

IN INDIA



सत्यमेव जयते

NEW DELHI

NOVEMBER 1973

P R E F A C E

I have great pleasure in presenting the report of the National Committee on 10+2+3 Educational Structure.

In pursuance of the recommendations of the Indian Education Commission of 1966, the 10+2+3 structure was incorporated in the National Policy Statement on Education which was issued by the Central Government in 1968. The same structure has since been considered and endorsed by a number of all India forums including the Central Advisory Board of Education, of which every State Education Minister is a member.

The present Committee has been, under its terms of reference, required to formulate practical measures for introducing the proposed educational structure all over the country and to estimate the expenditure involved. In attending to these assignments the Committee has inter alia examined the impact of the proposed structure on curriculum at the school and collegiate stages and on the teaching community. It has also considered the question relating to the location of the new classes XI & XII and has suggested some guidelines for the selection of schools for being upgraded. The Committee has further indicated a list of preparatory measures to be undertaken before introducing the new structure and has listed the conditions considered essential for the success of the structure. The latter include delinking of the requirement of a university degree with bulk of the jobs and ensuring adequate wages for those who have pursued vocational education instead of obtaining a university degree.

The Committee has noted that the suggested structure will give rise to several advantages of great significance to Indian education. It will mean a broadly uniform educational pattern all over the country. This in turn will further promote

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national integration and will solve several educational problems of the people with minority languages. Such problems exist today in practically every State and Territory inspite of the linguistic reorganization of the country. The uniform structure will also facilitate the production of teaching material and educational aids, improve their quality, and reduce their price.

The proposed structure will strengthen the country's school system of education, which has been repeatedly decried as the weakest link in the educational chain. This structure will send maturer and more knowledgeable students to universities, including technical and professional institutions of university level.

It will provide for a distinct stage of higher secondary or junior college education where the pupils can be, according to their interest, aptitude and choice, either prepared for higher education or trained for jobs through specific vocational courses. The latter courses are to emphasize the training part so that the successful leaver is ready to enter the world of work either as an employee or as a self-employed person. These courses are to concentrate on non-engineering subjects and are, therefore, to be treated to supplement the on-going vocational education at school level through the Industrial Training Institutes, Polytechnics and other Vocational Institutions.

The suggested structure will, above all, contribute to raise the standard of education at all stages. This objective should, in fact, be constantly borne in mind, so that the change in structure instead of being a means to an end does not become an end in itself. The opportunity to introduce a new educational structure should be fully utilized to modernize and upgrade the current syllabi at both the school and collegiate levels.

The 3-year degree course part of the proposed structure has already been in existence for more than

a decade in, all parts of the country except the University of Bombay and the State Universities of Uttar Pradesh. Since 1971 the Universities of Bihar have gone back to the 2-year degree course. The 10+2+3 educational structure has already been introduced by the States of Andhra Pradesh, Kerala and Mysore. West Bengal has decided to replace the existing 11-year higher secondary system by the 10+2 structure from the academic session commencing on 1st January 1974. Assam, Gujarat and Maharashtra too have introduced new courses leading to public examinations at the end of ten and twelve years of schooling. The school structure in Uttar Pradesh is already of the 10+2 type. The Central Board of Secondary Education, to which are affiliated all government and aided schools of Delhi and several other Union Territories, all Kendriya Vidyalayas (Central Schools), all Sainik Schools, most of the public schools, and many convent and other all-India schools, has also decided to introduce the proposed structure from the next academic session. The other States are reportedly awaiting the results of the work of the present Committee before processing the matter further at their ends.

The Committee has had the privilege of consultations and discussions with a number of Vice-Chancellors, Principals and teachers of colleges and schools, Chairmen and members of the State level Committees relating to the same structure, authorities of professional education, planners, educationists and social workers. It also visited some educational institutions for an on-the-spot study of the problems. It is important to mention that the observations, conclusions and recommendations contained in the report are based on these discussions and consultations and on a joint thinking of the State and Union Territory Education Secretaries who were members of the Committee and several other State Education Secretaries who attended one or more meeting(s) of the Committee as special invitee(s). This fact gave great

significance to the deliberations of the Committee and strengthened its efforts at keeping the practicability of its recommendations continuously in the focus.

As regards the financial implications of the programmes, the Committee has estimated that while the expenditure on the introduction of the structure during the fifth plan in all parts of the country may be about Rs.60 crores, there will, during the sixth and subsequent plan periods, be a saving of at least Rs.100 crores per plan in the expenditure on higher education. Moreover, the proposed structure would contribute to improve national productivity and provide gainful work to a sizable proportion of the educated youth. In view of these and other benefits already mentioned, it is hoped that the financial requirements of the scheme will not stand in the way of an effective introduction of the suggested structure in all parts of the country.

