi-pronged attack appears to be called for. Firstly, the capacity of school and college communities to help themselves must be progressively developed. So should their capability to help the community around and the nation at large so as to persuade the latter to help the schools and colleges in return. This will not only increase the resources for education, but also develop in students habits of self-reliance and breed in them a sense of responsibility. Secondly, our educational planners and administrators must increasingly become cost conscious and various research and investigations should be launched to see how things can be done more economically. Thirdly, parents must be drawn into partnership with teachers, through parent-teacher associations and projects of adult education, not only to help the education of their wards, but also to mobilise resources for the school and to enable the education system to respond to change more smoothly. Fourthly, the facilities for informal education should be increased not only to conform to the concept of life-long education, but also to reduce costs.

15.11 Challenge of Excellence: In this competitive world no nation can survive without the pursuit of excellence. This requires concentration of resources of finance and talent in a few institutions. Here the policy comes into conflict with the democratic urge for equality. The two can, however, be reconciled if those who

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enter these institutions are really talented, irrespective of the means of their parents. In poor countries the problem is one of identification of potential talent, which will eliminate environmental advantages and handicaps. No reliable tests for such identification of the potential talent have yet been devised and the challenge to educational researchers still remains to be met. After identification, the State must take complete charge of such children so that they are nurtured as a national asset. They should be put into the best institutions that the State can devise. Care will, however, have to be taken to see that the cost is kept down by concentration on essentials through a high degree of managerial efficiency and that the standard of living of the students is as austere as possible so that a leadership is evolved which is not too far removed from the life of the people whom they have to serve. It is even more important in the case of these schools that they should be linked to the society through programmes of community service.

15.12 We can get maximum return from our institutes of excellence if, as far as possible, we can keep their cost not so far removed from the average institutions as to make the experience of the former irrelevant to these institutions, to which they should be linked and from which they should receive their feed-back. They should also be linked with research institutions like the N.C.E.R.T. the State Institutes of Education etc., to draw ideas from them. There should also be a very alert system of evaluation

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15.13 The inter-communication among these institutes of excellence must also be firmly established as well as a system of sharing by them of their facilities like libraries, workshops etc. The communication of these institutions with similar institutions at the international level should also be improved. This will lead to cross-fertilisation of ideas and will ensure a durable process of raising the quality of education to international standards. At the same time, the work in our institutes of excellence must be thoroughly rooted in our national needs.

15.14 Urbanisation: The prevention of large sections of the rural population, especially the educated ones, moving into urban areas and thereby impoverishing the countryside, is bound to be a top priority programme in a country where more than 50 per cent of the GNP comes from agriculture and where the possibilities for the creation of additional jobs in the modern sector are severely limited. Further, the disillusionment and frustration of the people who move into the urban areas become an important factor in creating conditions of social and political instability. The cost of providing the minimum social amenities to these migrants is also very heavy. Besides these, many other complications arise out of this vast migration of people to the urban areas. It is necessary, therefore, to create

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more and better paying jobs in the countryside. This requires the building up of growth centres, creation of a network of infra-structural facilities for development like roads, power and water supply, transport facilities etc., more investment in agriculture and agro-industries; more R&D research to make existing industries in the rural areas more paying; and a system of education that would enable those in the traditional sector to absorb the results of research and to draw into its fold millions and millions of people who develop the habit and capacity of thinking rationally on these traditional occupations, thereby leading to their progressive improvement. The system of education must breed respect for the rural environment instead of creating contempt for, and an alienation from, it as at present. It must prove that the rural environment is as challenging as any other by making education problem-centred. The dignity of labour must be inculcated by introducing in manual work the element of intelligence, thereby demonstrating that the division between manual and intellectual work is artificial. Intellect divorced from manual work and vice-versa do not give us the best results. The importance of rural areas in the total picture of development must be clearly brought out to the rural people so that they do not get the idea that they are second-rate citizens.

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15.15 Building national character, national identity and national integration: Resources, both material and intellectual, are important but what really determines the success or failure of a nation is its character, the sense of responsibility and dedication of its citizens, habits of thinking on what they do, capacity for team work, initiative and integrity. All this points towards a system of education which is activity-centred and problem-centred. This has implications for changes in the curriculum and methods of teaching.

15.16 The citizens have not only to be developed individually and in groups but have to be integrated into a nation. Every nation has a personality which must be carefully identified and nurtured. For this purpose we must develop our roots, understand our cultural heritage and be proud of it. We must know what we have achieved in the past and to what extent it is relevant today - in every field whether it is architecture, medicine, science and technology or the humanities. We must also put before our youth our capacity for synthesis and tolerance. These are the qualities that have enabled us to continue to exist in spite of the onslaught of history. Our cultural variety requires that there should be very active inter-communication between the various parts of the country. That requires our capacity for learning various

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languages which should be increased by the adoption of modern methods; for it is only through the language of one another that we can understand our sub-cultures. Also, education has to be in the mother tongue to promote talent and creativity. Hence increasing priority has been attached to language development and book promotion in our development plans. This priority has to be further upgraded. Another important fact which must receive our attention is a need for constructive interpretation of history.

15.17 Not only is it necessary for us to develop our sense of common heritage but also to develop a sense of common destiny. For this, it is necessary that the study of our Constitution, our development plans, and of our current social, economic and political problems, becomes an essential part of our education system. Our present problems must be studied in our universities in the perspective of history and with academic detachment. Lastly, the gulf between the masses and the elite needs to be bridged. In this respect, programmes, like the national service scheme, assume very high priority.

15.18 Building of national cohesion need not and should not mean international animosity and exclusion. It should be built through the inculcation of a sense of progressively widening social responsibility and the culmination of a progressive taming of the ego. The individual must learn to live for the family,

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the family for the village, the village for the district, the district for the State and the State for the country and the country for the world. By these ascending and expanding circles alone can we realise our destiny. In isolation the drop has no significance, but, as a part of the ocean, it shares its majesty. The policy of exclusiveness can lead to annihilation. This perspective has to be built among children and kept up throughout their period of education through appropriate activities, lessons included in textbooks etc.

15.19 Challenge of Change: In a world of sweeping changes, of exploding knowledge and of on-rushing obsolescence, the education system has to turn out people who will not be swept over by change but be able to stimulate, direct and, at the same time, adapat themselves to, the rapidly changing environment. This requires that, in our educational system, there should be emphasis on an understanding of the principles rather than on their application and on a capacity for analysis and synthesis of observed phenomena. While the principles would remain the same, their application would undergo changes; and the knowledge of principles would enable the future worker to adapt himself to change in technology with ease. Again, there will have to be greater emphasis on developing the capacity for acquiring knowledge through self-study rather than on imparting maximum possible quantum of knowledge.

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15.20 Emphasis will also shift from pre-employment education to a life-long sysyem of education, which will increasingly bring in informal agencies of education and training. In this life-long system of training and education, the employing authorities will have to increasingly participate though the educational institutions will also have to make their contribution. Adaptability to change requires innovation. For that, institutions - at least the better equipped of them - should be free to innovate and there should be a system by which innovations, found to be sound, can be incorporated into the entire educational system with ease. To make this easy, among other things, parents must be brought into close partnership with educational institutions to win their cooperation instead of resistance to the process of change. The administration must also develop the capacity for absorbing the impact of change. They have been so far not equipped for the purpose and that is why most of the new lines of development that we have tried have come to grief. This is the biggest challenge the country faces: to convert the education system and its administration from a conservative force to an agent of change.

15.21 Rising Costs: The cost of education has sky-rocketed primarily because of the rising prices, but also because, as already pointed out, with the need to provide incentives on

a large scale to the poorer sections of society. It is moreover essential to continually improve the standard of education, which also requires more financial investments. In order to contain the expenditure within the limits of available resources, a new system of financing would have to be considered. Financial burden must be dispersed among beneficiaries, especially at the higher stages of education, where the benefits become substantial in economic terms and the beneficiaries can be clearly identified. The State finances provided for elementary education must be substantially augmented by contributions from local communities to whom its benefits are confined. As regards secondary education, its burden should be borne by the districts. Vocational education at the secondary and higher stages should be financed by the students and the trade, commerce and industry. So far as general education at the higher level is concerned, higher fees must be charged from the students themselves, unless the education given is for the preparation of teachers in which case the education departments must bear the major burden. Higher fees have, however, to be counter-balanced by a generous provision of scholarships for the under-privileged sections of society. Every programme must be cost-conscious. Maximum self-help must be developed among school communities. The relevance of education to the local communities and the nation at large must be increased. The resources of institutions,

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especially technical institutions and universities must be used for solving community and national problems. Further, the facilities provided must be fully utilised. For example, schools must be used as community centres for purposes of adult education, pre-school education, and part-time education; and as feeding centres, recreation centres, village libraries etc. The schools should be linked effectively with the extension machinery and thereby helped to develop as centres of socio-economic change. ..

15.28 The lines of the needed reorientation of the educational system have become fairly clear and the years ahead should see considerable progress being made in the directions indicated. It is in the context of this future perspective that the development tasks in the individual sectors of education are discussed in the following paragraphs.

Elementary Education

16.0 The implications of mass literacy for economic development, modernisation of the social structures and effective functioning of democratic institutions need no emphasis. From this point of view much greater importance would have to be given to the spread of elementary education and, what is more important, to its qualitative improvement. The elementary school should be enabled to function, with the assistance of various extension agencies, as a vehicle for the general transformation of the life in the country-side and for upgrading the technology of the farmer and the artisan. This will

require careful planning of the curricular and co-curricular programmes of the elementary school with particular emphasis on work experience, personal and social hygiene, citizenship training and community relations; an upgrading of the competence of the teachers; effort at mobilisation of community support for the school, a general improvement of the school's physical conditions for improving its productivity and efficiency; development of collaborative arrangements with various development departments; and a close linking of the school with technical institutions and administrative organisations established at the district level and through them with those at the State and National levels. Some of these tasks are spelt out in detail.

16.1 Expansion of Facilities: The Approach Document has defined the task in respect of expansion of facilities in these words:

> "In the Fifth Plan, it should be possible to provide 100 per cent facilities for children of the 6-11 age group and 60 per cent - 50 per cent on the full time basis and 10 per cent on a part-time basis - for the age-group of 11-14. Inter-regional inequalities would be narrowed down but would still remain, especially in regard to girls, where in addition to economic constraints, there are social inhibitions. Special measures will, therefore, be needed for tackling these difficulties and for stepping up enrolment to acceptable levels. In the age group 11-14, with accelerated enrolment and reduced wastage, full coverage in respect of boys and a big step up in the case of girls could be achieved by the end of the Sixth Plan."

On reconsideration of the proposed targets, it has been decided that an effort should be made to enrol 25 per cent of the children of the age group 11-14 in part-time

classes. In view of the difficulty of providing additional resources it was suggested that a strategy should be devised to provide for additional enrolment within the resources proposed for elementary education. In the light of the above directions, the enrolment levels which should be reached in the Fifth and Sixth Five Year Plans are indicated below.

Enrolment in Classes I-V and VI-VIII

Age group 6-11/ Classes I-V	1979			1984		
	Boys	Girls	Total	Boys	Girls	Total
1. Population (lakhs)	416.3	389.5	805.8	431.3	412.9	854.2
2. Enrolment (lakhs)	456.0	350.8	806.8	507.5	453.2	960.7
3. Enrolment as per cent of the population	109.5	90.0	100.0	115.0	110.0	112.5
Age group 11-14/ Classes VI-VIII						
1. Population (lakhs)	237.3	220.9	458.2	259.0	240.0	499.0
2. Enrolment (lakhs)	223.0	121.0	344.0	259.0	180.0	499.0
a) Full time	148.0	81.0	229.0	195.0	132.0	327.0
b) Part-time	75.0	40.0	115.0	*	*	172.0
3. Enrolment as per cent of the population	94.0	54.8	75.0			100.0

The experience of organising part-time classes in the Fifth Plan should make it possible to educate a much larger number of children through these classes in the Sixth Plan and complete the task of universalizing educational facilities.

* To be determined in the light of the Fifth Plan experience

16.2 The targets of enrolment are shown as an indicator of the magnitude of the institutional effort involved in the implementation of the programme. The Steering Group, however, emphasises that the real aim of universalisation of elementary education is to ensure that all citizens receive a certain minimum of knowledge and basic skills, either formally or informally, rather than merely of increasing enrolments in elementary schools. This would require a package programme including provision of facilities in regular schools, organisation of continuation education for children who cannot, for various reasons, attend schools on a regular basis, institution of multiple entry points, provision of incentives for the poor and weaker sections and the organisation of part-time classes for providing basic knowledge and skills to adults, the school drop outs or those in the school going age-group who had never been to school. The importance of multilevel planning in this regard can hardly be over-emphasised. In order that the basic objective is achieved, it would be necessary to consider the educational needs of small homogenous groups at the area level and to provide for such types, levels and methods of education as would effectively meet their needs.

16.3 The Steering Group notes that the educational status of a family had great influence on a child regularly attending school and being retained for the full period of compulsory education. It was, therefore, necessary that the programme of universalisation of

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elementary education should be supplemented by a massive programme of adult education as recommended later in this report. In doing so, part of the time of elementary school teachers could, with profit, be diverted to the education of the parents.

16.4 The universalisation of elementary education is a programme of national importance and would require to be given the highest priority. With a view to ensuring that the programme is implemented with speed and that the funds provided for it are not diverted, it is necessary to have it regularly monitored and evaluated. The State Governments should set up high powered committees for the purpose. The work of these committees may be coordinated by the central agency, recommended later so that the communication chain is complete from the Centre to the districts where most of the planning will have to be done for the removal of inequalities and the meeting of minimum needs for which the Centre and State Governments have joint and specific responsibilities.

16.5 Qualitative Improvement: Although the need for expansion of elementary education will continue, there should, in future, be emphasis on consolidation and improvement of elementary schools. For economic development and social progress, the type and quality of education and training provided is more important than the numbers who are educated. Over two decades of planning, resources and energies have, by and large, been

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concentrated on increasing enrolments, and very limited attention has been given to those intangibles of education - curricular reorientation, effective instruction, suitable consultancy and organisational arrangements - which are really significant for making elementary education play the role, that it should, in social and economic development. Many of these programmes do not require large financial investment but are dependent, to a significant degree, on human ingenuity and hard work.

16.6 Reducing Wastage and Stagnation: Wastage and stagnation provide, in a sense, the quantitative evidence of the efficiency of the education system. While the complete elimination of wastage will have to wait the attainment of a reasonable level of economic prosperity in the countryside and the recognition by the people of the value of education, stagnation is a resultant of the inefficiency of instruction in schools. To the extent stagnation leads to drop-outs, for instance, repetition of grades leading to frustration and lack of motivation for learning and consequent disinterest in continuing to attend schools, the programmes of improving the methods and content of education with the purpose of reducing stagnation will reduce the incidence of wastage. It must, therefore, be recognised that the educational system can go thus far, and no further, in improving retention rates. Although the economic character of the causes of wastage have been highlighted time and again, there has been a tendency to expect too much from the education system in eliminating wastage, in isolation from the problems of

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poverty and under-nourishment among the masses. While recognising the limitations of the educational system, some action programmes for reducing wastage and stagnation are proposed for adoption.

(i) Homogeneity in the Age Composition : Nearly one-fourth of the students enrolled in primary classes belong to ages other than 6-11. Major effort has to be made for achieving homogeneity in the age composition of these classes, particularly in Class I, where the rates of wastage and stagnation are the highest. Only 32.1 per cent of the children enrolled in Class I in 1951 and 32.8 per cent enrolled in 1965 belonged to the appropriate age of 6-7, 24.9 per cent of the enrolment in this Class was below 6-7 and 42.3 per cent above this age in 1965. The heterogeniety in the age composition of the enrolment presents difficult pedagogical problems, and is psychologically dissatisfying to older children, who are required to study with children of younger-ages - often 3 to 5 years younger. Older children drop out earlier because of their being more useful to the family. Restricting admission to Class I to the specified age, by careful scheduling and enforcement of the dates of admission, seems to be the solution.

(ii) Pre-School Education: The enforcement of admission dates will be facilitated by the adoption of the practice of pre-registration of children which is often followed in advanced countries, and which has also been recommended by the Education Commission. During the

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period of pre-registration lasting about a year, an attempt should be made to provide "Children's Play Centres" in close association with the primary schools. These centres will facilitate the transition of children from the informal atmosphere of the home to the formal atmosphere of the school and is likely to reduce the heavy drop-out which takesplace in Class I itself. Children's Play Centres attached to primary schools will perhaps be the only variant of pre-school education the country will be able to provide on a large scale, keeping in view its commitments under the constitutional directive to provide universal elementary education in the first instance. In addition, the provision of pre-school education by private agencies should be encouraged and so should experiments in pre-school education in different conditions prevailing in the country. The cost of these Play Centres may be reduced by entrusting their management to elderly people from the village concerned on an honorary basis, or by the teachers of the elementary school by rotation. The load of the teacher concerned may be reduced by combining his class with some other class for co-curricular activities. Similarly, time must be found by proper re-allocation of duties among the teachers for work by teachers among the parents. Both these steps - Children Play Centres and parent teacher contacts - should ensure more regular attendance of children in schools and consequent reduction of drop-outs, especially in the first two classes.

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(iii) Improving the Condition of Schools : Nearly 30 per cent of the wastage is stated to be due to educational factors. These include the dull character of the school, the uninteresting methods that are employed for teaching children and generally the poor holding capacity of the elementary schools. The existence of incomplete primary and middle schools and the consequent absence of facilities for continuing education in higher grades also result in students dropping out from the system. In States where the primary stage consisted of Classes I-V, the number of incomplete schools was 41.4 per cent while in States where the stage consisted of I-IV grades, this percentage was 12.2. To the extent possible, therefore, complete primary schools should be set up. Alternatively, complete schools should be set up in central locations, serving neighbouring areas, and within a reasonable walking distance from the homes of the children.

(iv) Teacher Preparation: In enhancing the holding power of the schools, teachers occupy a significant place. Their general treatment of the children and the teaching methods that they employ are important in increasing the motivation of children to stay on in schools. Therefore, much more importance needs to be given to the recruitment and training of teachers for elementary schools, particularly those who teach in Class I, where the basic motivation for attending school regularly has to be created. As a permanent measure, the need is to incorporate in the training syllabus the knowledge of the methods of teaching primary school children in general, and those in Class I, in particular.

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(v) Teaching Aids : Since education in primary grades must be through concrete experience of the children, the provision of space and equipment has to be more liberal in elementary schools. Its planning requires considerable thought as well as financial resources. Somehow, elementary schools in our country have tended to be the main victims of economy in non-recurring expenditure. The number of students involved is, no doubt, large, and the provision of facilities even on a modest scale requires large amounts of money. It must, however, be recognised that comparatively larger amounts per capita are spent on the buildings of the institutions providing second and third levels education. The amount spent on constructing one such building can be utilised for the construction of a very large number of elementary school buildings. Public expenditure must be proportionately distributed over the various levels, taking into consideration the needs as well as the importance of the different stages of education. A time bound plan to improve the condition of elementary schools will need to be formulated and implemented.

(vi) Change in Policy of Class-wise Promotion: Promotions through the grades should be automatic at the primary stage, without any examination taking place at this level. Failure and repetition of grades reduce motivation while promotion gives a sense of achievement to the child, motivating him for further effort. The Education Commission has recommended the abolition of examination at the end of Class I and

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that "the first two classes (and wherever possible even the first three or four) should be regarded as one teaching unit within which each child could progress according to his own pace". This idea of the ungraded school, being implemented on a pilot basis in many States, requires a change in the traditional organisation of the curriculum, and of the school in general. The contents of each subject area are divided into various steps. A child goes to the next step after he has mastered the previous one. Thus, in the same school a child might be doing Arithmetic at the IV grade level, and Social Studies at the II or III grade level. The main advantage of the ungraded school system is psychological : a child derives a sense of achievement by mastering a step, and even though he might not have completed the full contents in a subject area, which are traditionally regarded as appropriate for completing a grade, he is not made to repeat the grade. Although the implementation of the idea in an experimental form has started only recently, the impact that ungraded schools have made on reducing waste and stagnation needs to be surveyed.

(vii) Subsidising Education: The primary reason for wastage is the poverty of the people. This takes many forms as far as school attendance is concerned. The child is prematurely withdrawn in order to assist in the augmentation of the family income. Or, he may be unable to attend classes continuously for want of clothing, textbooks

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and stationery. Similarly, his achievement might be affected because he suffers from mal-nutrition. In order to counteract the effect of these and other such factors, a comprehensive system of subsidising education for them is called for. Free mid-day meals, textbooks and note books and clothing (for girls in some areas) are, therefore, in the nature of essential programmes for increasing the efficiency and the productivity of elementary schools. Since, academic achievement is affected by environmental handicaps from which a child suffers, arrangements for coaching the child in the basic skills of reading and writing are worth considering. On a nominal pay, primary school teachers, particularly in rural areas, might be encouraged to hold coaching classes after school hours for students who drop out because of their under-achievement in basic subjects.

16.7 Curricular Reorientation: There are primarily two dimensions to curricular reorientation : (a) the personal; and (b) the social. As regards the former, activities of the school should be such, and so organised, that physical and mental development of the child is ensured. In our schools, there is too much emphasis on the knowledge acquiring aspect of education; physical and mental health of children is generally relegated to an unimportant position. In a country like ours, where a large majority of the children are reared in an atmosphere of deprivation, the latter aspects assume much greater importance in education.

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16.8 If the school curriculum is to be related to life - as the objective should be - education will have to centre round the problems of life and provided in relation to the environment in which the child lives. This will require a change in both the content and the methodology of education. The emphasis will have to shift from giving information to the building of attitudes and development of abilities and skills which enable an individual to confront and solve the problems that he faces in life.

16.9 In addition to the three basic skills of reading, writing and arithmetic, the elementary school curriculum should emphasise the following :-

(i) civic consciousness and citizenship training;

(ii) personal health and social hygiene and the use of local resources for a healthy living;

(iii) knowledge of science, particularly its application to the solution of everyday problems;

(iv) work experience with a view to upgrading the technology of local occupations;

(v) appreciation of the country's cultural heritage and a confidence in its future.

16.10 Personal health and social hygiene should be particularly emphasised because healthy living is a distinct life problem in the country. Apart from providing instruction through a specific programme in health education, attempts should be made to teach other subjects through and around the problems of health living. The curricular programme of the elementary school should also include information about the history and the working of cooperatives and panchayati raj institutions which are the two key institutions in

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rural areas through which life in the countryside can be revitalised. The organisation of student self-government and, wherever possible, of a student-run cooperative store will provide students with practical experience of handling some of the problems that arise.

16.11 The programme of work experience, which has to be the major ingredient of the school curriculum, must be carefully thought out and planned for. The activities chosen will need to be socially relevant, educational, productive and possible of being organised without incurring large expenditures. The schools and its neighbourhood can provide ample scope for organising socially useful work experience. The children can participate in such activities as cleaning the school premises and its neighbourhood, preparing compost from fallen leaves and dung, taking up kitchen-gardening in the school or the backyard of the home and so on; as they grow older, work experience can be organised in actual production situations and students encouraged to assist the local farmers and artisans whenever possible. The occupational life of the community should provide a major focus for the organisation of work experience, the objective being that of upgrading its efficiency.

16.12 Since work experience activities will have to be closely related to the life of the community, it will be necessary to work out the programmes in the light of the needs and conditions of the neighbourhood. The activities chosen in urban schools would be different from those that can suit rural surroundings. For instance, it may be useful to provide tool rooms in urban schools and inexpensive tool kits to the students and teach them simple skills required for

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household repairs. In rural areas the activities chosen would generally be related to agriculture and cottage industries.

16.13 The school should be utilised as demonstration centre for the local areas. The school workshops and the school garden/farm can be utilised by the extension machinery for demonstration of improved practices of production. Similarly, the primary health centre can utilise the nearby school for organising health education of the community. The assistance given to schools in these and other areas is likely to have more lasting impact on the life of the community.