We are sincerely grateful to the Union Education Minister and the Secretary and other officers of the Central Ministry of Education & Social Welfare for their interest in the work of the Committee. We are also thankful to all the State Governments and Union Territory Administrations for their willing cooperation with the Committee. We should like to put on record our grateful thanks to the Ministers of Education of various States and all distinguished persons who were good enough to let the Committee have the benefit of their views and suggestions.

I should specially like to thank my colleagues on the Committee for their very constructive participation in its deliberations.

The members of the Committee and its Chairman express sincere appreciation of all the assistance and help given by the Member-Secretary of the Committee as well as his staff in the Central Board of Secondary Education.

New Delhi
November 17, 1973

P. D. SHUKLA
Chairman

Government of India
Ministry of Education & Social Welfare
NATIONAL COMMITTEE ON 10+2+3 EDUCATIONAL STRUCTURE

M E M B E R S

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| 1. | Dr. P. D. Shukla | Chairman |
| 2. | Shri R. C. Pant,
Special Secretary (Education),
Uttar Pradesh | Member |
| 3. | Shri Mohinder Singh,
Education Commissioner,
Rajasthan | " |
| 4. | Shri D. K. Guha,
Education Commissioner,
West Bengal | " |
| 5. | Shri K. K. Srivastava,
Chief Secretary and
Secretary (Education),
Delhi Administration
(Shri D. S. Misra, Additional
Secretary (Education) upto
September, 1973) | " |
| 6. | Shri K. Diraviam,
Education Secretary,
Tamil Nadu | " |
| 7. | Smt. S. L. Singla,
Education Secretary,
Gujarat
(Shri S. M. Dudani,
ex-Education Secretary,
Gujarat upto August 1973) | " |
| 8. | Shri A. K. Chowdhury,
Education Secretary,
Assam | " |
| 9. | Shri Samuel Appaji,
Education Secretary,
Mysore | " |
| 10. | Dr. T. N. Dhar,
Joint Director (Education),
Planning Commission,
New Delhi
(Shri A. H. Hemrajani,
ex-Director (Education),
Planning Commission
upto January 1973) | " |
| 11. | Dr. R. P. Singhal,
Secretary,
Central Board of Secondary Education,
New Delhi | Member-Secretary |

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CHAPTER I

I N T R O D U C T I O N

The Education Commission (1964-66)

1.1 The Education Commission of India (1966) emphasized that there is a direct link between education, national development and prosperity and stated that this can be possible only when the national system of education is properly organized both qualitatively and quantitatively. The Commission also pointed out that the existing system of education was largely unrelated to life, needs and aspirations of the people and there was a wide gulf between its content and purposes and the concerns of national development.* Realising that the total period of educational course and the duration of its different stages have a direct bearing on the quality of the education imparted, it recommended a broadly uniform pattern of education and an extension in the total period of schooling to bring about a general rise in the standards of attainment.

1.1 The Commission visualized a flexible educational structure covering

- a pre-school stage of one to three years;
- a primary stage of seven or eight years divided into two sub stages - a lower primary stage of four or five years and a higher primary stage of three years;
- a lower secondary or high school stage of three or two years in general education or of one to three years in vocational education;
- a higher secondary stage of two years of general education or one to three years of vocational education;
- a higher education stage having a course of three years or more for the first degree and followed by courses for the second or research degrees of varying durations.

The 1968 National Policy Statement on Education

1.3 Bearing in mind the recommendations of the Indian Education Commission, the Government of India

*(Report of the Education Commission (1964-66), Govt. of India, Ministry of Education - paras 1.16 and 1.18).

issued in 1968 a National Policy Statement on Education for the country. In this statement, the Government of India stated that it was convinced that "a radical reconstruction of education on the broad lines recommended by the Education Commission is essential for economic and cultural development of the country, for national integration and for realising the ideal of a socialistic pattern of society. This will involve a transformation of the system to relate it more closely to the life of the people; a continuous effort to expand educational opportunity; a sustained and intensive effort to raise the quality of education at all stages; an emphasis on the development of science and technology; and the cultivation of moral and social values. The educational system must produce young men and women of character and ability committed to national service and development. Only then will education be able to play its vital role in promoting national progress, creating a sense of common citizenship and culture, and strengthening national integration. This is necessary if the country is to attain its rightful place in the comity of nations in conformity with its great cultural heritage and its unique potentialities."

1.4 The Policy statement also stated that it will be advantageous to have a broadly uniform educational structure in all parts of the country. The ultimate objective should be to adopt the 10+2+3 pattern.

The CABE Committee on Educational Structure and Vocationalization

1.5 The proposed transformation of education was not an easy task as it was full of administrative, financial and other practical difficulties. The keenness of the Government of India, however, to bring a change in the educational system of the country is reflected in the deliberations of the various committees, seminars and conferences which were subsequently convened at various levels for implementation of the National Policy on Education.

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There was, for instance, a Conference of the Education Secretaries and Directors of Education of the States and Union Territories on 4th and 5th May 1972 in Delhi. Since there was a move in some States to reduce the 3-year degree course to 2 years, the Conference decided that status-quo should be maintained until the Central Advisory Board of Education met next. The 36th Session of the Central Advisory Board of Education was held in Delhi on 18th and 19th of September 1972; and earlier to that, the following resolution was passed at a meeting of the Committee appointed by the Central Advisory Board of Education on Educational Structure and Vocationalization held on 10th September, 1972:-

- "(i) It would be desirable to adopt a uniform pattern of education, i.e., 10+2+3 in all parts of the country by the end of the Fifth Five Year Plan. The Union Ministry of Education and Social Welfare should take up this matter for detailed discussions with all the State Governments and the University Grants Commission. In the light of these discussions, a detailed proposal, with estimates of costs, may be formulated and brought before the next meeting of the Board for taking a final decision.
- (ii) Vocationalization of the secondary stage is an essential and urgent reform. The programmes to be prepared for this purpose will have to be based upon detailed manpower estimates formulated on the basis of district surveys. They will also involve the use of the latest educational technology and the latest teaching methods in vocational training. The Board requests the Chairman to set up a Group of Experts to work out the detailed proposals for vocationalization of the secondary stage, suitable for different conditions, and to make them available to the State Governments for necessary action. The programmes will have to be developed in close collaboration between the Ministries of Education, Health, Labour, Agriculture, Industrial Development, etc. and suitable coordinated machinery for this purpose will have to be created at the Centre, State and District levels."

The Conference of Education Secretaries & DPIs

1.6 Before the Central Advisory Board of Education could meet, there was another Conference of Education Secretaries and Directors of Public Instruction on 15th and 16th September, 1972, which passed the following resolution:-

"Adoption of a uniform pattern of school and college classes (10+2+3)

- (1) A uniform pattern of education of 15 years duration leading to the first-degree should be adopted by all the States.
- (2) Whether there is an addition of one year to the school and college classes, or whether it involves merely a restructuring of the pattern, additional expenditure will necessarily have to be incurred on the scheme for which massive Central assistance will be necessary.

Secondary Education

- (1) There should be very close co-ordination between the vocational courses attached to the higher secondary stage, the Industrial Training Institutes and the Polytechnics. Courses selected should have close affinity to the skills and services in demand in the locality. This will involve manpower studies and market surveys and setting up of workshops and production centres as well as financing of the skilled personnel on co-operative or institutional patterns for self-employment or employment in production centres.
- (2) The scheme of vocationalization of education as well as work experience deserves highest priority in the Plan and should be assisted fully.
- (3) Vocational courses prescribed in the institutions would need constant review and replacement as technology, materials and demands change. They would have to keep pace with development of local industries also, particularly the small scale, cottage and consumer industries."

The 1972 session of Central Advisory Board of Education

1.7 The Central Advisory Board of Education in its meeting held on 18th and 19th September, 1972 under the Chairmanship of Prof. S. Nurul Hasan, Union Minister of Education & Social Welfare & Culture passed the

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following resolution:-

"The Board reit rates its earlier recommendation made in the 34th meeting that it is desirable to adopt a uniform pattern of education, viz., 10+2+3, in all parts of the country. It notes with satisfaction that three States have implemented the programme and recommends that it should be implemented in all parts of the country by the end of the Fifth Plan. The Ministry of Education and Social Welfare should take up this matter with the State Governments and the University Grants Commission for working out the details.

In the opinion of the Board, vocationalization of the secondary stage is an essential and urgent reform. The programmes to be prepared for this purpose will have to be based upon detailed manpower estimates formulated on the basis of district surveys. They will also involve the use of the latest educational technology and the latest teaching methods in vocational training. The Board requests the Chairman to set up a group of Experts to work out the detailed proposals for vocationalization of the secondary stage, suitable for different conditions and to make them available to the State Governments for necessary action. The programmes will have to be developed in close collaboration between the Ministries of Education, Health, Labour, Agriculture, Industrial Development, etc. and suitable co-ordinating machinery for this purpose will have to be created at the Centre, State and District levels."