16.14 The training of children for community work and for solving community problems should receive emphasis in the school curriculum. This will require that the work of the school is extended to the community around, and that the school is regarded as an important centre for socio-economic extension. The extension machinery of the government, in agriculture, health, cottage industries etc., should extend its help and guidance to the school in the task of upgrading the technology of the farmer and the artisan. The extension departments should 'adopt' and strengthen the elementary school as a key institution through which the knowledge and practice of improved techniques can be spread to the countryside.

16.15 Use of Mass Media: A review of the efforts made in using mass media, particularly radio, for education indicates that very little effort has so far been made to explore the potentiality of

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these media for elementary schooling. Among the major reasons for the comparative neglect in the use of mass media for education are the lack of appreciation of their utility on the part of the teachers and administrative personnel, lack of adequate organisational arrangements for ensuring collaboration between the Education Department and the broadcasting authorities, lack of training on the part of teachers in using educational broadcasts as a support to classroom instruction and so on.

16.16 In order to work out a programme of educational broadcasts which is closely integrated with educational needs, it would be necessary to set up, in each State, a School Broadcasting Council under the Chairmanship of the Director of Public Instruction/Education and with representatives drawn from educationists, Headmasters of schools, professional associations of teachers and the broadcasting authorities. The main functions of the council would be to plan the programme of educational broadcasts, ensure that they are actually utilised for instructional purposes and periodically evaluate the effectiveness of the programme with a view to suggesting changes that might be required. This Council would either be constituted as an independent organisation or as a part of the Educational Technology Council which is contemplated to be established in each State.

16.17 A major means of ensuring that the broadcasts serve the purpose, for which they are intended, would be the training of

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teachers. In collaboration with the broadcasting authorities, the State Institutes of Education should undertake the organisation of inservice training in the effective use of broadcasts for educational purposes; effort should also be made, through this training programme, to develop among the teachers skills for undertaking simple repairs of the equipment that is supplied to the school.

16.18 Inservice training programmes can provide training to existing teachers. In view of the fact that the mass media have assumed great significance, future teachers should also be given sufficient training in their use. The syllabi of training schools should be suitably modified to incorporate training in the use of broadcasts and the repair and maintenance of equipment. The State Education Departments may, in collaboration with the broadcasting authorities, determine the content of such training.

16.19 An integrated programme of providing school broadcasts, of training of teachers and administrative personnel and of equipping elementary schools and training institutions with radio sets should be formulated and suitably phased. Considering that the radio sets now manufactured in the country are cheap and sturdy enough to require minimum maintenance and repair, the financial implications of providing school broadcasting facilities are not likely to be forbidding. By including maintenance and repair as part of the school's work experience programme the recurring cost of the programme can be brought down further.

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16.20 The radio lessons must take into consideration the level of physical and mental development of the children that they are expected to serve. In grades I-III, the emphasis will be generally on informal learning, the media of stories, music and play being utilised to provide to the children an understanding of their environment and of the cultural heritage. As the children grow older, the broadcasts would be more closely linked to school instruction. The listening to educational broadcasts should invariably be followed up with discussion and teachers' explanation.

16.21 As part of the effort to make broadcasts educationally effective, the School Broadcasting Council should bring out literature for the guidance of teachers. This literature should jointly be prepared by the educational authorities, particularly the State Institutes of Education and the training schools, and the broadcasting agency. There should also be arrangements for translation and distribution of some of the outstanding radio lessons developed in one State for the guidance of teachers and producers in other States. Similarly, educational broadcasts devised by the All India Radio, Delhi should be made available to regional stations.

16.22 As already being done in some States, the various stations of the All India Radio should devise specific programmes for teachers with the purpose of upgrading their knowledge of subjects and competence in teaching. Panel discussions, talks by specialists and by outstanding teachers etc., can be broadcast over the radio for the use of teachers. In order to develop useful programmes for

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teachers it would be worthwhile to associate with broadcasting stations an advisory body consisting of teachers and teacher educators.

Secondary Education

17.0 The secondary stage of education is of great significance for a country's social and economic development, particularly because it is primarily at this stage that personnel for various middle level positions are prepared. It is at the same time the most difficult stage to plan for because the growing adolescent has to be educated and trained for a variety of roles. Broadly speaking, secondary education has to prepare three types of students, those that intend to pursue academic higher education; those that intend to acquire professi education, in agriculture, medicine, engineering etc., and those that desire to discontinue education and settle down. For the first two, the secondary stage will be preparatory, for the last category of students it has to be terminal. The Education Commission recommended a variety of terminal vocational courses, after the completition of 10 years of schooling which will have to be common for all the students, for those students desiring to discontinue education.

17.1 Expansion: The demand for secondary education is bound to grow with the expansion of facilities at the lower stages. This demand will need to be determined and facilities provided at a

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basic minimum level of efficiency. In expanding facilities special attention will have to be given to the needs of the backward areas, under-privileged sections of the population and of girls, because expansion of facilities in these areas and among these groups has implications for the early realisation of the Constitutions directive regarding universalisation of elementary education. Incentives will need to be provided to promote enrolment in these areas and among these groups. Arrangements, like correspondence courses and evening classes, will also have to be made for enabling those working youth to upgrade their educational level who, for various reasons, had to discontinue education before completing school education.

17.2 A view has been expressed that admissions in general secondary schools should be restricted on the basis of merit. This is neither feasible nor desirable, especially when secondary education is required for every one for living intelligently in the modern world; when, in our country the under-privileged classes are coming into secondary schools for the first time; and when secondary education is required for social mobility and for upgrading, in general, the quality of the labour force. While admission to secondary schools cannot be restricted, there is an urgent need to check the indiscriminate opening of new schools.

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While safeguarding and promoting the educational interests of the backward areas and backward sections of the population, there is need to lay down well-defined criteria for opening of schools so that uneconomic and sub-standard institutions are not allowed to come into existence. The formulation of district plans, indicating, on the basis of objective criteria, the locations in order of priority where new schools should be established, will help.

17.3 The trend towards the total abolition of fees must be halted. Otherwise, it places a heavy burden on the public authorities to undertake the much needed programmes of qualitative improvement of education and the promotion of education among the students belonging to the weaker sections of the population and from the backward areas.

17.4 Uniform Pattern: The reorganisation of secondary education on the lines suggested in the National Policy Resolution on Education will require to be completed early to ensure, among others, uniformity of educational standards and mobility of students from one State to another. This would, however, require careful planning and preparatory work so that the real objective of raising the quality of education is not lost sight of; the administrative and financial feasibility of adding one more year of education in some of the States would also need study. This uniformity can also be ensured by the States adopting as a basis, the curricular framework prepared by the Education Commission; local adaptation of the textbooks published by the N.C.E.R.T.; specification of uniform number of days and hours for which secondary schools should function each year; and laying down of a minimum standard of achievement for a ten year general course.

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17.5 Curricular Reform: Since the curriculum provides the major means of developing desirable attitudes, abilities and skills among the students, its reorientation should receive very high priority. Science education will require to be given particular emphasis and the plans should provide for its strengthening and improvement. Efforts will have to be made to update science curricula, upgrade the competence of teachers and provide the basic essential equipment to schools.

17.6 Work Experience: Work experience must be an integral part of the school curriculum. The main objective of introducing work experience programmes would be educational - development of qualities and attitudes like self-confidence, initiative, perseverance, habits of systematic work, pre-planning and evaluation, dignity of labour, and capacity to interact intelligently with the environment. It should help the students to explore the world of work, develop tool-consciousness and provide useful skills. Since an important objective of the programmes is to relate the school to the community and its needs, work experience would largely have to be based on the occupational life of the neighbourhood, the aim being the ultimate improvement of the technologies of the various occupations.

17.7 Every pupil at the secondary stage must participate in two broad types of practical activities - agriculture - related and those related to trades and vocations. The schools will have to be provided with basic wherewithals to be able to organise an effective work experience programme. The extent to which this can be done will need to be studied and a phased programme of equipping schools drawn up. In the immediate future maximum emphasis will have to be placed on the resources available in the neighbourhood, such as, the demonstration

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and seed farms of the Government, the farms and workshops of the local farmers and artisans, the facilities available in State and private undertakings, etc. Emphasis will also have to be given on supervised home projects as have been worked out in the Regional Colleges of Education.

17.8 The strategy adopted for the introduction of work experience would broadly be as follows: an immediate introduction of simple activities as part of the school curriculum in all schools simultaneously, to be followed by a planned effort to provide, within the next 5-10 years, suitable space, equipment, teachers, guide books and trained supervision to enable these activities and others, that might be possible of being taken up, to be conducted as educational projects. In each State 5-6 common facilities centres may be established in both urban and rural areas as pilot projects which will function as museum-cum-workshops and provide facilities to a number of neighbouring schools and lend materials to distant schools. The workshop and other facilities available in multipurpose and post-basic schools, Industrial Training Institutes and Polytechnics, extension agencies etc. should be utilised by other schools. Drawing and craft teachers should be trained in the concept and methods of organising work experience with a view to meeting the immediate need of work experience teachers. Collaborative arrangements should be made with public and private sector establishments for work experience of students in actual work situations.

17.9 Vocationalisation: The purpose of vocationalisation is to divert, at successive stages of education, a certain proportion of students to vocational courses which are specifically related to the

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economy's requirement of trained manpower. By providing training in vocational skills, students are prepared for middle level positions in agriculture, industry and commerce. Vocationalisation also helps to reduce the pressure on collegiate courses by diverting students to terminal courses.

17.10 Because these institutions have developed the requisite facilities for specialised training in skills and because they have built adequate links with employers, vocational courses at the post-secondary stage will largely be provided in polytechnics, Industrial Training Institutes and other specialised institutions for the training of agricultural, para-medical and other personnel. Secondary schools should make arrangements for educational and vocational guidance of students and for the basic educational preparation on which specific skill training can be built. The Education Departments may also provide training in vocational skills for which institutional facilities do not exist at present. These, however, should be organised in the closest possible collaboration with the employing agencies, who should not only indicate their precise needs but also help in the formulation of the curricula and in teaching. The experience of multipurpose schools - as a matter of fact, vocational courses all the world over - indicates that vocational training cannot be organised effectively by departments who have little relationship with the employers who utilise the product of these courses.

17.11 The intake and outturn of vocational courses should be largely determined by the carefully assessed needs of skilled personnel. In view of the fact that the geographical mobility of the vocationally

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trained personnel is limited, training arrangements will increasingly have to be thought of in relation to local needs. District surveys of the existing and emerging occupational needs, which are being carried out, will provide the essential data for planning educational and training facilities.

17.13 An effective programme of work experience and vocationalisation can be built by coordinating the effort of the various departments and non-official agencies which establish and maintain educational and training institutions or employ their products. Appropriate organizational arrangements would have to be built at different levels of administration. The Task Force on Secondary Education has suggested some organisational arrangements in this regard. At the national level, the N.C.E.R.T. should provide an efficient information and clearing-house service regarding developments in work experience and vocationalisation. At the State level, an independent manpower cell, under the Chief Minister or the Planning Minister may be established for making forecasts of manpower requirements. In each Department manpower cells should be set up to study the needs of manpower, recruitment policies, utilisation etc. The State Institutes of Education should develop, in conjunction with the employing authorities a strong research, training and extension wing for advising the Education Department on the implementation of occupational education and training programmes. At the district level a project officer may be appointed who will, with the technical assistance of the State Institute of Education, be responsible for implementing the work experience programme including training of teachers for it, and for

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developing collaborative arrangements with polytechnics, ITIs etc. An Employment Committee may also be set up at this level under the Chairmanship of the District Collector and consisting of representatives from different development departments and commercial and industrial establishment. The Steering Group recommends that the programme of vocationalisation, including organisational arrangements required, should be gone into by an inter-departmental Committee to be set up by the Planning Commission.

Teacher Education

18.0 Affiliation of Institutions: In most of the States the existing capacity of the training institutions is sufficient to meet the additional requirement of teachers. The standards of training, however need considerable upgrading. Effort will have to be made to ensure that substandard institutions are not allowed to come into existence. Specific conditions for affiliation and/or recognition must be laid down and enforced in order to prevent the establishment of substandard institutions. The State Boards of Teacher Education, which are contemplated, should ensure that institutions applying for recognition and/or affiliation fulfil these conditions: the universities should grant affiliation to teacher training colleges only on the advice of these Boards. Through regular supervision and inspection, the State Boards should ensure that all teacher training institutions maintain adequate standards.

18.1 Curricular Reforms: There is need to critically evaluate the existing syllabi of training schools and training colleges; a major consideration should be the elimination of the non-essentials so that time is released for a more indepth preparation of the teachers.

The objectives of teacher education must be spelt out and programmes through which they can be achieved worked out. While a knowledge of the methods of teaching is essential, the knowledge of subjects that a teacher teaches is no less important. The curriculum should provide for the upgrading of the subject knowledge of the prospective teacher through remedial courses, collaborative arrangements with colleges and schools, the use of vacations, etc. Practice teaching may be organised in two stages - the first lasting one or two weeks providing a backdrop for classroom instruction and the second, in the form of a long-term internship when the teacher becomes a faculty member of the cooperating schools.

18.2 The curricular reform of training schools should take into consideration the special needs of teachers for primary schools and some of the training tasks that will emerge in the wake of expanding elementary education in sparsely populated areas, among the tribal population and among the girls. Apart from having special courses for preparing teachers for single-teacher schools, for tribal schools and for underqualified women teachers, the training schools should include training in the methods of teaching the basic skills of reading, writing and arithmetic to children coming to school for the first time. The special problems that a teacher faces in teaching class I should receive special attention as also the areas of work experience, health education, citizenship training and community relations.

18.3 Criteria for Admission: Suitable criteria must be developed for the admission of students to teachers' training institutions. Apart from general intelligence, educational performance etc. an effort must be made, at the time of selection for training, to assess

the candidate's aptitude for teaching. The present oversupply of college and high school graduates can, by this means, be utilised for recruiting better qualified students to the teaching profession.

18.4 The admission policy should also take into account the demand for teachers. While shortages of certain categories of teachers persist - for instance of qualified Science and Mathematics teachers in many States - a large number of trained teachers are unemployed and seeking employment assistance of the employment exchanges. A major reason for this imbalance between supply and demand of teachers is that training facilities are generally not based on any assessment of teacher requirements. While surpluses lead to frustration and suffering, shortages have an adverse effect on the teaching of certain school subjects. The State Governments should prepare long-term perspective of educational development indicating, among other things, the enrolment levels to be reached, at various stages and in different subjects, and the requirement of teachers for these enrolments. Admission to training institutions should generally be guided by the requirements of teaching personnel of various categories.

18.5 Inservice Training: Pre-service training should not be regarded as the end of a teacher's professional preparation. It should be incumbent on teachers continuously to upgrade their knowledge of subjects and the methods of teaching them. The rules governing their service conditions should make it compulsory on their part to undergo inservice training programmes. Suitable provisions may also be made in the States Education Codes making it obligatory on private managements to send their teachers to these training courses.

The supervisory personnel of the Education Departments should ensure that teachers are sent, at regular intervals, for refresher training. Suitable incentives, motivating teachers to do so, may also be provided.

18.6 Inservice training must be an essential function of each training school and college. Wherever needed, these institutions may be provided additional staff which alone will enable each faculty member to contribute to refresher training of teachers. Training institutions should also receive adequate financial help for improving their equipment, distributing literature to teachers and for suitably remunerating the experts who may be invited to deliver special lectures.

18.7 The objective of refresher courses should not only be the improvement of the teacher's teaching skills; they should also attempt to upgrade his knowledge of the subject. As already stated, summer institutes and vacation courses may be organised, in collaboration with neighbouring colleges, for upgrading the subject knowledge of high and higher secondary school teachers. These schools should, in their turn, be responsible for improving the subject knowledge of elementary school teachers. The effort to upgrade knowledge and skills of teachers can be undertaken economically, efficiently and on a continuous basis by the establishment of institutional complexes under which collegiate institutions provide guidance to secondary schools, and the latter work as helpers to elementary schools.

18.8 An extension services department must be established in each training college and training school and adequate finances provided for the purpose in the Fifth Five Year Plan. In the initial stages

the Central Government may consider financing the establishment of these departments. The National Council of Educational Research and Training should provide technical help in the establishment of these departments and in the preparation of plans for providing extension services to schools and teachers.

18.9 Training of Untrained Teachers: About a quarter of the teachers in elementary and secondary schools are still untrained. This, however, is an all India average. In the States of the Eastern region, the proportion of untrained teachers is very large. The effort to remove the existing backlog of untrained teachers must receive very high priority in the Fifth-Five Year Plan. The States should prepare a time-bound plan for the training of their untrained teachers. Considering that a number of these untrained teachers have been teaching for many years, special training programmes would need to be devised in the light of their age and experience. As a general rule,

(a) Teachers below 35 years of age who have less than 8 years of teaching experience may be asked to undergo regular training of 1 to 2 years.

(b) For teachers above 35 years of age and with teaching experience of more than 8 years, correspondence courses may be organised in theory while the planning and supervision of teaching practice can be undertaken with the help of the staff of the nearby training institution either in the school where they teach or during summer vacations.

The untrained teachers may be encouraged to undertake professional training through the provision of incentives, like additional increments, special allowance, study leave with pay etc.

18.10 The practice of appointing underqualified and untrained teachers, followed particularly in schools maintained by private managements for effecting savings on salaries, should be prevented. The State Education Departments should lay down minimum educational

and professional qualifications that a person should possess before qualifying for appointment as a teacher. These qualifications should be insisted upon and should be regarded as an essential condition for recognition of the school and for grant-in-aid.

18.11 Pace-setting Institutions: The quality of training leaves much to be desired. The physical and faculty deficiencies have prevented training institutions from experimenting with innovative ideas and practices. Most of the activity of the training institutions is stereotyped. There is need to radically change the role and functions of training institution. Because of the urgent need for trained teachers to meet the demands of expansion, it may be difficult to undertake a wholesale reorganisation of teacher training at this stage. A selective approach could, however, be made in introducing desirable reforms. It is suggested that, while every training school and college should be raised to a minimum level of efficiency, a few training schools and colleges may be selected in each State for special development. These selected institutions should work as centres for experimentation in new ideas and new practices and serve as pace-setting institutions for other training schools and colleges.

18.12 There is need to break down the existing isolation between different types of training institutions. Since many of the curricular programmes are common to the training of teachers for different levels and different subjects, a merger of various forms of training would help in economising on expenditure and avoiding the dispersal of good teacher-educators. It is suggested that, for future, the Comprehensive College of Education, catering to large

enrolments and providing under a single roof diverse forms of training - for examples, for elementary and secondary school teachers, physical education and language teachers, teachers for pre-school education etc. - should provide the institutional pattern for training of teachers. In the first stage, training programmes for elementary school teachers, post-graduate courses in education and inservice training programmes may be established in selected Regional Colleges of Education and the Central Institute of Education. In consultation with the Universities of the region where the college is located, these colleges may be developed into autonomous institutions with maximum freedom to plan and operate their programmes. The enrolment of each of these colleges may ultimately be raised to 1000-1500. Along with the development of selected institutions as Comprehensive Colleges, an effort should be made to select outstanding training institutions falling within the jurisdiction of the States for eventual development as Comprehensive Colleges of Education. A beginning could be made by selecting an outstanding training college in each State and establishing on its campus the programme for training of elementary school teachers.

18.13 Organisation for Teacher Education: A suitable organisation must be built in each State for the planning and coordination of teacher education programmes. It would be desirable to establish for this purpose a statutory and autonomous State Board of Teacher Education. Among other things, its functions would include:

(i) preparation of a long-term perspective and five year plans of teacher education for the State;

(ii) recommend to the State the establishment of training institutions in the light of projected teacher requirements;

(iii) advise the State Government and the universities on the recognition and affiliation of training institutions;

(iv) ensure, through supervision, inspection and other means that all the training institutions in the State maintain adequate standards;

(v) disburse grants-in-aid to teachers' training institutions;

(vi) draw up the curricula for training schools and training colleges;

(vii) organise inservice training programmes for teacher educators and school teachers; and

(viii) take suitable steps for the preparation of institutional material and other literature for training institutions and teachers.

University Education

19.0 The main problems confronting university education are: its rapid expansion without a corresponding increase in physical facilities, its lack of coordination with the social life of the community, falling standards and increasing unemployment among university graduates. The main strategy for the development of university education should, therefore, be such as to ensure that while the social demand for higher education, particularly for satisfying the rising expectations of the newly emerging socio-economic groups, continues to be met, the expansion of facilities should not be allowed to further dilute the standards of university education. University courses would need to be restructured so that the students completing their education are enabled to become useful and productive members of society. Among others, the following policy measures will need to be adopted for realising these objectives.

19.1 Admission Policy: In view of the uninhibited expansion of enrolment, particularly in the general education, leading to overcrowding in colleges, the dilution of standards and the large

scale unemployment among graduates, it has been suggested that admissions in higher education should be selective. The Indian economy at its present level of development has neither the resources to expand higher education at the present rate nor the capacity to absorb its output in gainful employment. The present level of expenditure on higher education contains an element of subsidy which the economy can hardly afford and, as it is largely availed of by the better off classes, it is hardly justifiable socially.

19.2 There are, however, equally forceful reasons against a policy of selective admissions. Besides the difficulties of evolving scientifically valid evaluation criteria, restriction of admissions would hit hard the aspirations of the economically and socially backward sections of society, who have started taking advantage of these facilities in recent times. Further, higher education, in the present day situation, is also the sin-qua-non for securing employment in higher cadres and thus selective admissions would amount to maintaining the status-quo in favour of the urban middle and upper classes. The manpower criterion for planning admissions is also very difficult to apply as the social demand for education can hardly be resisted and it is very difficult to arrive at a valid quantification of the needs of general education graduates and postgraduates in the economy. The estimation of the demand for even the highly professional manpower has been attempted only with very limited success.

19.3 The Steering Group is generally against restricting admission to higher education and favours its regulation This

could be attempted by implementing a package programme the main elements of which would include:

(a) vocationalisation of the post-matric education and thereby enabling a large number of students to settle down in occupations after completing secondary education;

(b) changing the public sector recruitment policy in such a way as to dissuade a large number of students to seek higher education in the fond hope of getting government jobs;

(c) providing for entry to higher education courses at different stages of post-employment career of the individuals; and

(d) making admission to universities and colleges on the basis of merit, with suitable concessions to the weaker sections of society; opening up of new channels of obtaining higher education like correspondence courses, evening colleges etc. to additional aspirants.

19.4 The basic consideration in regard to university enrolment should be that while admission facilities are made available to all aspirants for higher education, it should not place an undue strain on the regular institutions and thereby be instrumental in further diluting the standards of education. It is, therefore, suggested that the following policy be adopted in respect of admission to institutions of higher education:

(a) At the undergraduate level, in view of the increasing rush of numbers, serious and sustained attempt should be made to diversify admission of students into different channels, namely, evening colleges and correspondence courses. An increasing number of students should be allowed to appear at the university examinations as private candidates. Broadly speaking, the new enrolments should be provided for on the basis of the following proportions: 50 per cent in regular institutions, 20 per cent in evening colleges, 20 per cent through correspondence courses and 10 per cent to be allowed to take examinations as private candidates. It may not be possible to observe these proportions in

all the States and right from the beginning of the Fifth Plan. The attempt should, however, be to reach these targets. During the years that follow the proportions must further change in favour of part-time and own time education.

(b) Own-time and part-time education should be accorded a parity of status and prestige with the regular colleges. The quality of the teaching staff in these institutions should, in no way, be inferior to that in regular colleges. As a matter of fact, their staff should be much more competent.

(c) Since part-time and own-time education requires a different kind of technology, some Central Organisation should be established with the express purpose of developing the technology and materials and imparting training to those engaged in this form of education. This should also act as the distribution agency for all these materials.

(d) In selecting institutions to run full-time and part-time courses, due regard should be paid to the regional and linguistic requirements of the country.

19.5 Admissions to colleges should be regulated keeping in view the academic and other physical facilities to be determined before admissions are actually made. While doing so, it must be ensured that full use is made of the facilities that have already been created. To some extent, this is already happening in regard to science courses.

19.6 Intensive efforts should be initiated in regard to compensatory education at various levels and in different parts of the country, for students coming from educationally backward classes and rural areas.

19.7 Admissions at the post-graduate level should be selective, broadly on the lines of the admissions to professional courses. The universities themselves should be primarily responsible for organising post-graduate teaching. However, University Acts should

not prohibit the opening and maintenance of such post-graduate courses in colleges where adequate facilities, including certain minimum research facilities, exist. Since post-graduate education should, where possible, be grouped and the universities should sponsor postgraduate centres to benefit and strengthen all such colleges, the universities should ensure that these clusters of colleges, constituting the university sponsored post-graduate centres, are provided adequate facilities by way of staff, equipment, laboratories, and funds for research. Since post-graduate education is crucial in many respects, it should attract more investment. In the university post-graduate centres of this kind, student hostels and staff quarters would need to be provided so that students do not have to travel long distances to reach the colleges and highly qualified staff may be attracted to work in such centres. Scholarships should also be provided to post-graduate students for the extra expenses they might have to incur in studying at such centres.

19.8 Institutional Expansion: Colleges The rising enrolments necessitate the establishment of new institutions at the collegiate level. There is, however, need for a rational policy for the institutional spread so that the setting up of uneconomic and inefficient units is avoided. It is difficult to lay down any rigid norms about the enrolment that a collegiate institution can take without impairing its efficiency. It will depend upon the physical facilities and the staff provided. The universities concerned alone can ensure that the sanctioned enrolments and the physical facilities are adequately matched. The following factors may be taken into consideration while establishing institutions of higher education:

1) Rational location of institutions so as not to interfere with the progress of existing institutions. This would involve conducting surveys of the educational needs of the area, of the availability of academic facilities etc.

2) Optimal institutional size (eventually) so that the academic organisation could be made more economical and efficient.

19.9 Establishment of Universities: The question of establishing new universities has to be considered with the utmost caution. The setting up of a new university on the existing pattern involves large investment - about Rs. 4-5 crores of capital expenditure and an eventual recurring expenditure of Rs. 100 lakhs per annum. Therefore, all aspects of the question - academic, physical and financial - should be considered before committing funds for the purpose. Unfortunately, the experience so far has not been encouraging. Universities have come into existence on grounds other than academic and without adequate financial and personnel resources.

19.10 Task Force on Higher Education has proposed the following guidelines for the setting up of new universities:

i) Establishment of new universities should be on the basis of felt academic needs of the area and should not be considered from the political or prestige point of view.

ii) The new universities should not lead to an undue dispersal of intellectual talent, funds and administrative ability.

iii) The requirements of increased facilities for post-graduate education should be met by establishing university centres in cities with a number of colleges and a large student population. These centres should have adequate library and laboratory facilities and a nucleus of university teachers.

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In course of time, some of these centres might develop into universities, if the situation so demands and they have the potentiality to develop their academic and other facilities to the desirable extent.

iv) There is need for setting up universities of a non-conventional type. In this connection, some experiments have been undertaken in foreign countries resulting in the establishment of the open university. In India, a beginning may be made with an open university, which should be open to every one.

v) It has also been suggested that the dual functions of the University i.e. organising post-graduate education and research and managing under-graduate education through the grant of affiliation to colleges, conducting examinations etc. should be separated. Facilities for post-graduate education should be expanded on the basis of assessed needs and university centres established. For under-graduate education, financially and managerially viable units (which may be called universities) may be set up. The latter would not involve heavy overhead costs and could be set up in larger numbers.

19.11 In the interest of maintaining adequate standards of higher education, the Steering Group strongly recommends that the establishment of universities and colleges should be strictly on the basis of well defined criteria which should spell out, in specific terms, the academic, financial and physical requirements which a new university or a college should fulfil before it is allowed to start. The University Grants Commission should evolve these criteria immediately and provide guidelines to the States in regard to the policy to be adopted in relation to the establishment of new institutions.

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19.12 A suggestion had been made for the establishment of universities of an affiliating type for taking care of the large number of students entering undergraduate classes without swamping the growth of post-graduate education and research. This was, however, not to deny the importance of the association of postgraduate education and research with undergraduate education. The Steering Group feels that this suggestion needs to be considered in detail and in that connection the views of the University Grants Commission should be sought.

19.13 Autonomous colleges: It is suggested that certain promising institutions should be recognised as autonomous colleges. This would mean granting larger autonomy to some of the selected institutions of higher education so that they are free from the rules and procedures of the universities and can experiment with new technologies in the methods of teaching and evaluation of students. As experience is gained, more and more institutions may be given the autonomous status.

19.14 Evaluation Procedures: The need for examination reforms has been underlined by a number of committees and commissions. As early as 1941 the University Education Commission said that if they were to suggest any single reform in university education, it should be that of examinations. The present system of examinations has become so corroding that any delay in its reform would be against

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the interest of higher education and would continue to provide fuel for student unrest and violence. The University Grants Commission has been assisting the universities in introducing reforms in the system of evaluation. This is being done on the basis of the recommendations, made by the UGC's Committee on Examination Reforms. A number of universities have introduced seasonal work and some of them take into account in the final examination. Considerable work in that direction lies ahead.

19.15 Curriculum development: The present university courses are, by and large, rigid and inflexible in regard to the choice of subjects. For example, the student wishing to take physics for his M.Sc. is often required to opt for it as early as class IX and he has to continue its study without a break. In the combination of subjects, there is considerable rigidity and compartmentalisation. Most of the universities do not allow a combination of courses of sciences and liberal arts. At this point of time when the walls between various disciplines are crumbling and where inter-disciplinary studies and research are the most rewarding, such a system militates against the development of higher education.

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19.16 There is, therefore, need for restructing the university courses so as to make them more flexible. Non-conventional courses should also be introduced so that the students can profit by higher education in line with their abilities and aptitudes. In this connection, the need for vocationalisation of the higher education curriculum can hardly be over-emphasised. The vocational courses, to be provided after very carefully identifying the demand for their products, should be organised with the maximum possible cooperation of the employers.

19.17 Research in Institutions of Higher Learning: The Steering Group notes that the National Committee on Science and Technology is formulating a National Plan covering, inter alia, the areas of importance in the field of basic and applied research. The Committee recognises that the universities and institutions of higher education have a significant role to play in the implementation of that Plan. It, therefore, recommends that adequate financial provision should be made available to these institutions especially for basic research work. The Steering Group is of the view that, keeping in view the likely allocation of Plan outlay for Education and the intrasectoral priorities in this sector, the financial outlays required for carrying out specific Research and Development projects, which are oriented to industrial sectors, should

be made available from the Plans of the user agencies and not charged to the Education Plan.

19.18 Keeping in view the immense potentialities of fundamental research for meeting the future needs of economic and social development, the institutions of higher learning should continue to devote their major attention to basic research in addition to utilising to the full their capacity for programmes of applied research. The present programmes of the Centres of Advanced Study should be reviewed and evaluated in this context and new directions for their development suggested for the Fifth Plan. The Steering Group recommends such a review to be made by the University Grants Commission.

19.20 In addition to strengthening the existing departments for scientific research, it is necessary to set up science service centres for locating extensive research facilities on a regional basis. These centres would serve a group of institutions as a common service facility. In addition, adequate number of centres may be organised for the development, maintenance and servicing of scientific instruments and equipment in the university departments and the service centres. Suitable training programmes need to be formulated and implemented for the training of technicians and mechanics required for this purpose.

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19.21 Linking education with employment: In addition to the programme of vocationalisation of post-matric education courses in relation to the manpower requirements in the economy, the Steering Group suggests the orientation of higher education towards productive employment including self-employment. Such an orientation would be towards developing in the students problem-solving and entrepreneurial capability rather than training them for specific jobs. In order to do this, it would be necessary to involve the students, even when they are in colleges, in the organisation and conduct of small production enterprises so as to develop in them an awareness of the complexities which characterise the world of work and, at the same time, help them acquire such competences and skills which are necessary to deal with them. Some colleges keen to introduce such production-based programmes; there are also some industrial units willing to cooperate with colleges in this regard. What is needed is to evolve a mechanism by which these two could be brought together and suitable linkage formed between them. The areas of cooperation and the institutional forms of providing such cooperation have to be identified and defined.

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The Steering Group recommends that the Planning Commission should set up, in cooperation with the University Grants Commission, a small group to work out the details of such a programme.

19.22 Student Unrest: Student unrest and violence have become an area of major concern in view of the threat they pose to the entire educational system and the leadership of the future generation. The phenomenon is complex and world-wide. Its causes in India area many: the generation gap heightened by the rapid changes in the socio-economic environment as a result of the advances of science and technology and the less and less time parents are able to give to their children; the destruction of old values and the failure of new socially cohesive values to emerge; the tensions which are natural to a society in a state of rapid change; the expectations and frustrations in a developing country where development brings to the surface age-long injustices and inequalities, many of which are heightened instead of being removed by development; the widespread unemployment among the educated; the attitude in new democracies to insist on rights rather than on duties; the individualistic, non-idealistic and competitive atmosphere of an acquisitive society; the entry into colleges of a large number of students who have neither the desire nor the capacity for higher education but go there in search of degree as passports to jobs; etc.

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19.23 The situation requires a three-dimensional approach: improvement of the general atmosphere in society through the inculcation of ideals of hard work, social justice, fair play and service; improved services to youth in the form of hostels, creative channels for youthful energy, better educational opportunities and better employment prospects; and finally, greater challenges to youth. The last is not the least important. For, the age of youth is idealistic and it must have avenues for its fulfilment. The standards of the curriculum must be raised. There should be projects for involving the students in problems of social and economic development.

19.24 Financing of Higher Education: The contribution from the government, particularly the Central Government, to university finances has increased substantially in recent years. Correspondingly the proportionate contribution from fees and endowments has been declining. In view of the increasing financial requirements of the institutions of higher education, the question of raising contributions from private sources, including fees, has to be considered carefully. The present fee structure involves a large subsidy which is given indiscriminately to all students regardless of their economic position. As against this, a general fee rise would be considered anti-egalitarian because it is feared that it would discourage the poorer sections of the society to avail of facilities of higher education. The question of student indiscipline as a result of fee rise is also to be considered.

19.25 It has been suggested that, at least at the post-graduate stage and in professional courses, fees should be raised. This, however, should be accompanied by a large scholarships programme adequate enough to meet the cost of education and maintenance of the poorer sections of the students. Suggestions have also been made about charging developmental fees for specific purposes.

Social Education

20.0 The priority of adult education should be stepped up considerably. Without providing the basic skills of educati which include attitude building, training in production techniques and basic knowledge of economics - to the primary producers it would be impossible to ensure effective functioning of democracy, optimising of production and securing social justice, which are the pillars of national planning.

20.1 While as a result of the work, so far done, a number of useful ideas have emerged, they need to be combined into an effective strategy to motivate the adult - whose lack of motivation has been the major bottleneck in the success of the programme - through effective linking of adult education with the activities he is interested in; to reduce the resources required for a country-wide programme to manageable limits by mobilising community resources; to develop and exploit fully the potentialities of adult education for economic and social development by linking it effectively with key national tasks like elementary

education, health and family planning education, agricultural extension, cooperation etc.; and to utilise modern mass media which can make an effective nation-wide programme at minimum cost possible. The educational institutions must also be brought into the programme of adult education, especially through the National Service Scheme. This will have the additional advantage of bridging the gulf between the masses and the prospective elite. The curricula in educational institutions would need to be restructured to make it centre round national and local problems which will have the additional advantage of enabling them effectively to educate the people in regard to their effective solution. The various Ministries and Department of the Government of India and the States should appropriate literacy as an effective tool of communication and build it as an integral part of their programme. The weaker sections - for whom the programme is largely intended - should be divided into broad occupational groups and literacy used as a means of their economic uplift. The basic vocabulary and the literature provided for reading etc., should pertain to their occupations. The programmes of adult education should be given the necessary support of the programmes of carefully selected research and production of literature. The considerable volume of literature brought out by the various organisations of the government for different sections of the population could form the basis of suitably graded readers. A network of libraries in the rural areas would also be essential. Behind all this, however, there

will have to be the national will to abolish illiteracy within a period of 10 to 20 years and a campaign mounted in which every literate man or woman is drawn in as a volunteer. The political and social leadership will have to be fully involved. Successful experiences of this sort exist today and can be drawn upon. The National Board of Adult Education and the State Boards of Adult Education, which should be set up in all the States, can provide the required organisational framework.

20.2 The Steering Group considers the inclusion of adult education as an integral part of the labour intensive development projects as of basic importance. It is fully in agreement with the Task Force on Adult Education that a programme of economic development cannot get a firm footing and be sustained unless all those who participate in such programmes have the skills necessary to enable them to contribute their best. At present, these skills are availabl only to the better-off elements among the participants. These skills are denied to the small workers, farmers and labourers. It is a wrong presumption that the small man participating in the economic development programme can do without the skill of education and literacy and that these skills are necessary only for those concerned wit management and policy making. Modern production, whether in agriculture or in industry, is becoming more and more technic In agriculture, for example, enormous inputs of knowledge and sophisticated crop-planning are necessary apart from the

credit, storage and marketing arrangements. These essential requirements necessitate education of the farmers so that the schemes of agricultural production, such as soil conservation, water usage, dairying, animal husbandry, multiple cropping etc. may be implemented successfully. While the need for occupational on-the-job training for primary producers may be conceded, some people doubt whether literacy is essential for the adoption and practise of improved techniques. Motivation to adopt new techniques may be provided even to illiterate masses by demonstration and mass media but the actual adoption of these techniques requires the aid of the written word. The modern media of communication no doubt are important but they cannot give information for the very specific need felt by the farmer at a particular time. Neither the film nor any other mass media can fill this gap which only the written word can do. The aid of the written word is felt most by the small farmers. The bigger farmers, even though illiterate, can manage to have contacts with the extension officers and other knowledgeable persons having field experience. They can also go to an agricultural university. The small farmers, if illiterate, cannot harness the help of these sources and, in the process, production gets retarded and the small man suffers. Therefore, literacy in the rural areas is essential both for social justice and for economic development. What has been said about agriculture, applies equally to those in industry, trade and commerce. That also applies to the intended beneficiaries

of programmes like nutrition and family planning, child care, cooperatives etc. This integration of adult education and the developmental programmes will not only ensure large scale funds for adult education but, what is even more important, also help in the effective implementation of these programmes and ensure that their benefits accrue more effectively to the beneficiaries. The Steering Group, therefore, strongly recommends that the Planning Commission may ensure that the various subject Ministries build up adult education as an integral part of their programmes. The education of their workers should also become the responsibility of both the public and the private sector, by law if necessary.

20.3 This approach would require that the programme of adult education should not be considered to belong solely to the Ministry and Departments of Education. The nature and the scope of the subject requires the combination and coordination of the effort of almost all the Ministries of the Central Government and similarly of the different Departments of the State Governments. The National Board of Adult Education - with a broadened base, so as to have all concerned Ministries represented on it, and its own secretariat, funds and professional consultants-could provide the apex coordinating body. Similar State Boards of Adult Education should be set up as well as Adult Education Councils at the local level, both in the rural and urban areas. The voluntary

organisations, duly screened, need full encouragement. They should be given a core grant to meet the salaries and other needs of the nucleus staff so that they can plan projects, keep accounts and watch progress of projects undertaken by them. The procedures need streamlining so as to enable quick decisions and implementation of policies, to enthuse rather than to discourage enthusiastic workers.

20.4 Beyond adult literacy and basic knowledge, the educational needs of the varied adult population outside educational institutions has to be met. Much of this work will have to be handled by the universities through extension lectures, correspondence courses etc. These courses will be either for occupational adjustment and improvement or for cultural satisfaction. The need for this informal education will increase still further as the tempo of change and development accelerates. Youth centres/clubs set up both in the urban and rural areas, could also become the focii for the effort at informal education. The Nehru Yuvak Kendras should come handy in this regard.

Development of Libraries:

21.0 The library development in the country has largely been patterned on the structure recommended by the Sinha Committee appointed by the Government of India in 1957. This Committee recommended that, besides the National Library at Calcutta, there should be Regional National Libraries, one in each region, a State Central Library in each State, a District Central Library in each District, a Block

Service Centres. This picture should be completed by the end of the Sixth Plan. The various libraries should be knit into a National Library System. The resources and services of all the constitutents of the system should be pooled in such a manner that every citizen is able to draw upon the total book resources of the country through a coordination of facilities and services, such as, cooperative book acquisition, inter-library lending, cooperative bibliographical and documentation services.

21.1 Before new units of service are established, an attempt should be made to achieve an optimum level of utilisation of the existing resources by removing the restrictions which inhibit the full use of library resources, such as cash deposits, closed access, restricted and irregular working hours and the practice of holding the librarian and his staff responsible for the loss of books occuring as a result of normal transactions. Additional resources should be placed at the disposal of the existing units to ensure their efficient functioning. The new units should be so established that no distinction is made between the urban and the rural areas and the library service should radiate from the urban units to the surrounding rural areas; particular care being taken to serve children, women, neo-literates, the handicapped and the slum dwellers. The cities with a population of one lakh and above should develop a library system of their own.

Language Development:

22.0 Language development holds the key to the preservation and propagation of culture as well as to educational development. The first level education is primarily a language-related activity. According to the 1971 Census there are 1652 mother-tongues, 203 of them spoken by groups of 10,000 and above. Both for purpose of adult literacy and primary education immediate action has to be taken to survey, analyse and prepare materials in mother-tongues for the needs of these groups. 50% of the school time is spent on language instruction. The success of higher education largely depends on the competence with which the students handle the language tool. Colleges and universities are switching over to the regional languages as the media of instruction. The languages, therefore, urgently need to be developed as vehicles of modern knowledge. The use of mass media is becoming essential in modern society. That use has to be very carefully planned in view of the extreme diversity of the linguistic scene in India. Language development thus is one of the crucial areas for educational development.

22.1 In a multi-lingual country like India the learning of more than one language is an absolute necessity. Fortunately, however, through modern methods of teaching the burden of learning languages can be considerably lightened. The learning of other people's languages is

also a passport to their treasures of culture and so is an enriching experience and a very rewarding educational activity, apart from its ultimate utilitarian value.

22.2 The relative roles of the various languages of India have been clarified in the Constitution, the Official Languages Act of 1963, the Official Languages (Amendment) Act, 1967, the Parliamentary Resolution of January, 1968 as well as in the National Policy on Education, 1968. Hindi has to be developed as the official language of the Union and of some of the States where it has the status of the regional language. It has also to be developed as a link language. While English has continued to provide the communication link between the elite of the country, no serious attempt has been made to develop a link language for the masses of the different regions. This is likely to create a big sociological problem for the country. Hindi appears to be the obvious choice. The various regional languages have to be developed as the languages of the local administrations and cultures. Languages like Urdu and Sindhi which may no longer have a regional status have be developed as the languages of the cultures of large sections of the population. Sanskrit has to be developed as a language of culture to enable us to re-establish and strengthen our links with our past and thus develop and strengthen our national identity and cohesion. English has to be developed as an associate language for official

purposes of the Union as well as a link language between the States and the Union till such time as it is completely replaced by Hindi. It is also the State language of Meghalya and Nagaland. Apart from that, it has to be developed as a library language for the purpose of keeping and strengthening our links with modern knowledge, especially in science and technology. Other important foreign languages have also to be similarly developed. In the context of the linguistic needs of India very high priority needs to be attached to the implementation of the three-language formula recommended by the Conference of Chief Ministers and underlined in the National Policy on Education, 1968. India, thus needs to mount a large effort in the next 10 years or so to develop her various languages and increase their interaction.

22.3 There are certain common problems in the development of all these three types of languages. Firstly, the teaching of these languages needs to be modernised which would require re-examination of their curricula, teaching methods, modes of examination, etc. Secondly, considerable research would be necessary to evolve cheaper and less sophisticated and yet effective methods for adopting the principles of modern techniques of language teaching to the Indian situation. Thirdly, the language Departments of the Universitie

will need to be considerably upgraded and their clientele increased through provision of scholarships and by opening up avenues of remunerative employment for their products, such as in jobs like those of interpreters, translators, etc. Fourthly, instructional material required for the new curricul will have to be prepared. Fifthly, the languages should be taught from the "functional" point of view rather than that of linguistic purity. Lastly, teachers will have to be trained in modern methods of teaching.

22.4 As regards the special problems of the development of Sanskrit, which has been the mother of almost all Indian languages, the Central Government is to play an increasing rol in its development. Facilities for its study at the school and college levels should be liberally increased. As the repository of traditional knowledge and wisdom, Sanskrit may be studied as an aid to courses like Indian Philosophy, Ancient Indian History and Culture, Indian Languages and Literatre, Philology and Linguistics, Epigraphy and Numismatic Astronomy, Ayurveda, etc. Effective steps may be taken for survey, procurement, preservation and critical editing of rare Sanskrit manuscripts and preservation on tape of the various systems of Sanskrit recitations prevalent in the country.

22.5 As regards Hindi, it must be developed as the official language of the Union; as a link language between the Union and State Governments; as the link language between one State Government and another; as a language of inter-State

communication in the various fields and activities of the people on an individual or corporate basis - for example, trade, commerce, industry, business, education etc.; as a language of mass communication, through the radio, television, films, newspapers, etc; as a medium of education at various levels; and as a medium of expression for all the elements of the composite culture of the country.

22.6 As regards the modern Indian languages, the Task Force has recommended that the Language and Literature Departments in the universities may be bifurcated in order to help the speedy development and propagation of the languages in the country. The curricula in the universities may also be revised considerably. Unconventional methods may be adopted for the introduction of regional languages as media of instruction at the university level. Instead of insisting upon the production of text books in regional languages in the first instance, we should ask university professors and lecturers to switch over to teaching through the medium of the regional languages straightaway. There would be no harm if the language in which they teach is a mixture of English and the regional language in the initial years. The terminology and the style of teaching through the media of the regional languages would automatically grow with the passage of time. After following this practice for a few years, it would be much easier for the professors and lecturers to write text books in the regional language.

22.7 As regards foreign languages, English has a special place in the linguistic scene of the country and as a vehicle of modern knowledge. It should be developed to the utmost possible extent as the library language as they do in Japan. Secondly, in the teaching of foreign languages the universities must develop indigenous expertise rather than depend only on experts from abroad. This dependence considerably upsets university arrangement when the foreign expert leves.

22.8 Where there are Central Institutes for language, they should have Regional Institutes to tackle the problem of these languages in the entire country.

Book Production:

23.0 The emergence of books as an essential aid to development has been a slow process. The priority of book production needs considerable upgrading. Recently, some people have begun to feel that, for the people at large, the media of mass communication can take the place of books. The weakness of the media of mass communication, however, is that while they can provide information they do not provide the facilities for reference. Books can be read, re-read, digested in a relaxed atmosphere and referred to again at the appropriate time and, as such, are an invaluable key to self-improvement and development of an independent judgement.

23.1 Books have been largely written for the university graduates; the expanding number of school leavers from low-income groups do not have enough relevant reading material. The programmes of adult literacy have been slow and still slower has been the provision of reading material which would cater to their interests and yet be approachable by them with their present standard of literacy. With this vast mass of

people, with diverse interests and occupations, coming into the category of readers the limited character of available reading material has become painfully clear. High priority, therefore, needs to be attached to producing books for neo-literates and school leavers, who generally belong to the low-income groups. There is need for a quick survey of the present position regarding the availability of such literature for these groups; and suitable steps will have to be taken to consult or collaborate with the States and the private sector to bring out such literature at popular prices and in all languages on a national scale. A separate organisation may be set up for the preparation and production of this literature in cooperation with the various regional linguistic boards and publication bodies. While it may be possible only to take preliminary steps in this regard, and make a beginning in the Fifth Plan, it should become a massive operation in the Sixth Plan. As the return from such low priced literature is likely to be poor, it may have to be largely organised by the Government. Interpretative and background books on technical subjects on the lines of the Thinker's Library or the Ben's Six Penny Series need to be brought out. These would place in the hands of the average reader authentic material written by top experts. The publishing scene in India has a plethora of institutions working towards a common purpose but without any obvious organised link binding them together. In order to formulate an effective national policy of book development and implementation, the National Book Development Board

should be strengthened suitably with the necessary executive and financial powers for implementing its own schemes which did not require reference to other Ministries.