The National Committee on 10+2+3 Educational Structure

1.8 Almost simultaneously the Government of India, Ministry of Education & Social Welfare appointed a National Committee under the Chairmanship of Dr.P.D.Shukla with the following terms of reference:-

- i) To suggest practical steps to be taken for implementation of the uniform pattern of 10+2+3 for the school and college classes in all States and Union Territories of the country.
- ii) To estimate the cost of implementing the programme.

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The Committee consisted of the following persons vide D.O. letter No.1-18/72/PR-II dated 20th August, 1972 sent by Shri J.Veeraraghavan, Director (IF & P), Government of India, Ministry of Education & Social Welfare to all the State Governments and Union Territory Administrations (Appendix '1'). The composition of the Committee was as under:-

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|---|------------------|
| 1. Dr.P.D.Shukla | Chairman |
| 2. Education Secretary,U.P.
(represented by Sh.R.C.Pant,
Special Secretary (Education)) | Member |
| 3. Education Secretary,
Rajasthan (Sh.Mohinder Singh) | " |
| 4. Education Secretary,
West Bengal (Sh.D.K.Guha) | " |
| 5. Education Secretary, Delhi
(represented by Sh.D.S.Misra,
Director of Education, Delhi) | " |
| 6. Education Secretary,
Tamil Nadu (Sh.K.Diraviam) | " |
| 7. Education Secretary,
Gujarat (Sh.S.M.Dudani) | " |
| 8. Education Secretary, Assam
(Shri A.K.Chowdhury) | " |
| 9. Education Secretary, Mysore
(Shri Samuel Appaji) | " |
| 10. Director (Education),
Planning Commission, New Delhi
(Shri A.H.Hemrajani w.o.f. Aug., 1972
to 31.1.1973 - date of his retirement
and Dr.T.N.Dhar, Joint Director
(Education) w.o.f. April, 1973 to date) | " |
| 11. Dr.R.P.Singhal, Secretary,
Central Board of Secondary Education,
New Delhi | Member-Secretary |

1.9 The said letter further mentioned that if for any reason it was difficult for an Education Secretary to participate in the meetings of the National Committee, he could nominate the D.P.I. or any other senior officer of the department conversant with the problems relating to the introduction of the new pattern to represent him on the Committee.

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1.10 While constituting the aforesaid Committee, the Government of India had classified the States and Union Territories into different groups on the basis of the existing pattern of education and gave representation to each group on the Committee.

1.11 To facilitate the work of the Committee those Education Secretaries who were not members of the Committee were also invited to attend its meeting(s) whenever necessary so as to have their views on the implementation of the new pattern in their respective States. In some cases, the Chairman of the Committee held meetings with the Education Secretary and other senior officers in the State itself and reported the views of the State Government to the National Committee at its next meeting. From a few Governments written reports were invited and received about the thinking that was going on in their States. In this way, the Committee ensured as large a participation as possible of the representatives of all the States and Union Territories in the deliberations of the Committee.

1.12 The Committee also issued a questionnaire to all the State Governments and Union Territory Administrations eliciting information on various matters relating to the work of the Committee. A copy of the questionnaire is appended to the Report.

1.13 The Committee held the following meetings:-

	<u>Place</u>	<u>Dates</u>
First Meeting	Delhi	29th September, 1972
Second Meeting	Bangalore	27th & 28th Oct., 1972
Third Meeting	Bombay/ Poona	5th, 6th and 7th December, 1972
Fourth Meeting	Calcutta	20th and 21st February, 1973
Fifth Meeting	Ahmedabad	17th, 18th and 19th April, 1973
Sixth Meeting	Delhi	6th & 7th September, 1973
Seventh Meeting	Madras	1st, 2nd & 3rd November, 1973

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Joint Meeting with State Committees

1.14 During the course of its sittings in Bombay and Ahmedabad the Committee took the opportunity of having joint meetings with the State Committees appointed by the Governments of Maharashtra and Gujarat on the implementation of 10+2+3 pattern in these States. The Committee also met a number of educationists including the Vice-Chancellors and other distinguished persons connected with education in various States. A list of those persons is given at the end of the Report. The Committee was happy to have benefited from the views expressed by them before it.

Philosophy and purpose of the New Structure

1.15 It was not necessary for the Committee to go into the merits and demerits of the proposal to introduce a broadly uniform educational structure of 10+2+3 in all the States and Union Territories as this matter had already been discussed and thrashed out in various all-India forums. As stated above, all these forums had repeatedly emphasized the urgency of implementing the new pattern. However, it may be worthwhile summarizing the philosophy and purpose of the proposed structure. They include the following considerations:-

- i) A broadly uniform pattern all over the country will strengthen national integration.
- ii) The proposed structure will rationalise and strengthen school education. This strengthening has been recommended by practically all Committees, Commissions and other organisations in our country.
- iii) It will send more knowledgeable and maturer students to the universities.
- iv) It will reduce pressure for admission on universities and other centres of higher education.
- v) It will provide an opportunity and a means to introduce appropriate vocationalisation at the higher secondary stage.