23.2 High priority should be given to original works in Indian languages. Translations from English have so far led to a blind following of the English syntax and idiom so that the translations are more unintelligible than the originals. Translations of foreign books also leads to re-production of a lot of material which is irrelevant in the Indian context and leaves out much that is relevant for Indian students. The scheme of university level books could be improved by a number of steps. As far as possible, the original copy should be produced in an Indian language. It can be more easily and quickly translated into other Indian languages than a book in English, especially when it is written by a foreign author. During the period of transition, books should be written by teams of people who know the language well and under the guidance of a subject matter specialist. As regards technical terms, an admixture of English words and terms written in Indian scripts should be encouraged as in Japan, for example. At present, the various bodies in the non-Hindi speaking States are working in isolation. For the purpose of coordination and toning up of the work of these bodies, the University Grants Commission may set up under its aegies a separate department for coordination, supervision and evaluation of the work of the State Boards, -/-

academies etc. This department should act as a clearing-house of information and be able to induct new ideas gained from the experience of individual academies or boards working in different parts of the country. If there is any legal difficulty in the way of U.G.C.giving assistance to non-university bodies, this can be overcome by treating this department technically as part of the Ministry but administered by the U.G.C. The Chairman of the U.G.C. should be its Chairman. Subject-wise committee should also be set up under this coordinating body. The proposed awards, for outstanding university level books in Indian languages, organised by the UGC is also a step in the right direction.

23.3 As regards school text-books, most of the States have nationalised them. The size of the operation is fast expanding with the rapid increase in enrolments. The efficiency of this operation has to be increased with the induction of trained personnel. Further, the profits of the various agencies entrust with the task of bringing out nationalised text-books, should be earmarked for further research and development in the field of book production instead of being ploughed back into the general revenue as at present.

23.4 With the vast expansion that the book production programme calls for, the need for large-scale training of personnel has become urgent. It is recommended that National and Regional Training Institutes should be set up for training personnel in editing, translation, illustration, production and sales. Apart from training, these institutes should also

carry out research and survey in the various fields of publishing. They should provide in-service training for personnel already engaged in publishing work. Such training will have t additional advantage of opening up new avenues of employment for the graduates with general education qualifications. These professions are not only to be recognised and people trained for them but if we are to get candidates of adequate standard, it will need considerable up-grading of their remuneration.

23.5 The expansion of the book production programmes should be accompanied by an equal emphasis on the promotion of meaningful sales and distribution of material being produced. Library grants may be given, to the extent possible, in the form o standard books, many of them produced by Government, which today are gathering dust in Government Departments. Bookmarts need to be set up all over the country, including the villages. These may be independent shops or may be part of petrol pumps, post offices etc. The organisational side of sales and distribution of books needs attention not only in the public sector but also in the private sector. The private sector, most of whose 10,000 publishing and sales agencies in the country are small units, needs the assistance of trained personnel which they have neither the resources nor the capaci to train. This task will have to be undertaken by the States.

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23.6 The hardware side of the printing industry needs to be strengthened. While we have a number of printing presses, only a few of them are equipped to undertake book printing. Printing of school text-books on a massive scale requires high speed off-set machinery which is not manufactured indigenously. Mechanical composition through Mino or Lino machines is still a luxury. Paper is in short supply. The Working Group on Paper Requirements has estimated that the demand for paper required for books and exercise books and other writing and printing paper will go up from 1.90 lakh tonnes in 1973-74 to 3.06 lakh tonnes in 1978-79. A Standing Committee representing the concerned ministries should be set up to examine bottlenecks and work out proposals.

23.7 The working of the National Book Trust should be streamlined so that it may concentrate its energy on production, promotion and distribution of books and the training of personnel involved in publishing; the implementation of the research programmes should be the responsibility of the proposed Training Institutes. While the activities of the NBT cannot be organised on purely commercial lines, its production programmes should be made economically viable, with self-sufficiency being aimed at by balancing receipts against expenditure.

23.8 A National Guild of Authors should be set up. A separat Guild for each Indian language should also be set up in the concerned State. These Guilds are expected to function as voluntary organisations for safeguarding the interests of writers, authors and translators and lay down guidelines of

conduct and the performance standards and other professional norms. In course of time a joint body of publishers, authors and book sellers (PAB) could be organised.

23.9 A plan should be formulated to boost up export of Indian books of technical and cultural interests. There is a considerable market in developing countries for Indian books especially of science and engineering and India can become a major exporter of technical books provided the Government offers the necessary recognition to writers and necessary incentives to exporters. For the purpose, an Export Promotion Council may be set up exclusively for books. The State Trading Corporation can undertake studies in respect of exports of Indian books to specific areas. They should also explore the possibility of utilising, in a meaningful way, the spare quota of the import licenses for educational purposes. Lack of full utilisation exists side by side with persistent non-availability of certain categories of books badly needed by libraries and educational institutions. A proper import policy of books should ensure that the educational needs of the country get top priority and that ephemeral and banned items are strictly eschewed by suitable regulations wherever necessary.

23.10 Lastly, it is rather surprising that in the field of book development and production, involving an annual investment and turn-over of nearly Rs.100 crores in the public and private sectors and touching intimately the lives of millions of children and the intelligentsia speaking a variety of languages, there have been very few surveys or studies providing basic

data or information for the use and guidance of publishers, educational administrators and policy makers at the State and Central levels. A number of short-term surveys and studies should be instituted immediately to enable the drawing up of realistic proposals for action in the various areas of book development.

Technical Education:

24.0 The perspective of development for the next 15 years seeks to optimise the vast potential created in the technical education system for meeting the diverse needs of a progressive technological society. For this purpose, the objectives and goals of the system should be defined comprehensively to include, in addition to the traditional functions of teaching and research, new tasks dealing with continuing education, extension services of a technical character and participation in regional development. This will provide for greater flexibility within the system and also enrich the process of learning and teaching through the participation of students and teachers in the application of engineering to the problems of the community.

24.1 The technical education system comprises, in the main, the technical institutions with their teams of highly qualified engineers and scientists on the faculty and modern facilities for experimentation, development, design and testing in the field of science and technology. The immense potentialities of this system to evolve solutions to the practical problems of growth in the society should be tapped effectively. At the

same time, the sweeping technological changes in the productive systems of industry and services demand a continuous adaptation of the educational programmes to meet the changing needs. In order that the credibility gap is bridged and workable communication linkages established between these two systems, technical institutions should promote consultancy work by faculty members and thereby initiate a process of systematic referall to them of engineering problems from industry. They should participate in the planning of integrated development programmes and demonstrate their leadership role in the community. They could help the growth of entrepreneurship among the graduates and render technical guidance and supporting facilities for the establishment of small scale industrial enterprises. They should also reveal flexibility in their educational programmes to incorporate the specific needs of these activities.

24.2 These are some of the directions in which technical education should develop linkages with the economic sectors; once the benefits, which could accrue to society from the investments made in technical education, are demonstrated in such tangible terms rather than in the number of engineers or research scientists produced,

the system would have established its economic value and social relevance and thus constituted a valuable institutional resource for future national progress. The Fifth Plan should be the starting point towards such a perspective of development; this would imply several points of departure from the conventional approach; these are briefly described below.

24.3 Reorientation of Courses : The first point of departure would be that the teaching function of our technical institutions and their educational processes should be reoriented towards identifiable engineering functions in the employment sector. This demands reformulation of a specific goal structure for postgraduate, undergraduate and diploma courses, on the one hand, and the restructuring of the institutional framework, on the other. An integrated plan to reach the stated objectives must provide for a variety of operational measures viz. an analysis of the wide range of functions of engineering manpower for the different sectors of our economy, like management, research design-development, production, supervision, testing, inspection, maintenance and repairs, assembling etc; reformulation of groups of educational

programmes, each designed specifically for distinct functions in the employment sector; curriculum development for each educational programme; and identification of institutions and their further development for each group of programmes vis-a-vis manpower requirements. For example, postgraduate courses should be restructured for research, design-development functions and institutions to conduct such courses must be selected carefully and developed. The degree courses must be oriented towards the application of engineering to manufacture, planning and management functions. The diploma courses should be redesigned for supervisory and shop level planning and coordination work.

24.4 In regard to degree courses, it is necessary to make a critical review of the existing patterns and objectives so as to give the educational process an orientation towards the activity needs in the professional field. The aim should be not so much to give all available knowledge in the chosen branch of engineering, which in any case would become obsolete during the professional career of the engineers, but to ensure

such knowledge, skills and competences as would enable the graduates to perform their first level jobs well and effectively and at the same time to develop capability to face the newer problems and challenges of the profession in the future.

24.5 The present curricula are entirely technology-oriented and theoretically structured so much so that a graduate, while being thorough in the engineering sciences underlying a production process, is unable to appreciate, and be familiar with, the actual elements and sequences of that process in an industrial organisation. The scheme of laboratory experiments and workshop practice does not serve the purpose of imparting production training to the students nor are these departments planned with a view to simulate the conditions in the world of work.

24.6 The degree courses should develop innovative and entrepreneurial attitudes and skills and include elements of management techniques, material science, and supervision and human relations. These would help the future growth of engineers to managerial positions as may be needed; at the same time, they would facilitate the extension of the system building services in

industry and thereby increase industrial productivity.

24.7 The All-India Council for Technical Education is setting up a committee of experts, jointly with the University Grants Commission to make a study of the first degree courses in engineering and technology. Suitable programmes could be formulated in the light of the recommendations which might be made by this committee.

24.8 As for diploma level courses, a special committee has made several far-reaching recommendations; a plan of action has also been formulated to implement these recommendations. Similarly, programmes of post-graduate courses of study and research are at present being looked into by a Committee of the All India Council for Technical Education.

24.9 Technical Extension Services: The second point of departure is to extend the role of technical institutions to the total process of technological development. Technical institutions should not represent merely an educational complex but must contribute effectively in certain well-defined areas, like research into practical engineering problems, design and development of technological processes and

equipment; preparation of feasibility studies and project reports; technical service to engineering enterprises for the improvement and upgrading of technology; quality control of products and processes; formulation of detailed projects for the development of the social infra-structure in rural areas as for town planning, communications, water supply, drainage and sewage disposal and processing locally produced or available materials, rural electrification, etc. This new approach demands a change in the attitude and values of our technical institutions.

24.10 All technical institutions should undertake some of these activities as an integral part of their educational programmes. The need to promote this type of extension service is underscored by two important factors. First, we must establish a social relevance for our engineering education system. Second, the new strategy visualised in the Fifth Five Year Plan, of providing the minimum standards of living to the majority of our people and technological self-reliance, cannot be fulfilled without an effective participation of technical institutions.

24.11 The organisation of these activities is one of the most important aspects of planning of the system itself. Fortunately, a National Plan of Science and Technology is being formulated by the National Committee on Science and Technology outlining, inter-alia areas of importance for indigenous development of scientific and technological capabilities. These relate to diverse activities of the innovation chain such as research, development, plant engineering and design, process and product development, standardisation and quality control. These are applicable to the different economic sectors of agriculture, manufacturing, construction, communication, irrigation and power, transport and social services. The first task is, therefore, to identify such of the emerging important areas of science and technology in which technical education system could make significant contributions in the light of facilities and expertise available and/or that could be created. This should be done at the national level in a plan, for technical institutions, delineated in consultation with the National Committee. It should then be possible to work out specific programmes with defined objectives which could be

assigned to individual technical institutions to be undertaken either by themselves or in collaboration with the National Laboratories and other establishments as may be necessary.

24.12 At the State level, suitable programmes should be planned in consultation with the State Committees on Science and Technology and the State Planning agencies; these would also take into account the regional priorities and development needs.

24.13 The Planning Commission are stressing, in the Fifth Plan, the need to organise multi-level planning efforts, including the preparation of integrated area development plans at the district level. The technical institutions might be associated with the formulation of area development plans so as to utilise such of their professional competence which could usefully be brought to bear upon the formulation of these plans and help to identify nature of contribution which they could make in the implementation of these plans.

24.14 In order that the technical institutions are able to plan and undertake these activities, suitable organisational arrangements should be made within the

academic structure of these institutions. This could be in the form of a Technology Cell or an Industrial Extension Cell, under the charge of the Principal or a senior professor, which would liaise with the external agencies, coordinate the programmes and channalise them to the individual departments and facult members. Apart from optimising the institutional contribution to the growth of science and technology for meeting the community problems, this cell would help bring newer insights of the societal requirements into the educational process itself.

24.15 Continuing Education: Of all the fields of higher education it is only in technical education that we have adopted a manpower approach to the expansion of educational facilities under successive Five Year Plans. The reports of the Scientific Manpower Committee (1949), Engineering Personnel Committee (1956), Working Group on Technical Education and Vocational Training (1960) and the Technical Manpower Assessment Committee (1966), are all cases in point. In technical education, each plan has been a preparation for the next. Unfortunately, however, our manpower approach has been so far too global and has not provided us

with new insights into all aspects of occupation - education linkages. In this global approach, we have tended to equate all engineering activity with highly-structured degree and diploma courses. These courses, however, can at best represent what an individual engineer or technician needs to possess in terms of knowledge and skills for initial entry into the profession. We have left out of consideration the whole range of skills, knowledge, competences and professional development which an engineer or a technician needs as he moves up in his professional career or moves across from one cluster of jobs to another cluster.

24.16 If technical education has to reach out to the serving engineer or technician for his further improvement and development while he is in the profession, the system must be designedly oriented towards this need. Further education of engineers and technicians to equip them for higher levels of research and development, for production and management, for manufacture and construction activities, must be an integral part of the whole process of technical education development vis-a-vis national needs.

24.17 Manpower planning, and its corollary of planning educational facilities, must rest upon a correct

identification of education-occupation linkages. This demands an analysis of engineering positions in the different sectors of our economy to provide information regarding the skills, knowledge and competences needed for clusters of engineering occupation. Such an analysis should also be a continuing process so that our educational system may respond to technological changes and also to the changes in the structure and form of engineering enterprises. Another lacuna in our educational planning is the absence of multiple points of entry to the system to enable the large number of professionals already in the field to re-equip themselves professionally. The existing system provides only for a single entry point either at the first degree or at the diploma level. To accelerate the process of technological development, our concern should also be for the large number of professionals who need further education and development. This demands flexibility in the technical education system to provide for multiple points of entry for all those who wish to upgrade and diversify their skills, knowledge and competences.

24.18 The first pre-requisite to undertake this work is a first-rate manpower information, assessment, evaluation and monitoring system at the several echelons of responsibility for planning, administering and managing technical education programmes and projects. The need is to evolve a well-developed machinery which would (i) study and analyse technical manpower demand and utilisation in the economic sectors in terms of functions, job contents, quality, specialisations and managerial and relational skills; (ii)assess and examine emerging trends of changes in the various sectors which have a bearing on job contents and profiles of education and training; and (iii) process and feed necessary information to authorities in charge of plan formulation and those responsible for decision making and implementing development programmes.

24.19 Our attempt should be to assess the organic relationship between engineering jobs in an employment hierarchy and to identify the incremental inputs of skills, knowledge and competences needed at different stages of the professional growth of engineers, technicians and skilled workers. Based on such an

identification of requirements, suitable arrangements should be made to impart these skills institutionally and/or in industry depending upon the nature of skills to be developed. To the extent these programmes are to be dovetailed into the technical education system, we should work out points of entry into it taking into account on the one hand, the present skill level of the personnel to be educated and the level to be achieved and, on the other, the course structure of the institutional programmes. The multiple points of entry and the facilities of continuing education should be coordinated to serve the main objective of specific enhancement of the competence of the engineers, technicians and others at appropriate stages in their careers to help them perform their jobs effectively and well.

24.20 Engineering manpower development is not merely on educational activity restricted to technical institutions. As a total concept, manpower development involves many other agencies which have established their own training programmes as, for instance, the railways, defence establishments and industrial units,

both in the private and public sectors. An integrated approach to manpower development must aim at coordination, at least conceptually, of the activities of all these agencies. More important, the resources of these agencies which are now restricted to in-house training programmes should be mobilised to supplement the role of technical institutions. We must also bring about interaction between technical institutions and the in-house programme in industrial establishments.

24.21 Centre - State Joint Responsibility: Finally, the All India Council for Technical Education has emphasised repeatedly that consolidation of technical education and improvement of its quality and standards is of extreme national urgency and the responsibility for it should be shared by the Central Government and State Governments within the framework of an overall national plan. The principle of shared responsibility should be reflected at the different stages of formulation, implementation and evaluation of the technical education plan as a whole as well as in the funding arrangement of the specific programmes.

24.22 A Policy Framework: This perspective of development implies a new framework of policies governing

the planning for and implementation of [illegible] projects and programmes. Some of these are elaborated in the following paragraphs.

24.23 Admission Policy: Technical education is primarily concerned with the development of technical manpower resources required for implementing development plans and projects. In the context of the Fifth Plan, this would mean coordination of technical education facilities with the likely manpower needs of the Sixth and subsequent Plans. A preliminary estimate of these needs indicates that the capacities created in existing technical institutions would, by and large, be able to meet the future requirements both of graduate and diploma holders in engineering and technology.

24.24 According to the information available now, the Fifth Plan would essentially be one of consolidation of the technical education system and no new institutions would need to be set up for the conventional branches of civil, mechanical and electrical engineering. The annual adminissions should be restored to the sanctioned capacity both for the degree and diplima courses, keeping in view the progress of consolidation of facilities in individual institutions. Future admissions

over and above the sanctioned levels, as well as the need, if any, for setting up new institutions should be considered in the light of more precise estimates of the Sixth Plan requirements which are being worked out by the Steering Group on Manpower and Employment. Technical institutions especially polytechnics would also be called upon to play a significant role in the programme of vocationalisation of higher secondary education courses. The precise dimension and nature of that role are, however, yet to be assessed.

24.25 Continuing Education and Multiple Entry Points.

As already stated, technical institutions are at present mostly pre-occupied with the education of the future generation of engineering manpower and do not provide courses for continuing education in engineering and technology. The latter courses could be for updating the level of knowledge in the light of technological advances or for improving and diversifying technical competences of those who left the educational system to enter the junior levels of employment and who need to be helped to achieve professional and occupational mobility as part of their career development.

24.26 While some of these courses might be in the nature of programmes leading to academic awards of a diploma or a degree, others could be short-term technology-oriented courses. The faculty and the facilities available in technical institutions would need to be utilised more extensively to offer such continuing education, wherever a demand for these programmes has been established.

24.27 As a general policy, we should ensure acceptance of this responsibility by the technical education system, provision of necessary financial and administrative support to technical institutions and sufficient flexibility in the course structure to incorporate the diverse requirements of continuing education.

24.28 Academic Control and Flexibility :

The Special Committee on the Reorganisation and Development of Polytechnic Education has drawn attention to the inadequacies of the present system of affiliating a number of technical institutions to what is primarily an examining agency like the State Board of Technical Education. This has resulted in the

overwhelming influence of the examination system on the structure, content and teaching of diploma courses, leading to a rigid system on the one hand, and on the other, to the lack of initiative on the part of individual institutions to develop and conduct courses depending upon the local genius and the technological and manpower requirements of the neighbourhood.

24.29 Similar trends are in evidence with reference to degree courses offered in engineering colleges which are affiliated to universities. The Faculty of Engineering Studies being one of the many academic formations of a university and in view of its being numerically small in terms of students, there is insufficient appreciation at the university level of the special academic needs of technical education programmes. The universities, being responsible for a common pattern of assessment, evaluation and examination, applicable to all students in the several disciplines, are not always in a position to promote or support innovation and change in the field of technical education even when it is considered desirable and feasible.

24.30 Furthermore, the affiliating nature of the universities and the requirements of the examination system even with reference to technical education have a tendency to aim at a uniformity of performance at an average level among the different engineering colleges, which restrains some institutions from growing to their full potential or from developing new programmes according to their capacity and needs.

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24.31 The present system of academic control by universities with reference to the Regional Engineering Colleges is one of the issues being examined by a Committee set up by the Ministry of Education. The more general question of the changing relationship between technical institutions and the universities in the context of a new perspective of development of the technical education system for the future was considered by the Task Force on Vocational and Technical Education. It was of the view that any future policy for academic control and awards in technical education should ensure that each technical institute ultimately develops into an autonomous institutior and evolves its own educational programmes, assessment and evaluation system and teaching methods. There should be statutory bodies composed of educationists and representatives of industry and professional institutions for giving academic awards, such as a degree or a diploma in engineering and technology. In the case of polytechnics, the Special Committee has recommended statutory State Boards of Technical Education and this proposal has been endorsed by the All India Council for Technical Education. For the degree courses suitable provision would have to be made, either within the existing university system by setting up autonomous colleges or otherwise by establishing a separate Technological University in each State, which would award degrees on behalf of the individual autonomous engineering colleges. Further, technical institutions should be able to organise short-term programmes without necessarily relating them to requirements of an academic award, especially when such courses are intended specifically to meet the felt needs of industry.

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24.32 Financing of Development Schemes: The inadequacies of the present system of financing technical education schemes in the State Plans have recently been reviewed by the All India Council for Technical Education. It has recommended that, keeping in view the urgent need to consolidate the existing institutions and improve their quality and standards as well as the shared responsibility for technical education between the Central and State Governments, a new arrangement of financing technical education schemes should be formulated. According to this arrangement, the Central Government would be involved more intensively with financing of technical education development and meet 50 per cent of expenditure on consolidation and development activities in existing institutions and 100 per cent for qualitative improvement programmes. In both cases, Central assistance would be over and above the State Plan ceilings. The Task Force on Vocational and Technical Education has underlined this to be an important pre-requisite for development of a dynamic technical education system in the Fifth Plan.

24.33 In addition to the above pattern of Central assistance for financing of schemes, it would be necessary also to extend the items of expenditure in technical institutions so as to include the additional involvement of technical institutions in continuing education, technical extension services and participation in the development of their neighbourhood.

24.34 In order that innovations and experimentation in the field of technical education are encouraged, special incentives should be offered to individual institutions which are in a

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position to formulate and implement new programmes in consultation with employing establishments. In all such cases the Central Government should underwrite the entire financial costs of these institutions.

24.35 The income to technical institutions from students' fees should be increased so as to relate it more rationally to the cost of educational services rendered by them. Since technical education specifically enhances the employability of students in relatively more remunerative sectors and activities, the students, as beneficiaries of the system, would have to share its financing more directly and to an increasing extent. This should be accompanied by a larger provision of scholarships so that meritorious but indigent students are not denied opportunities for technical education.

24.36 Similarly, industry for whom the technical education system prepares its manpower resources should have a greater share in the financing of not only the practical training in industry but also the institutional programmes.

24.37 Manpower Planning and Admissions: There is at present no effective system by which admissions to technical institutions are regulated at the State level in relation to future manpower requirements. The new impetus for development of the technical education system proposed in the Fifth Plan would not yield adequate results if it is not supported by a suitable policy of decentralised planning, administration and management. The State Governments and their Directorates of Technical Education should assume greater

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responsibility in formulating technical education plans and in monitoring their progress from time to time. This would imply that there should be an adequate organisational support available to these Directorates continuously to assess the emerging manpower requirements at the State level and to provide the necessary guidance to technical institutions for regulating student admissions both in numbers and by specialities.

24.38 Similarly, at the Central Government level there should be a manpower information, monitoring and evaluation system in the Ministry of Education to assist the planning and management of technical educational programmes.

Educational Planning and Administration

25.0 Organisation Arrangements for Educational Planning:

An urgent need is to build appropriate organisational arrangements at various levels of administration for planning and implementation of educational programmes. There is also need to coordinate the activities of various official and non-official agencies active in the field of education. At the national level, it may be desirable to set up a Human Resources Development Board, under the Prime Minister, for laying down the overall policies for the guidance of various education and training authorities. At the State level, a high level advisory board may be set up for formulating an overall educational and training policy for the State and for coordinating the work of different official and non-official agencies, with its membership drawn from various government departments, universities and colleges, private managements, industrialists and other

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employers and other interests active in the field of education.

25.1 A professionally competent organisation should be created in the Education Department for educational planning. Since it may be difficult to bring all the educational and training activity in the State within the purview of a single administrative agency, at least in the immediate future, Planning Cells should be established in each of the three State Departments of School Education, Collegiate Education and Technical Education, as well as, in other departments which control education and training institutions (such as Health, Agriculture, Labour and Employment). The coordination of the work of the Planning Cells of the Education Department would be done at the level of the State Education Secretary. Each Planning Cell must function directly under the Director of the Department, be headed by a sufficiently senior and qualified officer of the Department and its staff consist of a number of qualified planning technicians of different grades.

25.2 There is an urgent need to set up an adequate machinery for planning and development of higher education in the States. At the State level, a University Planning Board may be created, with the Chancellor of the State universities as its Chairman and the member incharge of education in the State planning organisation as its Deputy Chairman. The membership of this Board would include all the Vice-Chancellors of the universities in the State, Secretaries of the Departments of Education, Health, Agriculture, Planning and Finance, and representatives of the Planning Commission, the U.G.C., the affiliated colleges and the university teachers' association.

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This body will lay down the overall policy for the development of higher education in the State, coordinate the activities of various official and non-official agencies maintaining institutions of higher learning, prevent overlapping of activities by universities and colleges and perform any other functions that may be entrusted to it. This arrangement will ensure a closer liaison between the plans of the State and those of the universities within the State.

25.3 There is need for decentralising the planning process. The district occupies a very significant place in educational planning and administration. The recommendation of the Education Commission, that the State should delegate most of its powers to the District Education Offices, needs to be given effect to. In the districts there is need to establish:

(a) A District Education Committee, with District Education Officer as its Chairman, and its members drawn from different official and non-official interests active in the field of education; this Committee wil coordinate educational plans for the district within the framework laid down by the State Government and mobilise local support for educational development; and

(b) a planning and information cell in the District Education office for determining the need for, and location of schools, indentifying teacher and equipment requirements, reviewing plan schemes; compilation of statistics, etc.

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25.4 While the idea of associating local people with the formulation and administration of educational plans is sound, it is necessary to build adequate safeguards, at least for the time being, in order to ensure that the teachers and the departmental personnel are allowed to function without undue interference. In the interest of allowing educational institutions complete freedom to plan and function, the administrative and technical control of education should vest completely with the Education Department. The representatives of the local self-government institutions should be associated with the local school for ensuring its maintenance, for mobilizing local support for various programmes - midday meals, school improvement, etc. - and for ensuring the regular attendance of teachers and students. The impact of democratic decentralisation on education needs to be evaluated on an all-India basis.

25.5 Inspection and Supervision: The academic supervision of schools is the most important function of the Department of Education. The outlook and approach to inspection and supervision of schools should undergo a major change. The emphasis should shift to consultancy and guidance. This is possible only if the departmental staff responsible for the "supervision" of schools - academic or otherwise - is adequately qualified. The general inspection of schools should be separated from its academic "supervision". In both, professionalisation should be built into the system. As for academic aspect, an adequate number of subject specialists should be appointed at the State, district and block levels, for providing consultancy services to schools. These specialists should remain in close and constant

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touch with teachers, helping them in overcoming difficulties that they experience in teaching students, providing to them information and materials on latest developments in the contents and methods of teaching various subjects, arranging for conferences of subject teachers etc.

25.6 The improvement of classroom instruction is, in the ultimate analysis, the responsibility of the teachers. Therefore, effort must be made to upgrade their teaching competence. This can partly be done by establishing suitable arrangements for inservice training and by the institution of sufficient incentives encouraging teachers to seek avenues for self-development. There is also need to make teachers themselves responsible for the improvement of their own education and teaching skills. They should be encouraged and helped to establish associations with the sole purpose of ensuring their professional development; subject-teacher associations provide a means for ensuring this. These associations can, among other things, organise subject-teachers' seminars, produce and supply educational literature useful for classroom problems, etc. The subject specialists who will be appointed, should maintain close liaison with these associations and make it a point to bring about improvements in classroom teaching through and with their help. In view of the dearth of experience of the role of these associations in India, the Education Department should provide, at least in the initial stages, technical and financial support to subject-teacher associations.

25.7 There is need to strengthen the administrative machinery particularly at the district level. The dearth of resources will

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always prevent the appointment of all the required personnel of different grades. There is, therefore, need to ensure that the educational resources already available are utilised to the maximum advantage. The linking of schools, to each other, to training schools and colleges through extension services departments, and through the latter to State Institutes and the N.C.E.R.T., can provide a mechanism by which institutions can receive constant help and guidance in improving their programme. Thus, a group of elementary schools can be "adopted" for improvement by the neighbouring secondary school, on the one hand, and the training school, on the other. Similarly, secondary schools will receive support from nearby college and the extension services department of the training college. The training institutions should, in their turn, receive guidance from the State Institutes and the NCERT. In order to ensure that programmes suggested are actually implemented by institutions, the departmental personnel should be closely associated with these institutional complexes.

Salaries and Service Conditions of Teachers

26.0 The teacher occupies the central place in the teaching-learning process. Steps are, therefore, needed to attract to, and retain in, the teaching profession persons who possess the requisite attitudes, knowledge and skills. The improvement of teachers' emoluments and service conditions require to be emphasized from this point of view. Over the years, the salary scales of teachers have shown considerable improvement, although the rise in prices has often off-set the gains accruing to them. Among others, the guiding

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principles for determining the emoluments and service conditions of teachers should be:

(a) they are comparable to those of other Government servants with comparable educational and professional qualifications and responsibilities;

(b) they are uniformly applicable in respect of the educational institutions maintained by the Government, the local bodies and the private managements;

(c) the disproportion, that currently exists betwen the salaries of teachers teaching at different levels of education, is progressively reduced so that the proportions recommended by the Education Commission - viz. the salary of elementary school, secondary school and college teachers to be in the proportion of 1:2:3 - are gradually reached;

(d) teachers working in unrecognised and unaided institutions receive salaries and enjoy service conditions which are commensurate with their educational and professional qualifications and duties;

(e) although this may not be feasible in the immediate future, the salaries of teachers should be linked to their educational and professional qualifications rather than to the stage they teach.

26.1 Adequate incentives must be provided to teachers for encouraging them to undertake professional development. Among others, these may include selection grades for 10-15 per cent of the teachers, additional increments for improving general and professional qualifications and promotion to supervisory grades.

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26.2 The provisions required for the improvement of teachers' emoluments have till now been kept outside the plan; this practice should continue in the Fifth Five Year Plan so that the teachers receive their pay raises along with other employees of the Government and local bodies. Most of the States and Union Territories now provide the retirement and other benefits to non-government teachers, such as contributory provident fund, pension and gratuity. A good deal more requires to be done for their welfare, such as the provision of housing and medical facilities and other amenities.

Education and Employment

27.0 Magnitude: The expansion of educational facilities, undertaken with a limited attention to the absorption capacity of the economy for the educated labour force, has aggravated the problem of educated unemployement. Although, for various reasons, the data do not indicate the correct magnitude of unemployment among the educated, the live register of the employment exchanges shows that about 2.3 million educated persons (matriculates and above) were seeking placement assistance in 1971 - more than twice the number in 1967 (1 million). While matriculates and intermediates constituted about 84 per cent of the registrants in 1971, there have in recent years been sharper increases in the registration of graduates and post-graduates, particularly the professional degree holders.

27.1 Need for Economic and other Policies: Unemployment among the educated has to be viewed as a part of the overall problem of unemployement and under-employment of the labour force. Education as such does not create employment, except to the extent of absorbing part of its output as teaching and non-teaching

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personnel in educational institutions, and to the extent that it increases the resourcefulness and technical capacity of the educated to open out new avenues of employment for themselves. Solutions to the problem of educated unemployment have to be sought primarily in the overall economic and social policies.

27.2 A massive effort would have to be made for creating employment opportunities for the educated in rural areas. The possibility of creating additional employment for qualified persons in various development programmes, like family planning, cooperatives, agricultural extension, public health, etc., should be explored. There is also the need for forecasting the requirements of skilled workers for such work as maintenance of tubewells and tractors, rural electrification, storage and distribution of fertilisers, marketing of foodgrains etc. and for training students in the required skills. It is only by increasing employment opportunities in the rural areas that it would be possible to check the migration of the educated from these areas to towns and cities.

27.3 Recruitment Policies: The existing motivation to continue education beyond the compulsory level, and particularly after the secondary level, needs to be changed. For this purpose, it is important to modify existing recruitment policies and practices. College degrees should not be used by employers as a filtering device to select their employees from among the applicants, where the jobs require lower minimum qualifications. The educational level prescribed should, as far as possible, be on the basis of the specific requirements of the job. Recruitment may be by tests

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which do not give an advantage to those with higher qualifications. Since the public sector employs a large proportion of the educated work force, its policies and practices would have considerable impact on the motivation of the students as well as on the policies and practices of the private sector employers. A view has been expressed that all recruitment to public services should be at the end of the higher secondary stage and other requirements of the job may be met by further education and training at the cost of and under the direction of the employing agency. There is much to commend this approach as it would prevent many to pursue higher education in the fond hope of finding a government job at the end thereof and also make post-secondary education more useful in building up the cadres required. The only difficulty is of foreseeing all the varied demand of government departments many years in advance and of organising a very large and complicated operation of training and placement, especially in the absence of very scientific and valid tests of potential talent and the possibility of large scale pressures building up to distort the massive operation. The system of confidential reports has already come in for a good deal of criticism. There is also the question of the considerable financial burden that will fall on the State. The case of late developers, however, can be taken care of by reserving a certain percentage of posts for lateral entry. A phased programme for reaching the goal may be mapped out and a beginning made with recruitment to all the clerical posts. Although this will not contain the rush to universities, it will give the necessary experience upon which we may build more ambitiously subsequently.

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27.4 Role of Education: A properly designed educational programme can enhance the employability of the graduates by developing in them aptitudes, personality traits and skills that underlie the entire spectrum of occupational life. It can also develop their capacity to absorb further training at later stages. Educational institutions should, among other things, aim at:

(a) developing personality traits, attitudes and basic skills which underlie the whole range of occupations;

(b) provide knowledge of basic subjects, like languages, mathematics, science, arts, etc., which is essential for later occupational training; and

(c) provide training in skills, on the school farm or in the school workshop, which would help the student to apply the principles and theories learnt in the classroom. The training of students on actual jobs should be the responsibility of the employing organisations. For, not only is the provision of specific job training in educational institutions costly, but it is often unrealistic from the point of view of actual needs.

27.5 Work Experience: Work experience should form an important ingredient of the educational programme at all stages. In order that the costs are kept within manageable limits, work experience programmes will have to be based largely on productive activities taking place in the community around the school. In order to develop the students' understanding of the world of work, programmes enabling them to participate in actual work situations should be devised in collaboration with employers in the public and private sectors. In order to initiate

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this process, the Central and State Governments may consider issuing general directives to public undertakings - factories, farms, State-owned transportation system etc. - to chalk out programmes of work experience for students in collaboration with local educational institutions.

27.6 Vocationalisation: One of the means of reducing the pressure on facilities for third level education is the diversion of large numbers of students to vocational courses, after they have completed general education of 10 years, as recommended by the Education Commission. However, considering that a large proportion of the children drop out of the system at the end of the elementary stage, or even before completing the elementary stage of education, it will be necessary to introduce the elementary school pupils also to improved techniques of agriculture and the traditional industries and to make suitable arrangements for the education and training of the drop-outs. Since most of them would be engaged in parental occupations and locally available low skill jobs, part-time classes should be organised with the help of extension agencies to provide to them, in addition to general education, training which will help in upgrading their occupational skills. The upgrading of the traditional sector, which is employing the largest number of our work-force, is essential so that the employment position does not become worse through its stagnation and consequent desertion, especially in view of the fact that the employment generating capacity of the modern sector is severely limited.

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27.7 Self-Employment: Since a sufficient number of jobs would not be available in the organised sector for all the educated, they would have to think increasingly in terms of self-employment either individually or in groups. The educational system should help to develop the attitudes and competence helpful for self-employment. Adequate information about the nature of attitudes, skills and abilities, important for self-employment, is lacking. There is need for undertaking studies for determining these. In general, however, one can identify them as initiative, resourcefulness, leadership, team spirit and a determined will - qualities which can be deliberately inculcated through the educational system by adopting appropriate educational methodologies, into which research should be conducted. Further, there are other requisites - availability of raw materials, credit and marketing facilities, consultancy and technical guidance, etc. - which are needed for promoting self-employment. The bigger industrial units could, through sub-contracting, play a significant role in this direction; so could the state policy in reserving certain ancillaries for the samll scale sector.

27.8 Manpower Planning: While the diversion of a substantial proportion of students to vocational courses would reduce the pressure on third level institutions, it will not solve the problem of educated unemployment unless sufficient job opportunities are generated for the vocationally trained persons. The employment exchanges data indicate that a large number of skilled persons, trained in various trades at the Industrial Training Institutes, are finding it difficult to secure gainful employment. Any expansion of vocational training facilities without regard to the pattern

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of demand for various skills may further worsen the unemployment situation among this category of tained workers. To avoid this, training facilities would need to be planned on the basis of requirements for manpower in specific categories of skills. Since the geographical mobility of such workers is limited, the provision of facilities for skill training should generally be planned on the basis of local surveys undertaken for determining the manpower requirements of existing and emerging occupations. A suitable machinery must be developed at the district level for conducting such surveys and for developing educational and training programmes in the light of the needs of the employment market.

27.9 Selective Admissions: While the provision of compulsory elementary education is an obligation laid down by the Constitution, post-compulsory education has to be regarded as an economic and social investment and every effort must be made to see that this investment brings satisfactory results. This is particularly true of those forms of education which are costly to provide and maintain and where the under-utilisation of the products would involve heavy infructuous expenditure. In order to avoid such under-utilisation, projections of manpower requirements should be carefully worked out and the provision of educational facilities generally regualted on the basis of these requirements.

27.10 The limitations of the manpower approach to educational planning are well-known and need no repetition. The restriction of general education facilities, on the basis of manpower demand, may also not be feasible in the present social and political conditions.

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Although such restriction may not solve the problem of educated unemployment and may only result in increasing unemployment among the next lower level of the educated from secondary schools, it must be appreciated that the reduced pressure on facilities for higher education would reduce the volume of wasteful utilisation of resources which are more urgently needed for improving the quality of education. In the actual regulation of admission to higher education facilities, it will be possible to safeguard the interests of the students belonging to the under-privileged sections of the population by providing free tuition, scholarships, etc.; the state should not be expected to go on subsidising, to an unlimited extent, the education of all the students from the better-off sections of the community who flock to higher educational institutions even when they do not have the minimum level of merit considered necessary for university level courses. In such cases, the parents should be expected to pay suitable fees upto the full cost of their wards' education.

27.11 Organisational Arrangements: There is an urgent need for integrating the educational and training programmes provided by various agencies if education is to be related more closely to employment needs. It would not be feasible, or even desirable, to bring all educational and training programmes under the control of a single agency. However, in order to integrate all educational and training efforts, there should be in each State, a high-powered coordinating council, consisting of representatives of various agencies providing education and training as also of the employers. This council should, among other things, make policy recommendations

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in the light of manpower and other requirements, and propose suitable programmes for educational development in the State; such policy recommendations and programmes should largely determine the measures for educational and training activities pursued by various development departments and non-official agencies. The policies and programmes proposed by this council should have high level support from the Chief Minister or a Cabinet Committee and should be binding on all the departments and agencies in the State.

27.12 At local levels, particularly at the district level, there should be similar coordination committees, including the representatives of various official and non-official interests. Within the overall framework, designed by the State level council, the local committees should assess the requirements of skills in the area and work out necessary arrangements for the adjustment of training facilities, and the provision of personnel for giving instruction.

27.13 A permanent machinery for regular communication of information and discussion between employers and educationa and training authorities needs to be established at various levels of administration. This would provide the necessary information about the demand in the employment market for the various skills. The composition and functioning of the existing organisational arrangements for collaboration between industry and education would need to be modified and upgraded for the purpose. A critical study of these arrangements may be made with a view to finding out the improvements that require to be made.

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27.14 Ameliorative Measures: Considering that the present stock of the educated manpower would have to be covered by the programme of providing jobs for the educated unemployed, the existing programmes should be expanded so as to cover a sufficiently large number of the present educated unemployed. The education system itself provides considerable scope for job creation for some of the educated unemployed. The expansion of elementary education facilities and the programmes of adult literacy and functional literacy are the most significant areas where unemployed under-graduates and graduates could be utilised. Additional teachers could also be appointed in single teacher schools, accounting for about a quarter of all the primary schools, so as to improve the quality and effectiveness of instruction in such schools. While minimum encouragement would have to be given to voluntary effort in the field of adult literacy as may be forthcoming, such programmes cannot be undertaken on any substantial scale if reliance is placed only on voluntary work. It is, therefore, necessary to have a massive public programme of literacy implemented by the State Governments and local bodies. With the appointment of additional teachers in elementary schools it can be expected that many elementary school teachers in rural areas would be able to undertake adult literacy work on a part-time basis. Large numbers of educated persons could also be employed on a part-time basis for this programme in all areas. Very large number could also be trained for the various tasks connected with book production, sales and distribution.

IV. PROGRAMMES IN THE FIFTH PLAN

28.0 Having indicated the progress that is likely to be achieved in the development of education by the end of the Fourth Plan in Part II and the perspective in Part III, the main directions in which the effort in the Fifth Plan should be channelled will now be indicated in this section.

28.1 In the first place, it is necessary to extend the facilities of education to girls, to the children of the weaker sections, particularly of the Scheduled Castes and the Scheduled Tribes, and to the backward regions. At the elementary stage, this should be achieved by opening more schools in the backward areas, by developing out of school education programmes for the drop outs, and by providing free textbooks, mid-day meals etc. to girls and children from poor homes. Efforts will also have to be made to recruit an increasing number of women and persons belonging to the Scheduled Castes and Scheduled Tribes to the teaching profession. At the secondary and higher stages of education, increased provision will be made for freeships, stipends and hostel facilities for girls and for children of the weaker sections. In the opening of new secondary schools, due attention will have to be given to the needs of the backward areas. It will also be necessary to give special assistance to the backward States to enable them to make up the leeway, particularly in introducing facilities for universal elementary education.

28.2 Secondly, necessary provision will have to be made in the plan for increasing facilities for part-time education, correspondence courses, evening classes and other non-formal devices, to provide opportunities for more education, both general and vocational, to

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the drop-outs and to the working people. While at the elementary stage these devices (except correspondence courses, which will not be feasible at this stage) will ensure the provision of universal education to all children upto the age of 14, at the higher education stage, they will provide an alternative avenue for higher education. It will also lead to the general improvement of educational and vocational standards of the people, promote social justice and encourage vertical and horizontal mobility of the work force.

28.3 Thirdly, every effort will be made to raise the efficiency of the system so as to reduce the enormous waste of resources that occurs due to the large number of failures at all stages of education. This will require improvement in methods of teaching and evaluation, provision of good text books and other teaching aids, improving standards of teacher training and organising large programmes of in-service training for teachers at all stages.

28.4 Fourthly, it will be necessary to review the curricula so as to link them more effectively with the real needs of the pupil, as an individual, as a member of the community and as a bread winner. In particular, efforts will have to be made in the Fifth Plan to link more effectively education with employment. At the school stage emphasis will be given to vocationalisation; and at the higher stage, the courses will be reoriented to meet the manpower needs of the developing economy. Vocational guidance services will be provided in secondary schools and colleges and close links will be maintained with the employing agencies.

28.5 Finally, every effort will be made to improve administrative and planning processes. Attention will also be given to the

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development of educational research, social education, cultural programmes, national service, scholarships and other programmes.

28.6 Enrolment Targets: The main enrolment targets envisaged in the Fifth Plan are given in the following table:

Enrolment Target for the Fifth Plan

(in million)

Age Group/ Classes	Enrolment in 1973-74 (Anticipated)			Additional enrolment in 1974-79 (Target)			Enrolment in 1978-79 (Estimated)		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
6-11 (Classes I-V)	41.5 (106)	27.2 (74)	68.7 (90)	4.1	7.9	12.0	45.6 (110)	35.1 (90)	80.7 (100)
11-14 (Classes VI-VIII)	11.6 (53)	5.4 (26)	17.0 (40)	10.7	6.7	17.4	22.3 (94)	12.1 (55)	34.4 (75)*
14-17 (Classes IX-XI)	6.6 (34)	2.5 (13)	9.1 (24)	2.4	1.6	4.0	9.0 (41)	4.1 (20)	13.1 (30)

* 50 per cent in regular classes and 25 per cent in part time classes.

(The figures in parenthesis represent the enrolment as percentage of the population in the corresponding age-group).

Elementary Education

29.0 Expansion of Facilities: Special measures would be needed to ensure that educational facilities provided are utilised by those sections of the population who have so far remained outside the ambit of elementary education and that the target of enrolling 100 per cent children of the age group 6-11 and 75 per cent of the age group 11-14 (25 per cent in the part time classes) is realised in full. Nearly a quarter of the enrolment in primary classes and 41 per cent in middle classes consist of under-age and over-age children; these proportions have changed only slightly over the years. The States should lay down and enforce regulations fixing the age of admission

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to class I; this alone will bring about the much desired homogeniety in the age-composition of the school enrolments.

29.1 The fulfilment of the targets on the above lines would mean an additional enrolment of 120 lakhs in classes I-V and of 174 lakhs in classes VI-VIII during 1974-79; of the latter, 115 lakhs are proposed to be enrolled in part-time classes. These classes will be of two types: (a) continuation classes providing education similar to middle school education and to be organised for children who have dropped out of the education system after completing the primary stage; these will cater to 5 per cent of the enrolment in part time classes; and (b) basic literacy course of 2 years for 20 per cent of the children who have either had no schooling or dropped out after completing I or II standard. These basic literacy courses will ensure that those who have to participate in the productive life of the community for many years to come possess the basic skills essential for functioning as useful and productive citizens. Since little experience is available as to the organisation of education through part-time classes, it will be necessary to undertake intensive experimentation in the last year of the current plan in providing part-time education to a sufficiently large number of children. This will provide information about the organisational and other arrangements which are needed to implement the programme on a more ambitious scale in the Fifth Five Year Plan. Experiments with the use of radio, as a supportive programme, may also be undertaken.

29.2 The major tasks would be to expand facilities in educationally backward States and districts, in sparsely-populated habitations, among the girls and among the weaker sections of the

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population. Special assistance may have to be given to the educationally backward States and districts for reaching the target of free and compulsory education. Similarly, incentives, like free textbooks and stationery, free meals, free uniforms etc. will have to be provided to promote enrolments among the girls and weaker sections.

29.3 Most of the rural habitations had been covered with elementary schools - either in them or within a reasonable walking distance - by 1966. The problem in providing education in hitherto unserved areas is that of finding adequate number of children in a habitation which would make the establishment of a school economically viable. For instance, of the rural habitations, unserved by primary schools/sections, 80 per cent had an average population of below 200; similarly, of the habitations unserved by middle schools/sections 80 per cent had, on an average, a population of below 500. The educational arrangements that can be made for these sparsely-populated habitations need to be considered. Establishment of centrally-located schools, with residential facilities for students and teachers, would be one way to extend the coverage of schools. The other possibility is to introduce the system of peripatetic teachers supported by local monitors and enriched by specially designed radio broadcasts. The services of educated persons from the locality, even if not qualified to work as regular teachers, could also be utilised on payment of a small honorarium and a small contingent grant.