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- vi) It will provide an opportunity and a means to modernize and strengthen school and college curricula and to re-structure them on more scientific lines as well as to serve the social and economic needs of the adolescents and youth in a better manner.
- vii) A broadly uniform pattern in all States and Union Territories will facilitate implementation of educational programmes, production of books and reading materials and teaching aids, training of teachers and their movement, reconstruction of syllabi, and improvement in examination practices.
- viii) It will remove difficulties in the matter of education of children of the mobile population, which is continuously increasing in the country.
- ix) It will help to solve educational problems of the minorities at least in two ways: (a) the minority language books produced in one area can be easily used in all other concerned areas, and (b) the schools adopting the minority languages as media of instruction in any State or Union Territory can be considered for affiliation to a Board of Secondary Education outside that State or Territory. The latter arrangement should reduce administrative costs and difficulties of some of the State Boards.
- x) It will do away with the criticism that is generally levelled against the present higher secondary system that the students are required to take a decision at too early an age about the particular stream to be studied by them.
- xi) It will contribute to raise the general standard and quality of education at all stages - school and university.

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CHAPTER II

EXISTING STRUCTURES IN STATES/UNION TERRITORIES

2.1 Prior to the setting up of the National Committee on 10+2+3 Educational Structure, the States/Union Territories were following different patterns as mentioned below against each. Broadly speaking, there were two groups. The first group consisted of States and Union Territories where a period of 15 years or more was required to obtain the first degree in general education, and the second group consisted of those States and Union Territories where the first degree in general education could be obtained in 14 years.

Group I (15 years)

Andhra Pradesh	(10+2)+3
Assam	(12+1 & 13)+3
Bihar	(11+1 & 12)+3
Gujarat	(11+1)+3
Kerala	(10+2)+3
Nagaland	(12+1)+3
Maharashtra (Western Region including Bombay City)	(11+2)+2
Meghalaya	(12+1)+3
Mysore	(10+2)+3
Orissa	(11+1)+3
Tamil Nadu	(11+1)+3
Pondicherry	(11+1)+3
Arunachal Pradesh	(12+1 & 13)+3 one school only;
Goa	(11+2)+2 and 11+3 (one school only)

Group II (14 years)

Haryana	(10+1 & 11)+3
J & K	(10+1 & 11)+3
Madhya Pradesh	(11)+3
Maharashtra (Marathwada & Vidharba Regions)	(10+1 & 11)+3
Punjab	(10+1 & 11)+3
Rajasthan	(10+1)+3
West Bengal	(10+1 & 11)+3
Uttar Pradesh	(10+2)+2
Himachal Pradesh	(10+1 & 11)+3
Delhi	11+3
Chandigarh	(10+1 & 11)+3
A & N Islands	11+3
Manipur	(10+1 & 11)+3
Tripura	(10+1 & 11)+3

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2.2 It will be noted that except the State Universities of U.P. and the University of Bombay, the degree course everywhere else was of 3 years' duration. In the Central Universities of Aligarh and Banaras also, located in U.P., the degree course was of 3 years. The pattern of high/higher secondary education varied widely in different States and Territories. The States of Andhra Pradesh, Kerala and Mysore had already adopted the new structure of 10+2+3.

The latest position State-wise

2.3 The position as has come to the notice of the National Committee regarding steps taken by each State or Union Territory to switch over to the new pattern of 10+2+3 is summarized in the following paragraphs:-

Andhra Pradesh

In Andhra Pradesh, the introduction of 10+2+3 pattern was completed by the end of academic session 1972-73. The Government is now busy consolidating the various steps in this direction and planning to introduce vocational courses in the two-year stage of higher secondary education. As an interim measure, the 2-year Pre-University course is with both the schools and the colleges, but it has been decided to have this course ultimately in separate institutions only. A Board of Intermediate Education has already been set up and committees have been appointed to formulate new courses. The Universities of the State have been duly involved in the matter. (Appendix 2).

Assam

On 1st June 1972, the Government of Assam decided by a resolution to switch over to the new pattern of 10+2+3, and it introduced the same from 1st January, 1973.