29.4 In order to accommodate the additional outlays required in view of the increased targets in respect of part time classes for children in the age-group 11-14 (25 per cent instead of 10 per cent suggested in the Approach Paper), it has been proposed that the teachers required for primary stage should in the first instance be

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appointed as apprentices and given an annual salary of Rs.1800 and a contingency grant of Rs.200. After completing two years of apprenticeship these teachers would be appointed as regular teachers and given the salary and allowances that prevail in the State. This arrangement will have an added advantage of eliminating those persons who are temperamentally not suited to the teaching profession. Care will, however, have to be taken to ensure that there is no unnecessary victimisation of teachers.

29.5 A large proportion of the additional enrolment proposed would have to come primarily from among girls, and from the Scheduled Tribes, Scheduled Castes and other weaker sections of the population. Subsidies would be needed to ensure that children are not only enrolled in schools but also retained for the full period of elementary schooling. Special programmes proposed to be implemented for the purpose are: (a) a large programme of part-time education; (b) distribution of free text books and stationery to children belonging to poorer sections; (c) the establishment of 500 Ashram type schools for educating the tribal and other socially under-privileged children; (d) distribution of free clothing and attendance scholarships to the girls from the poorest strata; and (e) free mid-day meals.

29.6 In the case of girls, the problem is not only one of providing facilities. Social prejudice, demands made on their time for household work and other reasons prevent their enrolment in schools, particularly when they reach the ages of 11-13. There is, therefore, need to create a social climate favourable to the education of girls. The involvement of the panchayats, panchayat samitis and voluntary social welfare agencies would be essential in this task. A major problem in providing education to girls is the inadequate supply of women

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teachers. Among others, the measures that would need to be adopted for the purpose are: scholarships to local girls encouraging them to complete their education and training leading to a teaching career; organisation of condensed and correspondence courses for less educated woman; relaxation in recruitment rules, etc.

29.7 The strategy about providing mid-day meals will require to be given serious thought. With the assistance of the CARE, who provide the food stuffs, about 12 million children are at present receiving free meals. If the CARE assistance were to cease, the States, who at present meet the cost of packaging, transportation and distribution, will have to bear the entire cost of the programme. On the basis of about Rs.40 per child per year the cost of providing meals to 12 million children would be Rs.240 crores in the Fifth Plan. If it is assumed that one-half of the proposed additional enrolment will also be provided free meals, the cost will increase by another Rs.110 crores. Whether it will be possible to provide amounts of this magnitude needs to be considered. In the case of non-availability of resources to the extent needed, alternative strategy may have to be thought of. It might be worthwhile to shift as much of the burden to the local communities as possible, develop a school-based programme, on as large a scale as possible, by utilising, with the assistance of the agricultural and health extension machinery, kitchen gardens and school farms; encourage the local community to utlise the common land of the village for growing vegetables and foodgrains for use in schools; and encourage the local communities to collect cash and gift donations for the school meals programme. The State can provide productive assets, such as, land,

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cattle and implements for farming, equipment and materials for poultry farming etc. to the school and the community to develop self-reliance. The State can also provide research support to the programme of mid-day meals by carrying out investigations in the food value of locally grown products and the possibility of growing locally protein-rich products like soya-beans etc. which would enable a balanced diet to be provided to the children out of locally available material. An ad hoc amount of Rs.100 crores could be provided for the purpose.

29.8 Qualitative Improvements: The expansion of facilities will continue to make heavy demands on resources. Elementary schools must, however, be enabled to play their role in the economic and social transformation of the countryside. In the rural areas, they are the key institutions for the training of future productive citizens. More emphasis will have to be given to consolidation and improvement of schools. Resource constraints will, however, require identification and implementation of selected programmes which have the potentiality of making an appreciable and lasting impact.

29.9 Curricular Reforms: Curricular reform is the most significant area where effort can pay rich dividends. The existing curricula should be reviewed. Special emphasis will need to be given to relate the elementary school curriculum to loca needs and local problems. Among others, the curriculum should emphasise work experience, improved science teaching, personal and social hygiene,

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information about population control, utilisation and preservation of local resources, development of civic consciousness and so on.

29.10 Work Experience: Work experience, which must form an essential ingredient of the school curriculum, would have to be built round such activities as can be organised cheaply and by utilising locally available resources. Participation in the programme of keeping the school premises and the village clean, construction of soak pits, levelling of village roads, participation in work on the local farms etc. are some of the activities which do not require any costly equipment. Simple craft work and kitchen gardening, may also be introduced. The latter will have the additional advantage of helping to sustain a school-based midday meals programme. The extension machinery for agriculture, cottage industries etc. could acquaint the pupils with improved practices through visits to demonstration farms, production centres etc. The activities undertaken by children in grade I-V will be simple and require little expenditure; schools will, however, have to be equipped to provide work experience to children of grades V-VIII. Provisions have, therefore, been proposed for providing equipment for use by children in classes VI-VIII. The cost of the programme works out to Rs. 34.3 crores.

29.11 In-service Education: As a supportive programme to curricular reorientation, inservice training of existing teachers will need to be organised. It is proposed to provide this training to 11.2 lakh or 60 per cent of the trained elementary

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school teachers likely to be in position in 1974.

29.12 A more discriminating policy would need to be adopted in teacher recruitment. The surplus availability of high/higher secondary school and college graduates provides an opportunity to upgrade the essential qualifications for recruitment as teachers. As a long-term measure for attracting talented persons to teaching, salaries of elementary school teachers would need to be improved. As recommended by the Education Commission, effort must be made to ensure that salaries of these teachers are comparable to those of other public servants with similar qualifications and responsibilities, that the present disparity in the emoluments of teachers teaching at the various levels is reduced and that the salary scales of teachers depend upon their qualifications rather than on the stage in which they teach.

29.13 Improvement of Existing Schools: Most of the elementary schools are housed in unsatisfactory buildings; most of them are deficient in even the basic essential equipment. Considering that financial commitment in improving all the elementary schools is likely to be large, it is proposed to provide building and equipment grants to 5 per cent of the existing primary and 8 per cent of the middle schools. The grants provided will cover about 50 per cent of the cost; the rest will have to come from the community. The main task here

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will be to build up a local organisation for the building and repair programme and give it the necessary technical know-how.

29.14 Development of Selected Schools: While the above programme will lay a basis for the improvement of many schools to a minimum level, efforts are needed to develop organisational arrangements which will ensure continuous upgrading of the quality of elementary schooling, through technical guidance and the inflow of innovative ideas and practices. A phased programme will need to be drawn up by the States for the purpose.

29.15 It is suggested that, in the first phase, linkages may be built between institutions at the grass-roots level and the various technical organisation which have been established at the district, State and national levels. A programme of linking selected elementary schools with training schools, and through them with the State Institutes of Education and the National Council of Educational Research and Training may be taken up in the Fifth Plan. Under this programme, the NCERT will provide technical guidance and supporting services to the State Institutes of Education and through them to the training schools which, in their turn, will provide extension services to selected schools

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intensively and to a number of neighbouring schools more generally. About 2000 schools, attached to or adopted by training schools as demonstration schools, may be developed into experimental or model schools. Each of these selected schools would, apart from its normal teaching functions, undertake work in the field of adult literacy, pre-school education, distribution of literature for the neo-literates, school feeding etc. 10-15 elementary schools could work closely with these experimental schools, receiving information and guidance about new ideas and practices. These 30,000 schools could in due course be enabled to provide guidance to other neighbouring elementary schools, thereby ensuring a constant flow of ideas and practices to an ever widening circle of institutions and receive from them in return necessary feed-back. These schools should be given improvement grants. The authority of the selected schools will be built up through the academic support of the teacher training school and the administrative support of the inspectorate, which will ensure that the ideas and practices tried out in these schools find their way into the current practices of ordinary schools.

29.16 The State Institutes of Education will need to be given development assistance. Extension service departments will have to be provided in training schools where they have so far not been established. Adequate liaison will have to built between the district education office and the training schools to ensure a linking of the technical and administrative functions.

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29.17 Provision of Science Equipment: Under the UNICEF assisted programme some primary and middle schools and training institutions have been provided science kits. This programme would need to be expanded and science kits provided to all the remaining schools. It is, therefore, proposed to cover under this programme about 450,000 elementary schools - about 370,000 primary and 80,000 middle schools. The average cost of the science kit for primary schools is Rs.200 and that for middle schools Rs.1000. The cost of providing kits to all schools will be Rs.15.4 crores.

29.18 Educational Technology: Sufficient experience is available in regard to the use of radio broadcasts as support to school instruction. The coverage of these broadcasts can easily be extended. One of the major pre-conditions will be the availablity of radio sets in schools. It is estimated that a durable set which can stand rough treatment can be produced at a cost of Rs.200. On this basis the cost of equipping all the 500,000 elementary schools with radio sets will be Rs.10 crores. An additional amount of Rs.2 crores may be provided for such activities as minor repairs, production of guide books for teachers, evaluation of the programme and so on.

29.19 Strengthening of Administration: The tasks of expansion and qualitative improvement of elementary schools will require considerable strengthening of the educational administration at various levels, particularly at the district level where a number of tasks have to be undertaken: conducting of surveys to determine the number of children to be enrolled and the location of schools; distribution of various subsidies to school children; implementation

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of quality programmes; provision of technical guidance to schools; organisation of propaganda for enrolment of children particularly those belonging to the weaker sections; mobilisation of community's support for and participation in various educational programmes; and so on.

29.20 Financial Implications: The total provision for elementary education which is recommended is Rs.1076 crores; its break up is as follows:

	Programme	Amount (Rs. in crores)
1.	Expansion of facilities	687.8
2.	Incentives for promoting education	154.0
3.	Ashram Schools for tribal children	26.3
4.	Training of teachers	45.8*
5.	Qualitative Improvement of schools	148.6
6.	Development of State Institutes of Education	2.0
7.	Strengthening of administration	12.0*
		1076.5

* These amounts have also been shown under Teacher Education and Planning and Administration

Secondary Education

30.0 Expansion of Facilities: The trend in the increase of enrolment over the years indicates that in the Fifth Five Year Plan provision would have to be made for the education of 4 million additional children. With the realisation of these targets, the enrolment in classes IX-XI will form, in 1979, 30.3 per cent of the population in the age group 14-17 as compared to 23.5 per cent

likely to be reached in 1974. While it is not difficult to enrol boys and girls from urban areas, special efforts have to be made to promote education among the girls in rural areas and among the weaker sections of the population. The following programmes are proposed for the purpose: (a) for promotion of girls' education the provision of stipends to 1 lakh girls and the establishment of 250 girls' hostels; (b) Stipends for 1 lakh students in rural areas for partially subsidising their maintenance in hostels; and (c) stipends for 1 lakh children with poor means for partially meeting the cost of their education. The educational needs of the working youth are proposed to be met by expanding facilities for correspondence education and evening courses. It is proposed to provide these facilities for 1.3 lakh children which will be about 1 per cent of the enrolment in 1979.

30.1 Considerable amounts are required for expenditure on buildings and equipment. The public outlays on buildings need to be reduced, among other things, by optimum utilisation of existing buildings by increasing the size of enrolment, proper designing, the use of locally available building materials, multiple use of facilities and shifting part of the burden to local communities and private managements, etc. It is estimated that the cost of about 2500 new school buildings will be reflected in the Plan.

30.2 The total cost of expanding educational facilities, including incentives for promoting enrolment of girls and weaker sections, and school buildings will be Rs.216.15 crores; of this Rs.26.25 crores will be required for buildings.

30.3 Teacher Education: The major emphasis has to be on qualitative improvement. It is proposed that, apart from creating additional training facilities in States where they have not been commensurate with expanding enrolments, the programmes in the Fifth Plan should include the establishment of State Boards of Teacher Education, improvement of existing training colleges, strengthening of Rgional Colleges of Education and the inservice education of teachers. As for in service education of teachers, it is proposed to implement a district-based programme under which 300 secondary school teachers will be provided refresher training in each district. The total cost of teacher education programmes works out to Rs.4.24 crores.

30.4 Uniform Pattern: The Central Advisory Board of Education has emphasised the need for a restructuring of the pattern of school education viz. 10 years of elementary and secondary education and 2 years of higher-secondary education leading to a 3-year degree course in Arts, Science and Commerce. The Education Commission visualised it to be the ultimate goal, in pursuing which adequate planning and preparatory action would be called for. While steps should be taken to proceed in this direction throughout the country, a mere extension of the number of schooling years is not likely to lead to improvement of the quality of education. The emphasis has to be on the full utilisation of the existing number of years in different stages of education. The question of changeover to the new pattern also assumes different complexions in different States. Where the duration of education leading to the first Degree course is already 15 years, as in the Southern States, its re-ordering into the proposed pattern would not create many problems, either for the State concerned or the individuals. In the Northern States, where

it would mean an addition of one year, the reaction of both the parents and State Governments as well as the financial implications of the additional year become important. The Steering Group noted that the Ministry of Education and Social Welfare had already set up a Committee, in pursuance of the CABE recommendation, to work out the details of the changeover, including the financial costs involved in the different States, While a final decision regarding the changeover to the new pattern can be taken only after the report of the Group is available, some members of the Steering Group have emphasised the need for adopting a cautions approach in this regard, while others were equally emphatic that the reform could not be delayed beyond the Fifth Plan. In any case, the importance of adequate preparatory work cannot be overemphasised.

30.5 The need for providing terminal courses of two years' duration after the matriculation was, however, emphasised and the Steering Group suggests that these be organised urgently. Such courses would help in reducing the pressure on the university facilities and at the same time, make available skilled manpower for meeting the middle level positions in the employment sectors.

30.6 Vocationalisation: While there is an urgent need to vocationalise secondary education, the lines on which this could be undertaken are not clear. A major reasons for this uncertainity is the lack of relevant data, particularly those providing information about the education-industry-occupation relationships and the non-institutional resources available for the development

of skill among personnel groups. The studies which are in progress, and which would be undertaken in the near future, are likely to provide information as to what new forms of vocational courses would require to be developed in relation to local needs and how the available facilities would need to be diversified in order to provide for the emerging needs of skilled manpower. Since the organisation of vocational courses involves considerable expenditure, the entire question of vocationalisation would require to be considered at great length before any financial allocations are committed to the programme. The Steering Group recommends that the Planning Commission should set up an inter-departmental committee, representing among others, the Ministries of Agriculture, Labour and Employment, Education and Social Welfare etc., to examine all the relevant aspects and formulate a specific plan of action in this regard; this Committee may also indicate the guidelines which could be given to the States in respect of the vocationalisation of secondary education.

30.7 The implementation of the programme of vocationlisation would require the formulation of an integrated plan of action, involving the utilisation of resources available with different agencies, both governmental and private. This would require the building of adequate organisational arrangements at different levels of administration for collection and analysis of labour market data, formulation of schemes ensuring collaboration and participation of various educational and training authorities in the implementation of these schemes, etc. The inter-departmental committee which has been proposed above might also consider the

type of organisational arrangements which would be required.

30.8 It is estimated that over Rs.200 crores will be available in the plans of various sectors like Health, Agriculture, Labour and Employment and Polytechnic education, etc., for vocational training of the type contemplated under vocationalisation of secondary education. An additional amount of Rs. 1 crore is proposed under secondary education for districtwise surveys with a view to obtaining information about vocational courses for which training arrangements do not exist at present and which will need to be organised.

30.9 Qualitative Improvement: The emphasis on expansion has led to an under-stressing of the qualitative aspects of education, thereby adversely affecting the productivity and the efficiency of the system. In view of the crucial role that secondary education has to play in nation building, increasing emphasis will require to be laid on improving its quality. However, the constraint of resources will necessitate a selective approach, emphasising programmes which have a lasting impact and which will provide a base for undertaking a more comprehensive programme of improvement in subsequent plans. With this end in view, the following programmes have been proposed:

(a) Introduction of Work Experience: The strategy to be adopted has been explained in the 'perspective for development'. In the Fifth Plan it is proposed to provide basic equipment to 50,000 schools, strengthen the State Institutes of Education,

appoint District Project Officers, train 1 lakh teachers and establish 126 common facilities centres. An outlay of Rs.10.60 crores has been proposed for the programme.

(b) Strengthening of Guidance Services: As a supporting measure to vocationalisation, it is proposed to stregthen educational and vocational guidance services by training 20,000 teachers as career masters, strengthening of the State Bureaus and by appointing Districts Guidance Counsellors. The cost of the programme work out/to Rs. 2.5 crores.

(c) Improvement of Science and Mathematics Education: Under this programme assistance is proposed to be given to 16,400 schools for improvement of laboratory equipment. It is also proposed to strengthen the Department of Science Education of the N.C.E.R.T. and the State Institutes of Science Education and appoint Science Consultants and supporting staff in the District Offices of Education. The cost of these programmes works out to Rs.26.2 crores.

(d) Development of Selected Schools: It is proposed to upgrade some of the existing schools as experimental or model schools. These schools will experiment with innovative ideas and practices, perfect them and pass them on to 10-15 of their 'adopted' neighbouring schools, who will in turn provide the necessary feed back. The neighbouring schools will also be strengthened in respect of work experience, guidance services, science education etc. All these institutions will be linked for technical guidance to the State Institutes of Education and of Science Education and through them to the N.C.E.R.T. It is expected that this programme will provide experience for undertaking

a more ambitious programme of upgrading other schools in subsequent plans. The cost of the programme works out to Rs. 24.65 crores.

30.10 Other Programmes: The other programmes which are included under secondary education are as follows:

(i) Teachers' Welfare: The two programmes proposed to be implemented for teachers' welfare involve (a) setting up of a teachers' centre in each Tehsil for providing facilities for recreation and professional development of teachers; and (b) the provision, on a cooperative basis, of housing and medical facilities and other amenities. The amounts proposed are Rs. 6.36 crores.

(ii) A provision of Rs. 1 crore has been proposed for strengthening the research functions of the N.C.E.R.T. and for supporting research in problems of education.

30.11 The total cost of the programmes of secondary education works out to about Rs. 300 crores; of this amount Rs. 80 crores will be required for buildings and equipment. The break-up into broad categories is indicated below:

	Programme	Amount (Rs. in crores)
1.	Expansion of facilities (including facilities for informal education)	191.50
2.	Incentives for promoting education of girls and weaker sections	24.65
3.	Teacher education	4.24
4.	Reorganisation of secondary education	6.25
5.	Qualitative improvement of education	64.86
6.	Teachers' welfare	6.36
7.	Research	1.00
	Total:	298.86
	or Rs. 300 crores	

Teacher Education

31.0 In the light of the overall objectives indicated in the 'perspective', and the programmes of elementary and secondary education already indicated, the following programmes and outlays are proposed for teacher education:

Programme	Proposed outlay (Rs. in crores)
A. Elementary Education	
(i) Additional seats	11.11
(ii) Stipends to trainees	1.50
(iii) Correspondence courses for untrained teachers	1.70
(iv) Inservice education of teachers	22.40
(v) Extension services departments	9.10
Total	45.81
B. Secondary Education	
(i) Additional seats	0.28
(ii) State Boards of Teacher Education	0.63
(iii) Improvement of existing institutions	1.75
(iv) Inservice education of teachers	1.58
Total:	4.24
Grand Total	50.05
or Rs. 50 crores	

University Education:

32.0 Keeping in view the present position of higher education and the long term needs of the socio-economic development of India the following schematic priorities are recommended for adoption in the Fifth Plan:

32.1 Consolidation and Improvement: Emphasis should be laid on the improvement and consolidation of higher education facilities rather than on institutional expansion. The important constituents of the qualitative improvement may be:

i) Expanding and improving post-graduate education and research by providing accelerated assistance to university departments/centres for improving their physical and academic facilities. Computer facilities should be provided at some centrally located university centres. While post-graduate teaching should be mainly in universities, a few selected colleges may be assisted to organise post-graduate education under the overall guidance of the universities and in close collaboration with centres of advanced study.

ii) Improving pace-setting institutions like the centres of advanced study, university centres, autonomous colleges etc.

iii) Providing research fellowships/scholarships on a liberal scale.

iv) Improving teacher competencies through better emoluments and other facilities like housing, health schemes, seminars, refresher courses and giving them other incentives to improve their academic and professional competence. The teaching programme should be so organised that every teacher is exposed to orientation

programme/self study extending from 3 to 6 months, once in 5 years. There is also need for the regular orientation of those concerned with university administration. The regional mobility of teachers should be ensured. This would necessitate strengthening of the National Staff College and the opening of similar colleges in various regions.

v) Providing adequate assistance to affiliated colleges selected on the basis of their performance in academic and co-curricular fields.

32.2 Employment Orientation: There is need for giving employment orientation to the educational system. This has two important pre-requisites:

(a) Restructuring of the university curriculum so that some vocational courses, whose need can be specifically identified, could become an integral part of higher education. These courses should further be linked with research on the one hand and practical projects, to the extent possible on the other, so that education, research and productivity get firmly linked.

(b) There is need for the setting up of employment and counselling Bureaux in universities and colleges.

32.3 Student services: In view of the frequent outbursts of student unrest in the country and the need to provide the basic minimum academic, co-curricular and recreational facilities to students, adequate emphasis should be laid on

the provision of student services, such as hostels, day student homes, halls of residence, play grounds, gymnasia, etc. A programme of health services - preventive and curative - including regular physical check up should be an essential part of this programme.

32.4 Additional Enrolment: The number of students in arts, science, commerce and law courses (including the PUC and Intermediate) is estimated to increase from 35.47 lakhs in 1973-74 to 54.51 lakhs in 1978-79, indicating an additional enrolment of 19.04 lakhs during the Fifth Plan. The break up of these enrolments into stages would be as under:

Enrolment in Arts, Science, Commerce & Law Courses

(in lakhs)

Stage	1973-74	1978-79	Additional
Intermediate	5.43	7.99	2.56
PUC	7.15	10.13	2.98
Graduate	20.28	32.32	12.04
Post-graduate & Research	2.61	4.07	1.46
Total	35.47	54.51	19.04

32.5. The facilities for part time and own-time education at present are on a small scale. Only 11 universities have so far made arrangements for correspondence courses and only a few universities allow students - that too limited to certain categories - as private candidates for their examinations. The facilities for part-time and own-time education should be expanded in the Fifth Plan. The distribution of the proposed additional enrolment is indicated below:

(figures in lakhs)

Stage	Regular colleges	Evening colleges	correspondence courses etc.	External candidates	Total
P.U.C.	1.48	0.60	0.60	0.30	2.98
Intermediate	1.28	0.51	0.51	0.26	2.56
Graduate	6.02	2.41	2.41	1.20	12.04
Post Graduate & Research	0.73	0.29	0.29	0.15	1.46
Total	9.51	3.81	3.81	1.91	19.01

32.6 Cost of Expansion: The average annual recurring cost per student during the Fifth Plan, estimated on the basis of per unit teacher costs, works out to Rs.350.80, Rs.991.95, and Rs.2009.57 for PUC/Inter, Graduate and Postgraduate courses respectively. This is based on the staff-student ratio of 1:25, 1:20 and 1:12 for PUC/Inter, Graduate and Post-graduate courses respectively. The recurring cost for correspondence courses will be 25 per cent of the net recurring cost per student in regular courses. The non-recurring cost would be 10 per cent of the net recurring cost. These costs include an element of the improvement of existing facilities. Assuming that non-governmental contribution from fees, endowments etc. would remain at least on the present pattern, the cost to the government of providing for the additional enrolment and bringing about qualitative improvement of the existing facilities indicated above would be about Rs.210.00 crores.

32.7 Improvement of Existing Facilities: The need for qualitative improvement of university education has been alluded to earlier. It has been suggested that for the existing enrolment of 3.5 million, Rs.100 per student may be provided over the five year period for

the expansion of library and laboratory facilities etc. The total cost of this scheme would be Rs. 35 crores.

32.8 Development of Research in Universities: It is proposed to strengthen the infra-structure of research in the universities and to promote research by individual researchers. For this purpose, it would be necessary to identify promising departments and creative individuals and areas of research both from the point of view of the growth of the disciplines and of the requirements of the national economy. An amount of Rs. 40 crores is proposed for the purpose. In addition, an outlay of Rs. 15 crores is suggested for research followships.

32.9 Computer Centres in Universities: The use of electronic computer in research has increased considerably. It would, therefore, be necessary to provide computer facilities on a regional basis at a number of university centres. At an average cost of Rs. 30 lakhs per computer, including installation charges, the cost of providing computer facilities at 35 university centres would be Rs. 10.50 crores.

32.10 Agency of Correspondence Courses: Since the facilities for correspondence education are to be expanded in a big way, an organisation for conducting research, training teachers, preparing materials etc. should be established. An amount of Rs. 2.5 crores is suggested for this scheme.

32.11 New Universities: The concept of universities needs to be changed to suit the academic needs and the managerial viability of the universities as discussed earlier. The new universities will be established after a thorough scrutiny

of the need and type of university required for the area. An amount of Rs.50 crores is proposed for this purpose.

32.12 Centres of Advanced Study: At present, there are 30 Centres for Advanced Study in science and humanities. It is proposed to recognise some promising university departments as Centres of Advanced Studies during the Fifth Plan. An amount of Rs.10 crores is suggested for this programme.

32.13 Autonomous Colleges: The Education Commission has suggested giving autonomous status to outstanding colleges. This would involve the power to frame their own rules of admission, prescribe courses of study, conduct examinations and so on. 200 colleges may be assisted to become autonomous for which a provision of Rs.20 crores will be required.

32.14 Linking University Education with Productivity: In the Fourth Plan, an attempt was made to introduce applied science courses with an initial allocation of Rs.3 crores. The progress of the scheme has, however, been almost negligible. In the Fifth Plan, it is proposed to link education with research with productivity and to introduce work experience and vocational elements in non-professional courses. It is also proposed to provide instrumentation workshops for repair and servicing of scientific equipment. An amount of Rs.6 crores is suggested for the purpose.

32.15 Special Assistance to Selected Colleges: The UGC has been assisting selected colleges to improve their physical and academic facilities. Assistance is also provided for science improvement programme in colleges. It is proposed

to continue this activity and to provide assistance to 400 colleges at the rate of Rs.5 lakhs per college. The total cost would work out to Rs.20 crores.

32.16 Adult Education: In view of the increasing importance of continuation education, it is proposed to help the universities in setting up departments of adult and continuing education, to undertake research in adult education methodology, etc. An amount of Rs.3 crores is suggested for the purpose.

32.17 Student Services: A provision of Rs.20 crores is suggested for augmenting the programmes concerning amenities to students, which would include provision of facilities like health services, recreation, games, study rooms and student homes in congested cities.

32.18 Teacher Improvement Programmes: The UGC has already taken up numerous programmes for the professional development of the teachers. These schemes, will be continued with extended participation during the Fifth Plan. An ad hoc provision of Rs. 15 crores is suggested for the purpose.

32.19 Staff Quarters: It is recognised that provision of residential facilities for the staff of collegiate institutions should be an integral part for the teacher improvement programme. This may take the form of staff quarters and teachers' hostels. A modest effort is proposed to be made in this direction with a provision of Rs. 10 crores.

32.20 The outlay for University Education proposed by the Task Force, adds upto Rs.526.09 crores. Keeping in view the inter-sectoral

priorities an outlay of Rs.370 crores is recommended. The scheme-wise break-up of both these outlays are shown in table below:

Schemewise break-up of outlay for Higher Education

(Rs. in crores)

S.No.	Name of the Scheme	Fifth Plan proposals	
		Task Force	Steering Group
I.	Expansion of Educational facilities		
	(a) Under-graduates	224.95	186.78
	(b) Post-graduates	44.14	34.89
	(c) Establishment of New Universities	50.00	15.00
	Total I	319.09	241.67@
II.	Improvement of existing facilities		
	(a) Special assistance to selected colleges	20.00	14.00
	(b) Improvement of library/laboratory and other facilities	35.00	28.42
	(c) Autonomous colleges	20.00	10.00
	Total II	75.00	52.42
III.	Development of Research		
	(a) Development and consolidation of Research	40.00	24.00
	(b) Fellowships for research	15.00	10.00
	(c) Centres of Advanced Study	10.00	10.00
	(d) Libraries and Computer Centres	10.50	5.00
	Total III	75.50	49.00
IV.	Other Programmes		
	(a) [illegible] correspondence courses	2.50	2.00
	(b) Linking Research, Education and Productivity	6.00	5.00
	(c) Adult Education	3.00	3.00
	(d) Student Services	20.00	10.00
	(e) Teachers improvement programmes	15.00	10.00

S.No.	Name of the scheme	Fifth Plan proposals	
		Task Force	Steering Group
(f)	Staff Quarters	10.0	10.0
	Total IV	56.50	40.00
	Grand Total:	526.09	383.09*

@ Includes Rs.5.00 crores as non-recurring cost for correspondence courses study centres.

* Includes Rs.3 crores provided under adult education and Rs.10 crores for research fellowships which have been included under scholarships. Therefore, the provision for university education is Rs.370 crores.

Social Education:

33.0 Keeping in view the goals and the strategy outlined in the perspective, the priority tasks in adult education are five. The first is to build skill training and functional literacy in the productive programmes of national coverage like agriculture extension, animal husbandry, soil conservation, irrigation and water use. The second is to build relevant adult education, including functional literacy, in these national programmes, where effective communicati

with the masses is an inseparable part of the programme like health and family planning, child and family welfare, cooperative development etc. The third is to concentrate on those areas where there are a large number of problems in the solution of which the entire community is likely to be interested. These include the problems of sanitation, health and nutrition, literacy, recreation, efficient running of social organisations, etc. In these areas, the programme of adult education will have to be carefully phased out keeping in view the felt needs of the community and the possibility of generating maximum self-help and self-direction in the process. The Gram Shikshan Mohim is an important illustration of the area approach. The fourth task is to develop those experiments which have been found to be significant on the basis of our past experience; the Vidya Peeths in Mysore, where farmers' sons receive all-round education for six months or so; adult schools which prepare the adults for regular examination of primary and middle stages through condensed courses; the conferred courses for adult women organised by the Central Social Welfare Board with a view to their absorption in jobs; Polyvalent Adult Education Centres which organise skill training and upgrading in a number of occupations, etc. Lastly educational institutions - students

and teachers - including Youth Centres, the NSS etc. should take up the removal of illiteracy and the provision of basic information to the people as a major challenge. The work should be done as a part of their educational routine.

33.1 The Task Force on Adult Education has proposed the following outlays for the Fifth Plan:

(i) 2% of the total outlay of Rs.23,750 crores proposed for the various developmental projects to be launched in the Fifth Plan i.e. Rs. 580 crores may be earmarked for the education and training of the employees/workers engaged in those projects and the authorities responsible for the implementation of those projects should also share the responsibility for the education and training of the beneficiaries.

(ii) Under the educational schemes of the Central and the State Governments, an amount of Rs.100 crores may be provided. The schematic distribution of this outlay and its break-up between the Central and the State Governments may be decided keeping in view the priorities suggested by the Task Force.

(iii) A provision of not less than Rs.20 crores should be separately made for the universities of the country to develop departments of Continuing Education and Extension work during the Fifth Five Year Plan.

The Steering Group strongly supports recommendation no.(i). In regard to (ii) and (iii), however, the Group is of the view that it will be difficult to find Rs 120 crores for adult education from Rs 2200 crores for education as a whole. It is also doubtful whether that step-up will be even feasible against the Fourth Plan outlay of Rs 8 crores, and an expenditure of even less. It is recommended, therefore, that an outlay of Rs 50 crores be provided under education for the following programmes :

Scheme	Outlay (Rs crores)
National and State Boards of Adult Education	1.00
Production of literature for neo-literates	2.00
Functional literacy	5.00
Assistance to Voluntary organisations.	1.00
Research and experimentation, Training and appointment of key personnel.	4.00
Worth-while projects (Polyvalent centres, Vidya Peeth, adult schools etc.)	2.00
Adult Education and Continuing Education through educational institutions including rural libraries.	35.00
Total	50.00

Development of Libraries:

34.0 The programmes in the Fifth Plan should include the development of National Library, Calcutta, Central Reference

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Library, Calcutta, the Connemara Public Library, Madras and the Asiatic Society, Bombay. The Central Secretariat Library should be developed into a Central Library which should coordinate the book acquisition policies and resources of a number of good libraries, each with its own specialisation, which are in existence in Delhi. The Steering Group recommends that a Committee of five persons be constituted immediately to prepare a scheme in pooling the resources and services of all the important libraries in Delhi so as to provide an integrated local library system under the aegis of Central Library. Other libraries like the Khuda Baksh Oriental Public Library, Patna and the Raza Library, Rampur should be strengthened. Library legislation should be enacted in all the States. The Raja Ram Mohan Roy Library Foundation should be strengthened through grants by the Central and State Governments so that it is able to support public libraries in different parts of the country. Service Centres should be established in different regions for helping the libraries in the proper preservation by way of fumigation, lamination, chemical treatment and reinforced binding. These centres will also provide reprographic facilities. There should be six such centres in the country - one in each of the six regions established by the Government for the purpose of the Zonal Councils. Four Book Procurement Centres - one each at Calcutta, Madras, Bombay and Delhi - should be set up, whose

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staff should be in continuous touch with the public and should assist the recipient libraries in the retrospective acquisition of material under the Delivery of Books Act of 1954 as amended in 1956. Public libraries' development programme in the States should also be taken up.

34.1 The Working Group on Libraries has recommended an outlay of Rs 20 crores against which an outlay of Rs 10.00 crores is recommended . In addition, amounts for rural libraries have been provided under Social Education.

Language Development:

35.0 Within the context of the objectives and policy framework stretched in the Section on Perspective, the Task Force has recommended Rs 43 crores for Language Development against an anticipated expenditure of Rs 16.76 crores in the Fourth Plan. This may be accepted. The major programmes are appointment of Hindi teachers in non-Hindi speaking States, and of teachers of other Indian languages in Hindi speaking States, development of Bhartiya Bhasha Sansthan, Mysore, development of Rashtriya Sanskrit Sansthan and of the Kendriya Sanskrit Vidyapeeths, development of the Central Institute of English and Foreign Languages, etc..

Book Production:

36.0 The policy directions and pattern of institutional growth have been indicated in the perspective. The programmes recommended by the Task Force for implementation during the

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Fifth Plan are summed up below:

	(Rs. in crores)
University level books (including core books)	6
National Institute of Training	1
Other programmes like National Book Trust, publication of cheap books, National Book Development Board, etc.	13
Total	20

Within the overall outlay of Rs.2200 crores, an outlay of Rs.17 crores may be accepted for these programmes.

Cultural Programmes

37.0 Culture is the quaintessence of the value system of a nation, which gives it identity, as well as her accomplishment in the various fields over the centuries. Indian culture is, however, a composite culture and it should continue to be the deliberate policy of government to encourage and bring out the vitality of each of its various components. Further, it is generally believed that there is some antagonism between science and culture or between tradition and modernity. Really, however, science is as much a part of tradition as anything else. Similarly, modernity has to grow out of tradition. While society has to learn many new skills and adopt many new attitudes as it goes forward, if it is to have healthy growth, its roots must remain deep in the past. The thurst in the Fifth Plan in the field of culture should be first to free it from its present confinement to a few programmes called Cultural Programmes and make the cultural effect prevade the entire educatonal curriculum. The cultural factors should also be fully taken

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into account when drawing up and implementing programmes of tribal and social welfare, health and family planning, agricultural and industrial labour etc. Secondly, a well designed system of institutions must be created which should have the specific responsibility and competence for the preservation, consolidation and growth of culture. Thirdly, the activities of the institutions covered under the head Cultural Programmes must no longer remain confined to the cities and the elite, as has happened so far, but must stretch out to the small towns and villages as well as to the masses at large. It will mean a dual operation: the interpretation of the fine arts in terms intelligible to the people and the modifying impact of the impulses emanating from the people upon the cultural currents. Fourthly, the emphasis on the training aspect will need to be very considerably increased. Under the impact of modern life the old pupil - disciple relationship has virtually collapsed. The numbers learning the arts have also very considerably increased and it will be impossible to accommodate the large scale increase in the clientele within the old relationship. Therefore, much larger number of techers have to be trained and the methods of training them have to be very considerably recast. The modern media have also to be brought in a large measure for the purpose. Lastly, the emphasis on the encouragement and nurturing of talent should be increased. This will mean spotting out talent at a young age, assisting them at various stages of development and finally ensuring that they are looked after in old age. It will also require the putting up of studios, threatres etc. where aspiring artists can display their art pieces or perform. The dearth of such facilities is very keenly felt.

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37.1 Gazetteers: Coming to individual programmes, under Gazetteers, apart from continuing the existing schemes, the major new schemes recommended are those of preparing the National Gazetteer and the Cultural Heritage Series (30 volumes), each volume dealing with one State/Union Territory.

37.2 Archaeology: Under Archaeology, the Fifth Plan should aim at streamlining the Archaeological Survey of India and the State Departments of Archaeology and expanding their activities in the preservation of the cultural heritage of India. The role of the Archaeological Survey of India should not be confined to the archaeology of the by-gone age. It should also take care of the recent past. There have been glaring lacunae in the development of archaeology in the modern period such as the under-water archaeology, air reconnaisance of inaccessible areas as in Rajasthan and the study of the archaeology of the countries of South East Asia, Central Asia, Western Asia and Africa with which our country had close association in the past. Centres of advanced study for archaeology may be set up in the universities. Archaeology may also be introduced as a subject for study and examination in the universities. Architectural archaeology may also be made one of the subjects for examination of the Public Service Commissions.

37.3 Archives: Under Archives, very high priority should be given to the programme of preservation and up-keep of the records, because once these records decay or are destroyed, it would not be possible to do anything for their retrieval at a later stage.

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The size of the problem is stupendous and it might be possible to tackle it only through a phased programme. Apart from the official records, there is the question of the acquisition and preservation of private records. Very high priority, therefore, should be given to the construction of the Annexe to the National Archives building, which could not be started in the Fourth Plan. Other important programme under Archives should be the setting up of Regional Repositories, Mobile Microfilm Units, and the School for Archival Training.

37.4 Museums: The various important museums need further development. Private museums also need to be reorganised and developed.

37.5 Cultural Institutes: A number of Institutes like the Namgyal Institute of Tibetology, Gangtok, Nav Nalanda Mahavihara, etc. have been set up for study and research in specific branches of our cultural heritage. These have considerable national and international significance. Their needs are not large and because of their strategic importance they should be speedily met.

37.6 Akademies: As regards the National Akademies their working should be re-organised and streamlined on the lines of the recommendations of the Khosla Committee, which are at present under the consideration of the Government of India. The important programmes recommended by the Task Force are: (a) the preservation and consolidation of the existing forms of art in the fields of music, dance, drama, painting, literature, etc. (b) the setting up of a composite

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museum of art and culture in each district; (c) the establishment of theatres at national, State and District levels; (d) the setting up of a national institute for research and training of artists and performers in the various fields of art; (e) the production of literature; (f) the encouragement of talent in art and culture through liberal provision of fellowships and scholarships and the creation of the art talent pool; and (g) financial assistance for the development of cultural institutes and non-official organisations working in the different fields of art and culture, etc. It may be difficult to take up all of these programmes in the Fifth Plan and some of them may flow over to the Sixth Plan.

37.7 Most of the institutes mentioned under the head of Cultural Programmes are either attached offices of the Ministry of Education and Social Welfare or autonomous organisations created under it. Administrative problems of these bodies need to be studied and the bottleneck removed. This is especially true of the financial procedures which considerably handicap the functioning of these institutions. Secondly, while the cultural aspect should pervade all programmes and should be taken care of by a number of agencies there should be some coordinating agency so that the various programmes are informed by a unified policy and reinforce each other rather than lead to wastage, resulting from dispersed and uncoordinated efforts. The obvious focal point is the Department of Culture recently created.

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37.8 Financial Provisions: The total outlays suggested by the Task Force of Art and Culture for the various programmes are as follows:

(Rs crores)

		Centre	States/ U.Ts.	Total
1.	Gazetteers	1.00	0.60	1.60
2.	Archaeology	11.75	4.15	15.90
3.	Archives	5.00	2.50	7.50
4.	Museums and Art Galleries	4.60	2.40	7.00
5.	Cultural Institutes	1.00	-	1.00
6.	Arts and Culture (including the National Akademies)	6.00	9.00	15.00
	Total	29.35	18.65	48.00

It may be difficult to provide Rs 48 crores for these programmes within the outlay of Rs 2200 crores allocated for education. The maximum possible outlay may be Rs 25 crores within which the recommendation of the Task Force may have to be contained.

Technical Education

38.0 Programmes: The specific programmes for the Fifth Plan are being suggested keeping in view the long-term objectives and goals. In the first instance, the process of consolidation of existing institutions should be completed

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by providing the necessary physical facilities of buildings, equipment etc. and the faculty in each technical institution. Provision should also be made for staff and student amenities, staff quarters and campus facilities on the lines recommended by the All India Council for Technical Education.

38.1 The plan of action for the reorganisation and development of polytechnic education should be implemented vigorously; courses should be diversified in consultation with industry and a variety of part-time and short-time courses offered for meeting the needs of industry.

38.2 The qualitative improvement programme for faculty development, curriculum reform and the preparation of instructional materials should be expanded and intensified both for the degree and diploma level courses. The workshops and laboratories should be modernised and obsolete equipment replaced especially in the older institutions. Facilities for diploma courses in applied art, commercial practice, pharmacy etc. should be further developed. The scheme of sandwich courses should be extended to as many colleges and polytechnics as possible.

38.3 Stress should be laid on the development and training of teachers. The staff structure in engineering colleges and polytechnics should be revised in the light of the recommendations of the All India Council for

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Technical Education. Provision should be made for a training reserve as well as for an academic exchange programme among the individual institutions. Technical institutions should be helped to obtain the services of experts from industry for teaching on a short-term basis.

38.4 Facilities for post-graduate study and research should be consolidated in all the institutions approved so far. The Institutes of Technology should develop advanced centres in selected technological areas according to the plan already formulated. The Regional Engineering Colleges should offer industry-oriented courses of study and set up practice laboratories in consultation with the industry in their neighbourhood. Selected institutions should undertake research and development work according to the National Plan of Science and Technology.

38.5 Facilities for management education should be strengthened not merely in the four Institutes of Management but also under the university departments. Suitable provision should also be made for training in supervision and foremanship at a number of centres.

38.6 The establishment and development of specialised institutes, like the National Institute of Foundry and Forge Technology, National Institute for Training in Industrial

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Engineering and Centre for Industrial Design should be completed. The Regional Technical Teachers Training Institutes should set up suitable extension centres in the different States for expanding the training of polytechnic teachers. They should also offer a structured programme of training in pedagogy for college teachers and of giving them industrial experience.

38.7 The scheme of merit-cum-means scholarships should be revived for polytechnic students. The apprenticeship training of graduates and diploma holders should be arranged under the amended Apprentices Act. Selected technical institutions should be helped to establish science and technology museums and prepare and publish text books, standard works and popular journals for bringing science and technology closer to the community at large.

38.8 Keeping in view the long-term needs of the country, it is proposed to upgrade a few selected engineering colleges as centres of advanced study and research.

38.9 The administrative set up in the States and at the Centre should be strengthened for effective planning and management of the programmes. Statutory Boards of Technical Education should be set up at the State level as recommended by the All India Council for Technical Education. A machinery for manpower

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information, monitoring and evaluation should be set up in the Ministry of Education.

38.10 Financial Outlays: For all these programmes, the Task Force on Vocational and Technical Education has estimated a financial outlay of Rs 300 crores in the Fifth Plan. It may not, however, be possible to provide this outlay in the context of Rs 2200 crores for all educational programmes in the Plan. The programmes and their Fifth Plan outlays suggested by the Task Force have, therefore, been reviewed in order to indicate a scheme of priorities related to the available financial resources. In doing so, it has been envisaged that the expenditure on construction activities would be minimised and new programmes phased out without affecting the important objectives to be achieved in the Fifth Plan. The programme-wise outlay recommended by the Task Force is proposed to be modified within the context of Rs 190 crores for technical education in the Fifth Plan. The details are given in Appendix VI. Among the major modifications now proposed are the following:

(i) The programme of setting up the two new Institutes of Management at Bangalore and Lucknow be phased over a period of 7-8 years particularly in respect of construction of buildings.

(ii) The activities of the National Council of Science Education be maintained more or less at the current level and new programmes be sponsored and financed by agencies like the U.G.C., N.C.E.R.T. etc.

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(iii) The financial outlays required for undertaking R & D projects be made available from the sponsoring agencies like the industry and not charged to the Education plan.

(iv) The provision for apprenticeship training be reduced; the emphasis on sandwich courses and the likely increase in employment opportunities might result in a reduction in the number of graduates and diploma holders who would need such training.

(v) Provision for new programmes for which detailed schemes are yet to be formulated be reduced in an ad hoc manner e.g., upgrading of selected engineering colleges, establishment of science and technology museums, modernisation of laboratories and workshops.

38.11 The outlays suggested according to priority are summed up below:-

(Rs in cores)

	PRIORITY		
	I	II	III
1. Central Schemes	64.3	30.7	45.5
2. Centrally Sponsored Schemes			
(a) Consolidation and Development	66.0	1.0	1.0
(b) Qualitative Improvement and Specialised Studies	60.0	16.0	15.5
Total	190.3	47.7	62.0

To the extent additional provisions can be made available, the programmes indicated under priorities II and III might be taken up; the minimum set of programmes which must be included in the Plan are shown under Priority I.

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Planning & Administration

39.0 The several directions in which the machinery for educational planning and administration needs to be reorganised and strengthened have been outlined in the earlier section on perspective. Many of the tasks discussed therein do not require large financial investments. The institutional arrangements that have already been created - for instance, the National Council of Educational Research & Training, the National Staff College for Educational Planners and Administrators at the national level, the State Institutes of Education at the State level - can be utilised for many of the planning and administering functions. The staff available in the Directorates of Education can be redeployed in the light of their qualifications and expertise; the services of teachers of schools and colleges can be utilised for short assignments. The main thrust has to be on harnessing all the available institutional resources to enrich the planning process and to draw up realistic and mutually supportive and consistent programmes and sectoral tasks.

39.1 There is also need to ensure that the inter-sectoral priorities in the Education Plan are not distorted at the implementation stage and any under-spending or overspending is safeguarded against. This would call for an effective machinery for educational

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planning at the State level and a mechanism by which the different State Plans are integrated into a coherent national plan. In this connection, the Steering Group recommends the establishment of a high powered committee at the Centre which would, in addition to affecting coordination, render such guidance and help to individual State Governments as they may require in the planning and implementation of educational development.

39.2 The Steering Group stresses the need for timely, reliable and adequate statistical and other information base necessary for plan formulation; this is specially needed at the State level. There should be a number of studies and surveys organised in order to give empirical data support to development schemes. Similarly, there is an urgent need to encourage and expand programmes of research and experimentation in the field of education in general and educational planning, in particular. For the formulation of programmes, to determine inter-se priorities as well as to evaluate them for feed back, for instance, a great deal of academic input is required. The Steering Group recommends that the collection of such data and the organisation of relevant studies for the purpose should be taken up as an advance action for the Fifth Plan. Even where their results would not be available for the Fifth Plan, these studies should still be taken up to strengthen the statistical base for future planning.