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In order to expedite the change over from the 16-year pattern to the 15-year pattern, certain school classes have been telescoped. In class V, from 1st January 1973, there are two sections in each school. One of these sections consists of students who were promoted from class IV and the other of those who have come direct from class III. For the latter category of students there is an accelerated programme of instruction which will be spread over 3 years, so that at the end of class VIII the students who have dropped one class will come at par with the students of the other category. Similarly, in class VIII, from 1st January 1973, there are two sections in each school. The students passing both classes VI and VII at the end of 1972 have been promoted to class VIII. Provision has been made for an accelerated programme of instruction for those who come from class VI. Necessary syllabi and textbooks to suit the new classes V and VIII have been prepared and introduced. Thus change over to the 12-year school will be completed in 1977.

A graphic picture of the manner in which some classes have been telescoped to meet the requirements of the new educational structure in the State is given on page 13.

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PLAN FOR CHANGE-OVER TO 12 YEAR SCHOOL SYSTEM IN ASSAM

[illegible]

From 1st July, 1972, a 2-year PUC has also been introduced in Assam. The Government of Assam has taken a policy decision that the 2-year stage, i.e. the new classes XI and XII should be located in schools. But keeping in view some practical difficulties, these classes are for the present allowed to continue in higher secondary schools as well as colleges by maintaining status-quo. The Assam Board of Secondary Education, to which the Higher Secondary classes are to be affiliated, has resolved that till it prepares its own syllabi and text-books the PUC syllabus and textbooks as prepared by the two universities (Gauhati & Dibrugarh) will be adopted for the new higher secondary classes XI & XII. The Board will conduct examination at the end of class XII when the new XI & XII classes are located in schools.

Except Agriculture, no vocational courses have yet been introduced in classes XI & XII. So far as the degree stage is concerned, decision has been taken to continue with the 3-year course in both the Universities of Assam. The university authorities have been requested to reorganize their courses in accordance with the new educational structure and introduce them w.e.f. 1974.

Bihar

The State Government have not yet formally decided to introduce the 10+2+3 educational structure. They have, however, agreed in principle to the proposal to introduce 10-year pattern for high school education, and retain the existing class I as a Pre-Primary class.

Last year (1972), the Government of Bihar switched over to 2-year degree course. Hence the current structure in the State is 11-year high school, 2-year Intermediate or PUC, and 2-year degree course. The age of admission to class I is 5 plus. The 2-year Intermediate or Higher

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Secondary is proposed to be introduced in selected high schools too during the Fifth Plan. The suggested structure of 10+2+3 is also proposed to be borne in mind in drawing up a plan for replacing the single teacher primary schools by multiple teacher schools during the Fifth Plan.

The question of re-change over of the degree course to 3 years is also being considered by the State Government in consultation with the university authorities and, if necessary, with the U.G.C.

Gujarat

The question of the revised pattern was discussed in a joint meeting of the State Advisory Council of Education and the State Advisory Council for Higher Education on 18.6.1972. The consensus of opinion of the joint meeting was in favour of acceptance of 10+2+3 pattern. The joint meeting recommended the appointment of a committee to work out the details of the pattern. Accordingly, the Government of Gujarat vide G.R. Education and Labour Department No. ED/5072/59935-B dated 25.1.1973 has appointed a committee under the Chairmanship of the Education Secretary (Shri S.M. Dudani) of the State to study the problem of 12-year pattern and make recommendations to the Government. The committee has already had a few meetings. There was also a joint meeting of the National Committee with the State Committee in Ahmedabad.

As one of the measures towards the introduction of the 10+2+3 pattern in the State, the State Government has revised the syllabus for Standards I to VIII. The revised syllabus for Standards I to VII has already been implemented in the State. The new syllabus for Standard VIII is being introduced in the current academic session beginning in June 1973. The first S.S.C. Examination under the 10-year school system will be held in March 1976.

Himachal Pradesh

The Government of Himachal Pradesh has accepted the new pattern in principle. No formal decision has yet been taken regarding the year from which the new structure will be introduced. The Government has set up a committee under the chairmanship of the Education Minister to go into the details with regard to the introduction of the new pattern in the State.

Jammu & Kashmir

The Government of Jammu & Kashmir had appointed a committee under the Chairmanship of Shri Bhagwan Sahay, Governor, for re-appraisal of the present educational policies of the State. The committee has recently submitted its recommendations, according to which the primary and middle school education should cover a period of 8 years (classes I to VIII) and the secondary stage of education should be spread over 4 years (classes IX to XII). The committee has recommended that the secondary schools should be of 3 types - (a) vocational schools which should have a course of 2 years, (b) general schools which should provide education in classes IX & X, and (c) fullfledged secondary schools having classes IX to XII. This involves the transfer of PUC and the first year of the three-year degree course from colleges to secondary schools. At the university stage, the committee has recommended that there should be an Honours course of three years and a pass-course of 2 years. A number of vocational subjects should also be introduced in the Pass-Course to prepare students for different walks of life. As regards the year from which the State will change over to the new pattern, the final decision is yet to be taken by the Government of Jammu & Kashmir.