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39.3 As regards the financial provision for strengthening the planning and administrative machinery, the following programmes and outlays are proposed in the Fifth Plan:

(Rs in crores)

Programmes	Outlays
1. Strengthening of supervision and inspection of schools	12.00
2. Establishment of the State Boards of Teacher Education	0.63
3. Appointment of District Project Officers for work experience	1.26
4. Strengthening of the State Bureaux of Educational and Vocational Guidance	0.20
5. Appointment of District Guidance Counsellors	0.63
6. Appointment of District Science Consultants	3.50
7. Strengthening of the Planning, Administration and Statistical machinery	15.00
8. Establishment of Planning Units and the strengthening of the State Directorates and State Boards of Technical Education	2.50
9. Central Planning, Information Processing and Monitoring Unit for Technical Education	0.50
TOTAL	35.22

A separate provision of only Rs 15 crores is being made for the programme listed at 7. The provisions for other programmes have been built in in the respective sectoral programmes.

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Research and Development:

40.0 Education is a major activity of a nation. It is an industry which utilises the time, talent and energies of a large mass of people; it also utilises resources in money and material. Every effort must be made to utilise these resources to the maximum advantage of the community. The investment of an adequate research and development effort is essential for ensuring a constant and continuous improvement of the educational process. Innovative practices must be experimented with, perfected in selected institutions and passed on for adoption by other institutions. To prevent them from becoming dys-functional to social needs, the existing institutional structures must be kept under constant review so that those that are obsolete are discarded and replaced with new patterns which help in ordering change so that it does not become disruptive.

40.1 The research and development effort has been built in in the various sectoral programmes. In all the sectors specific outlays have been proposed for the further development of the research and training institutes, like the National Council of Educational Research and Training, the National Staff College for Planners and Administrators, the State Institutes of Education, of Science Education and of Languages; new

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administrative arrangements like State Boards of Teacher Education, have also been proposed to ensure coordination and the implementation of integrated plans of development. The development of pace-setting schools, training institutions, autonomous colleges etc., is expected to provide a framework for experimentation with and transmission of innovative ideas and practices.

40.2 An outlay of about Rs 75 crores has been built in in the various sectors for research and development activity. The details are indicated below:-

Research and development in Education - Outlays for

Scheme		Outlays (Rs crores)
A.	Elementary Education	
(i)	Development of pace-setting schools	17.80
(ii)	Development of State Institutes of Education	2.80
(iii)	Extension services departments in training schools	9.10
B.	Secondary Education	
(iv)	Development of pace-setting schools	6.65
(v)	Strengthening and development of NCERT's Department of Science Education and State Institutes of Science Education	2.00
(vi)	Establishment of Teachers' Centres (for professional and recreational facilities)	1.35

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(vii) Sponsored research	1.00
C. Social Education	
(viii) Research and experimentation	2.00
D. Higher Education	
(ix) Establishment of Computer Centres	10.50
(x) Institute of Correspondence Education	2.50
(xi) Teacher Improvement Programmes	10.00
E. Book Development	
(xii) National Institute of Training	1.00
F. Technical Education	
(xiii) Faculty Development, Curriculum design etc.	8.00
total :	74.71

V. FINANCIAL OUTLAYS

41.0 In the earlier Section, the programmes for implementation in the Fifth Plan have been indicated in broad outlines. It will be seen that the main emphasis in the Fifth Plan is on the achievement of universal education at the elementary stage. This is in accordance with the priority attached in the Fifth Plan to the programme of fulfilling the basic minimum needs of the people of which elementary education is an important one. Provision is proposed for this programme accordingly. Further, tentative estimates have been

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worked out for the requirements of different sectors in the Fifth Plan. These are given in the table below along with the outlays recommended by the respective Task Forces:

Suggested Sub-head-wise Outlays on Education during 1974-79

(Rs crores)

S.No.	Sub-head	Fourth Plan		Fifth Plan			
		Outlay	Percentage to total	Task Force Proposals	Percentage to total	Recommended in Rs 2200 crores Plan	Percentage to total
1.	Elementary Education	234.74	28.5	1200.00	39.5	1030.00	46.8
2.	Secondary Education	118.32	14.4	395.00	13.0	300.00	13.6
3.	University Education	183.52	22.3	526.00	17.3	370.00	16.8
4.	Teacher Education	21.17	2.6	50.00	1.6	50.00	2.3
5.	Social Education	8.30	1.0	120.00(2)	3.9	50.00	2.3
6.	Cultural Programmes	12.49	1.5	33.60	1.1	25.00	1.2
7.	Other Programmes	112.25	14.4	418.00	13.7	185.00	8.4
	(a) Physical Education and Youth Welfare and Games	20.00	2.4	231.00	7.6	50.00	2.3
	(b) Development of languages	14.98	1.8	42.00	1.3	43.00	2.0
	(c) Educational Planning and Administration(4)	48.97	5.9	15.00	0.5	15.00	0.7
	(d) Scholarships	15.30	1.9	80.00(3)	2.6	50.00	2.3
	(e) Libraries	2.30	0.3	20.00	0.7	10.00	0.4
	(f) Book Production	17.00	2.1	30.00	1.0	17.00	0.8
8.	General Education	697.29					
		791.07(1)	85.1	2742.00	91.0	2010.00	91.4
9.	Technical Education	123.17	14.9	300.00	9.9	190.00	8.6
10.	Total Education	824.24	100.0	3042.60 or 3043	100.0	2200.00	100.0

(1) Sub-head-wise break-up of difference of Rs 3.78 crores is not available.
(2) Plus 2 per cent of the minimum needs programmes of education as suggested in Approach Paper or Rs 530 crores.
(3) No Task Force was formed for scholarships. This figure has been repeated from Col.7.
(4) Includes other programmes where allocation is negligible.

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41.1 It will be seen that, as compared to the total outlay of Rs 824 crores provided for Education in the Fourth Plan, the outlays in the Fifth Plan recommended by the Task Forces amount to Rs 3043 crores. The outlay for Education indicated in the Approach to the Fifth Plan, is however, of the order of Rs 2200 crores. Of this, about half the outlay will be needed for elementary education. The outlays recommended by the Task Forces for other sectors have been revised, as explained in the earlier section. The Steering Group notes that the outlay of Rs 2200 crores indicated for education in the Approach to the Fifth Plan was tentative and subject to revision in the light of the overall availability of resources for the Plan and the inter-sectoral priorities which had yet to be decided by the Planning Commission. For the time being, however, a provision of Rs 2200 crores could be assumed for the educational programmes in the Fifth Plan. Keeping this in view, the Steering Group broadly approves the priorities and allocational framework proposed in the earlier paragraphs. It authorises the Chairman of the Steering Group to decide, in consultation with the Ministry of Education and Social Welfare, the specific allocation of financial outlays for the different sub-sectors of the Education Plan. Even these will be subject to further review by the

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Planning Commission after the State's estimates have been received.

41.2 It may now be worthwhile comparing the likely expenditure on education by the end of the Fifth Plan with the corresponding position by the end of the Fourth Plan. The total expenditure on education at current prices increased from Rs 114.38 crores in 1950-51 to an estimated total of Rs 860 crores in 1968-69. The expenditure on education at 1973-74 prices will go up to Rs 1500 crores in 1973-74 and to Rs 2462 crores in 1978-79. The educational expenditure as percentage of the national income will rise from 3.6 in 1973-74 to 4.2 in 1978-79. The expenditure on education includes Rs 2200 crores on general and technical education, Rs 65 crores for medical education, Rs 60 crores for agricultural education and Rs 50 crores on vocational training, adding upto Rs 2375 crores as the developmental outlay for education in the Fifth Plan.

41.3 The proposed outlay of Rs 2200 crores for general and technical education could be broken up into current outlay and investment as follows:

	Sub-head	Total outlay	Investment	Current outlay
1.	Elementary Education	1030	282	748
2.	Secondary Education	300	80	220
3.	University Education	370	108	262
4.	Teacher Training	50	9	41

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5.	Social Education	50	13	37
6.	Cultural Programmes	25	10	15
7.	Other Programmes*	185	52	133
8.	Total (General Education)	2010	554	1456
9.	Technical Education	190	90	100
10.	Total Education	2200	644	1556

* Other programmes include:

(a)	Development of languages	43.00	10.00	33.00
(b)	Book Production	17.00	14.00	3.00
(c)	Physical Education, Youth Welfare and Games etc.	50.00	22.00	28.00
(d)	Libraries	10.00	6.00	4.00
(e)	Scholarships	50.00	-	50.00
(f)	Educational Planning and Administration.	15.00	-	15.00
	TOTAL :	185.00	52.00	133.00

APPENDIX I

STEERING GROUP ON EDUCATION

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Shri Kanti Chaudhuri, Joint Secretary, Ministry of Education & Social Welfare, Shastri Bhavan, New Delhi-1.	...	"
Shri V.L. Gidwani, Secretary & Employment Commissioner, Cabinet Secretariat, Sardar Patal Bhavan, New Delhi-1 (since retired).	..	"
Dr. George Jacob, Chairman, University Grants Commission, Bahadur Shah Zafar Marge, New Delhi-1.	...	"
Shri T.R. Jayaraman, Joint Secretary, Ministry of Education and Social Welfare, Shastri Bhavan, New Delhi-1.	...	"
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Dr. Mohan Sinha Mehta, President, Seva Mandir, Udaipur.	...	"

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Shri K.V. Natarajan, Chief (N&SI), Planning Commission, Yojana Bhavan, New Delhi. (now Development Commissioner, Sikkim).	...	Member
Shri M.K.K. Nayar, Joint Secretary, Planning Commission, Yojana Bhavan, New Delhi-1.	...	"
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Prof. P.K. Bose, Pro-Vice Chancellor for Academic Affairs, University of Calcutta, Senate House, Calcutta-12.	...	"
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NOTE: The Composition of the Task Forces and the Working Groups are not enclosed.

APPENDIX II

Progress of Expenditure under Education

(Rs. crores)

Sub-Head	1969-74 Fourth Plan	1969-70 Expenditure	1970-71 Expenditure	1971-72 Expenditure	1972-73 Anticipated Expenditure	1973-74 Anticipated Expenditure	% age of Anticipated Exp. to total Plan Outlay	1973-74 Approved Outlay
2	3	4	5	6	7	8	9	10
Elementary Education	254.74	16.27	25.70	45.67	70.36	158.00	67.3	
Secondary Education	118.52	12.40	18.44	27.10	37.45	95.39	80.6	
University Education	183.52	26.85	35.33	40.61	50.93	153.77	83.8	
Teacher Training	21.37	1.56	2.01	2.10	3.31	9.01	42.3	
Social Education	8.30	0.58	0.65	0.84	1.33	3.15	41.6	
Cultural Programmes	12.49	1.54	2.48	1.31	1.05	7.28	58.3	
Other Programmes	118.75	9.51	12.80	18.75	29.99	71.05	59.8	
General Education	607.29 (701.07)*	68.71	97.49	136.38	195.37	497.95	71.0	
Technical Education	125.17	18.30	19.66	21.02	24.83	83.86	68.1	
Total Education	824.64	87.01	117.15	157.40	220.20	581.81	81.7	216.25@

* The figures in parenthesis are the latest figures. The Sub-head-wise break up of these figures is, however, not available.

@ Against an outlay of Rs. 378.57 crores proposed by the Centre and States/Union Territories in their draft proposals for 1973-74, the Planning Commission have approved an outlay of Rs. 216.25 crores; the sub-head-wise break up of this outlay is not available.

APPENDIX III

Progress of Expenditure under Education - Centre and States

(Rs. crores)

Sl. No.	Head	Fourth Plan Outlay	1969-70 Expen-diture	1970-71 Expen-diture	1971-72 Expen-diture	1972-73 Anticipated	1973-74 Approved	1969-74 Anticipated
1.	2.	3.	4.	5.	6.	7.	8.	9.
	General Education							
	Centre	204.00	23.82	31.31	36.58	51.50		
	States	497.07	44.89	66.18	99.80	143.78		
	Total	701.07	68.71	97.49	136.38	195.37		
	Technical Education							
	Centre	67.00	12.37	12.80	13.51	15.13		
	States	56.17	5.93	6.86	7.51	9.75		
	Total	123.17	18.30	19.66	21.02	24.88		
	Total Education							
	Centre	271.00	36.19	44.11	50.10	66.71	55.00	252.11
	States	553.24	50.82	73.04	107.30	153.54	161.25	545.95
	Total	824.24	87.01	117.15	157.40	220.25	216.25	798.06

APPENDIX IV (a)

Likely Position of Enrolment in Classes I-V at the End of the Fourth Five Year Plan (1974)

State/Union Territories	(Enrolment in '000's) Boys	Girls	Total	Enrolment as % age of the age-group 6-11 Boys	Girls	Total
2	3	4	5	6	7	8
Andhra Pradesh	3353	2800	6153	95.4	77.3	86.5
Assam	1034	696	1730	82.3	58.6	70.8
Bihar	4010	2920	6929	101.0	52.3	77.5
Gujarat	2230	1453	3683	137.2	71.7	89.9
Haryana	851	484	1335	103.7	58.4	82.2
Himachal Pradesh	275	187	462	113.1	76.3	95.5
Jammu & Kashmir	295	157	452	88.8	49.5	69.6
Kerala	1058	1677	3735	121.4	114.6	118.1
Madhya Pradesh	2859	1337	4196	98.0	45.8	69.6
Maharashtra	4068	2883	6951	109.0	83.1	96.6
Meghalaya	82	68	150	105.1	87.2	96.2
Mysore	2265	1705	3970	108.6	85.0	96.1
Nagaland	53	29	82	132.5	90.6	113.9
Orissa	1449	1052	2501	92.6	70.5	81.8
Punjab	966	787	1653	85.8	71.1	78.7
Rajasthan	1795	695	2490	89.1	37.4	64.3
Tamil Nadu	3133	2450	5583	120.5	100.0	110.6
Uttar Pradesh	7090	4845	11935	110.6	83.3	97.6
West Bengal	3401	1950	5371	100.3	60.3	80.8
Andaman & Nicobar Islands	10	8	18	128.2	115.2	122.4
Chandigarh	17	15	32	76.6	90.3	82.5
Dadra & Nagar Haveli	6	3	9	105.3	52.6	78.9
Delhi	328	272	600	99.1	91.9	95.7
Goa, Daman & Diu	73	55	128	121.7	103.8	113.2
L.M.& A. Islands	3.5	2.5	6	140.0	113.6	127.6
Manipur	112	76	188	134.4	97.4	111.9
Arunachal Pradesh	23	7	30	67.6	24.1	47.6
Pondicherry	37	30	65	127.6	100.0	114.0
Tripura	107	85	192	82.3	71.4	77.1
	41502.5	27077.5	68580	102.9	71.9	87.9

APPENDIX IV (b)

Likely Position of Enrolment in Classes VI-VIII at the end of the Fourth Plan (1974).

S. No.	State/Union Territory	Enrolment (in 000's) Boys	Girls	Total	Enrolment as Percentage of Population Boys	Girls	Total
1	2	3	4	5	6	7	8
1.	Andhra Pradesh	534	286	820	33.0	18.2	25.7
2.	Assam	310	187	497	48.5	30.2	39.5
3.	Bihar	1069	250	1319	46.4	11.1	29.0
4.	Gujarat	622	316	938	56.9	33.5	46.0
5.	Haryana	310	100	410	73.1	26.2	50.9
6.	Himachal Pradesh	119	52	171	94.7	41.4	68.1
7.	Jammu & Kashmir	105	40	145	58.2	24.7	42.4
8.	Kerala	650	570	1220	80.0	71.8	75.7
9.	Madhya Pradesh	710	237	947	41.5	14.6	28.4
10.	Maharashtra	1180	678	1858	50.4	36.0	48.0
11.	Meghalaya	22	16	38	55.0	39.0	45.9
12.	Mysore	620	355	975	53.9	32.1	43.2
13.	Nagaland	17	10	27	81.7	53.8	68.5
14.	Orissa	433	152	585	57.9	18.6	38.5
15.	Punjab	375	201	576	65.8	39.5	53.4
16.	Rajasthan	500	140	640	46.6	14.0	30.9
17.	Tamil Nadu	1150	633	1783	78.2	45.1	62.0
18.	Uttar Pradesh	1615	438	2055	45.7	13.8	30.7
19.	West Bengal	893	500	1393	40.4	28.8	39.3
20.	Andaman & Nicobar Islands	2.80	1.70	4.50	40.0	47.2	60.0
21.	Chandigarh	7.20	6.20	13.40	61.0	67.4	63.8
22.	Dadra & Nagar Haveli	1.00	0.46	1.46	38.5	17.0	27.5
23.	Delhi	157	118	275	89.7	77.1	83.8
24.	Goa, Daman & Diu	25.50	17	42.50	77.3	56.7	67.5
25.	L.M. & A. Islands	0.93	0.37	1.30	70.5	33.9	52.4
26.	Manipur	25.60	12.60	38	58.0	29.8	44.2
27.	Arunachal Pradesh	3.00	1.50	4.50	16.9	9.0	13.1
28.	Pondicherry	13.40	7.80	21.20	89.9	50.0	67.9
29.	Tripura	32	24	56	52.5	40.7	46.7
	Total:	11582.33	5404.53	16986.86	52.9	26.3	40.0

APPENDIX V

District-wise Education Disparities - 1966

State/District	Enrolment as Percentage of Population in the Age-Group 6 - 11			11 -14		
	Boys	Girls	Total	Boys	Girls	Total
1	2	3	4	5	6	7
Andhra Pradesh						
i) State Average	91.1	61.9	76.5	36.5	13.5	25.0
ii) Guntur	113.5	95.6	104.6	47.0	20.0	33.6
iii) Karimnagar	67.3	22.3	44.6	29.6	4.9	17.2
Assam						
i) State Average	89.6	55.6	72.5	43.4	21.1	32.2
ii) Kamrup	99.8	57.1	78.5	53.2	21.5	37.6
ii) Lakhimpur	77.3	40.3	63.5	39.3	20.5	30.3
Bihar						
i) State Average	81.2	27.0	54.3	31.4	5.4	18.7
ii) Patna	95.1	40.2	68.4	40.0	11.1	26.1
iii) Purnea	64.8	23.0	43.5	19.5	3.8	12.0
Gujarat						
i) State Average	101.3	62.2	82.4	46.4	22.7	34.9
ii) Ahmedabad	117.5	86.0	102.5	66.4	44.2	55.8
ii) Banaskantha	68.0	18.8	44.2	19.1	2.9	11.3
Haryana						
i) State Average	68.4	30.3	50.7	41.8	12.5	28.4
i) Rohtak	93.0	45.4	71.4	64.5	17.1	42.4
i) Jind	24.1	5.6	15.5	10.7	2.0	6.8
Jammu & Kashmir						
i) State Average	75.6	27.8	52.7	49.0	21.6	36.4
i) Jammu	93.5	43.8	69.6	68.0	31.6	50.9
i) Poonch-Rajouri	57.4	16.3	37.5	25.7	6.3	17.2
Kerala						
i) State Average	119.4	116.6	115.6	71.2	57.9	64.6
i) Alleppy	123.8	111.5	117.8	89.2	78.1	84.1
i) Palghat	104.1	95.5	100.0	48.1	30.5	39.3

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Appendix V (Contd.)

1	2	3	4	5	6	7
8. Madhya Pradesh						
i) State Average	N.A.	N.A.	55.9	N.A.	N.A.	22.5
ii) Indore	N.A.	N.A.	85.4	N.A.	N.A.	47.9
iii) Jhabua	N.A.	N.A.	31.4	N.A.	N.A.	8.3
9. Maharashtra						
i) State Average	107.2	70.0	87.1	54.8	23.0	39.9
ii) Greater Bombay	91.6	106.7	97.9	70.2	70.9	70.5
iii) Parbhani	88.4	39.1	61.1	41.2	6.9	24.6
10. Mysore						
i) State Average	100.2	77.9	89.3	33.4	15.3	24.9
ii) North Kanara	114.0	103.7	109.0	30.3	23.7	31.2
iii) Raichur	85.5	43.6	64.8	16.0	3.2	10.6
11. Orissa						
i) State Average	94.7	47.7	70.8	31.6	16.6	18.9
ii) Balasore	114.2	72.4	93.2	40.5	8.5	24.3
iii) Kalahandi	75.1	24.8	49.2	13.3	1.5	7.2
12. Punjab						
i) State Average	84.7	64.4	75.2	44.6	22.6	34.3
ii) Hoshiarpur	112.6	90.5	102.8	70.0	28.0	50.4
iii) Bhatinda	58.7	38.6	49.3	28.7	13.9	21.8
13. Rajasthan						
i) State Average	75.4	23.4	50.3	33.7	6.1	19.8
ii) Ajmer	89.3	47.0	68.8	42.7	19.7	31.5
iii) Barmer	48.7	8.0	28.8	13.9	1.0	7.7
14. Tamil Nadu						
i) State Average	118.4	86.0	102.4	61.4	29.9	45.8
ii) Madras Corporation	109.8	116.8	113.1	83.9	69.9	77.3
iii) Ramanadhapuram	99.0	74.6	86.8	55.1	21.4	35.8

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APPENDIX VI

Fifth Plan of Technical Education - Programme and Outlays.

(Rs. crores)

Programmes	Outlay	PRIORITY I	II	III
1	2	3	4	5
I. CENTRAL SCHEMES				
1. Indian Institute of Technology and Indian Institute of Science.	18.0	15.0	3.0	-
2. Indian Institutes of Management	8.0	6.0	2.0	-
3. Regional Technical Teachers' Training Institutes.	5.0	4.0	1.0	-
4. Regional Engineering Colleges.	9.0	9.0	-	-
5. National Institute for Foundry & Forge Technology	1.0	1.0	-	-
6. National Institute for Training in Industrial Engineering.	1.0	1.0	-	-
7. Indian School of Mines.	1.0	0.5	0.5	-
8. School of Planning & Architecture.	1.0	1.0	-	-
9. Centre for Industrial Design.	1.0	0.5	0.5	-
10. National Council for Science Education.	2.0	0.8	0.7	0.5
11. Faculty development, curriculum design and Instructional materials, etc.	8.0	6.0	2.0	-
12. (i) Post-graduate courses and research	9.0	8.0	1.0	-
(ii) R & D Projects	35.0	-	-	35.0
13. Apprenticeship Training of graduates & diploma holders.	11.0	6.0	5.0	-
14. Planning, information processing and monitoring unit.	0.5	0.5	-	-
15. Upgrading selected engineering colleges, Centres of advanced studies & research.	30.0	5.0	15.0	10.0
	140.5	64.8	30.7	45.0

1	2	3	4	5
II. CENTRALLY SPONSORED SCHEMES				
(i) Consolidation and Development				
16. Development of Government engineering colleges and polytechnics including buildings, laboratories, workshops, staff and student amenities, staff quarters and campus facilities.	30.0	30.0	-	-
17. Diversification and reorganisation of diploma level courses.	30.0	30.0	-	-
18. Development of non-government engineering colleges and polytechnics.	4.0	4.0	-	-
19. Development of facilities for education in Art, Commercial Practice, Pharmacy, etc.	1.0	1.0	-	-
20. Establishment of Science and Technology Museums in technical institutions.	3.0	1.0	1.0	1.0
Total:	68.0	66.0	1.0	1.0
(ii) Qualitative Improvement and Special Studies				
21. Training of teachers for technical institutions.	5.0	5.0	-	-
22. Modernisation of laboratories & workshops.	20.0	10.0	5.0	5.0
23. Revision of staff structure in engineering colleges and polytechnics including training reserves.	30.0	10.0	10.0	10.0
24. Development of Sandwich courses, extension services and further education.	18.0	18.0	-	-
25. Loans for construction of students' hostels.	4.0	4.0	-	-
26. Preparation & publication of text books.	0.5	0.5	-	-
27. Scholarships for polytechnic students.	8.0	8.0	-	-
28. Development of Management education other than Institutes of Management.	3.0	1.5	1.0	0.5
29. Development of Regional Institutes of Printing.	0.5	0.5	-	-
30. Planning units and strengthening of State Directorate of Technical Education and State Boards of Technical Education.	2.5	2.5	-	-
Total:	91.5	60.0	16.0	15.5
GRAND TOTAL:	300.0	199.3	47.7	62.0