Kerala

The State has already adopted the pattern of 10+2+3. Its schools system consists of 10 classes. There is a pre-degree course of 2 years duration followed by a 3-year degree course. Classes XI & XII are part of colleges affiliated to the universities. The vocationalization is proposed to be introduced in the new classes XI & XII. (Appendix 3).

Madhya Pradesh

The new pattern of 10+2+3 has been formally accepted by the Government of Madhya Pradesh. No decision has yet been taken about the year from which it will be introduced in the State.

Maharashtra

The Government of Maharashtra has decided to adopt 10+2+3 pattern. The 10-year S.S.C. pattern has already been introduced in place of the 11-year S.S.C. and a

new syllabus has accordingly been commenced in class VIII from June 1972. The first batch of students will appear at the 10-year S.S.C. examination in March, 1975. The State Government has decided that till the restructuring is in process no new school and college will be started on the traditional pattern.

While the Vidharbha and Marathwada divisions of Maharashtra have 11-year higher secondary schools as well as 10-year high schools followed by PUC and/or 3-year degree course, the other division, viz., Western Maharashtra has 11-year S.S.C. (High School) followed by two-year Intermediate and two-year degree course. With the introduction of the new structure, there will be a uniform pattern in all the divisions of the State.

The Maharashtra Government has set up a committee under the Chairmanship of the State Education Secretary, Dr. A. U. Shaikh, vide its resolution No. ECR-1072-R(I) dated 31st August, 1972. The committee has set up several study groups on vocationalization of secondary education. A review of the ITI's in the State is also being undertaken.

The State Government is considering the desirability of having new classes XI and XII attached to the school system. As an experimental measure, two High Schools of Poona have been upgraded to have 2-year PUC classes. The University of Poona is conducting a public examination both at the end of first and second years of PUC. When the 2-year Pre-University course is introduced on a regular basis, it is proposed that the XII class examination be conducted by the State Board of Secondary Education alone.

Mysore

The new educational structure of 10+2+3 has already been introduced in the State of Mysore. The first batch of students joined the 2-year Pre-University Course in 1971-72 after doing 10-year S.S.L.C. examination, the curriculum for which had been revised in accordance with the recommendations of the Education Commission (1964-66).

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In December 1970, the Government set up a Board of Pre-University Education. The Board framed norms for starting new Junior Colleges, and decided the staff pattern, work-load, service conditions, pay structure etc. of the new 2-year P.U.C. It also prescribed courses of study, syllabuses etc. for these classes.

The new 2-year Pre-University Course is at present being run (i) in selected Higher Secondary Schools which had the 11th Standard corresponding to the one-year PUC, (ii) in the composite colleges which already had the one-year PUC and (iii) in the newly established Junior Colleges which have only 2-year PUC. The Higher Secondary Schools which were upgraded to have 2-year PUC were selected after getting them inspected. All the Junior Colleges which have only PUC classes are run by private managements. The proportion of 10-year schools to the institutions having Pre-University classes is approximately 4:1. Whether the 2-year PUC classes are in upgraded higher secondary schools or in degree colleges or in independent junior colleges, the grant-in-aid code, the pattern of fees and the curriculum etc. are the same everywhere.

The State Government's ultimate objective is to take away the PUC classes now attached to composite colleges and higher secondary schools and form them into separate units viz., Junior Colleges. This process of bifurcation is proposed to be initiated from 1973-74 in a phased programme.

The Pre-Professional courses have been abolished consequent upon the introduction of 2-year PUC. The State Universities have also initiated action to upgrade the syllabus of the degree courses. (Appendix 4).

Nagaland

The Government of Nagaland is, at present, following the Assam system of education and it proposes to follow the recommendations of the National Committee on 10+2+3 educational structure.

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Orissa

Till a couple of years back, while bulk of the educational institutions in the State were under the 11+1+3 pattern, there were a few higher secondary schools of 12 years. With the subsequent winding up of the higher secondary system in the State, the operative pattern everywhere was 11+1+3. The State universities have recently decided to introduce from 1973 a 2-year PUC and a 2-year degree course. According to this, the State should have 11+2+2 educational structure from the 1973 academic session.

The question of adopting the nationally recommended pattern of 10+2+3 is under the consideration of the State Government.

Punjab

The Government of Punjab has informed that the question of implementation of 10+2+3 pattern in the State is under its active consideration.

Rajasthan

The State Government has accepted in principle the new educational structure. The thinking is to add class XII to the schools. The Government proposes to close down the pre-university course and in that event the higher secondary of 12 years will be the only channel for going into the universities. The year from which the 12-year school course is to be introduced has not yet been decided.

The Rajasthan Board of Secondary Education, which formerly used to conduct Higher Secondary Part I examination, has abolished it. From next year, all high school students and those in class X of higher secondary schools will take the Secondary School Examination of the Board at the end of class X, and until class XII is added the students will take the Higher Secondary Examination at the end of class XI.

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Two working groups have been set up by the Rajasthan Board of Secondary Education to recommend courses of study for the 10+2 structure. One of these groups is concerned with Humanities and Sciences and the other with Vocational subjects.

Tamil Nadu

The task force of the Planning Committee of the State has recommended introduction of the new pattern, i.e. 10+2+3. The matter is, however, under consideration of the State Government and no final decision has yet been taken.

Tripura

In this State, all secondary schools are affiliated to the West Bengal Board of Secondary Education and all colleges to the University of Calcutta. Accordingly, the State will automatically follow, for the present, the changed structure introduced in schools and colleges of West Bengal.

Uttar Pradesh

The Government of Uttar Pradesh has accepted the 10+2+3 educational structure in principle. Here, one year has to be added to the degree course as the existing pattern in the State is 10+2+2.

In January 1973, a meeting of the Vice-Chancellors of all Universities of the State was held which endorsed the view of the State Government and agreed to introduce the 3-year degree course. The details are being worked out by a sub-committee. The U.P. Universities Ordinance has been promulgated recently to place all the universities of the State on a uniform footing. No date has yet been fixed, however, for the switch over from 2 to 3-year degree course.

Another Committee is being set up by the State Government to review the curriculum for the secondary stage and take other preparatory measures including rationalization of examinations.

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West Bengal

The Government of West Bengal has decided to introduce the 10-year pattern of school education from 1st January 1974 by abolishing the present 11-year higher secondary system. There will be a public examination at the end of class X. Thereafter a 2-year course of diversified education will be introduced separately. Vocational courses are also being planned for introduction in the 2-year stage.

The State Board of Secondary Education has finalized a syllabus for the new classes IX and X. This will be introduced in the academic session commencing in January 1974.

The question of the duration of the first degree course is still under consideration of the universities and Government of West Bengal.

Haryana, Manipur and Meghalaya

In these cases, the matter is still under consideration of the State Government and no final decision regarding change over to the nationally recommended pattern of 10+2+3 has yet been taken.

Union Territories

All the schools of Union Territories of Andaman & Nicobar Islands, Arunachal Pradesh, Chandigarh, Delhi and Laccadive & Minicoy Islands and one higher secondary school of Goa are affiliated to the Central Board of Secondary Education. The Board has decided that the 10+2 school pattern be introduced in its member-schools from the academic session beginning on 1st May 1974.

The schools of the rest of the Union Territories are affiliated to the neighbouring State Boards of Secondary Education and the changes made by the respective States will apply to those Union Territories.

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Kendriya Vidyalayas, etc.

All the Kendriya Vidyalayas (Central Schools) and Sainik Schools, a large number of Public Schools, Convent Schools and other all-India Higher Secondary schools are also affiliated to the Central Board of Secondary Education. Subject to the decision of the concerned governing bodies, these schools will also adopt the 10+2 pattern of school education from 1974.

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CHAPTER III

CURRICULUM RECONSTRUCTION

3.1 The new pattern does not envisage mere addition of one year to the total period of education or taking away of one class from the collegiate stage to school education or vice-versa. The restructuring should enable complete reorganization of the curriculum and raising the standard of Indian education, particularly at the university stage, to internationally comparable standards. The curriculum has also to be in accordance with the current needs of the society. As stated earlier, the broadly uniform pattern of curriculum all over the country will also facilitate mobility of children from one State to another and help national integration. The Committee, therefore, considered broad aspects of the curriculum and made recommendations relating to different stages of education - school and college.

(1) Elementary Stage

3.2 The curriculum for classes I to VIII should be built on the model curriculum for the corresponding classes suggested by NCERT (National Council of Educational Research & Training). The NCERT's curriculum might be adopted by the concerned State/Territory with necessary modifications, particularly in the lower classes, keeping in view the local requirements. This stage relates to compulsory primary education visualized under Article 45 of the Constitution of India and the NCERT's curriculum indicates the standard and proficiency expected at the end of this stage. It may be emphasized that apart from the purely academic subjects work-experience and physical and moral education should form an integral part of the school programme and be compulsory for all students. About 15% of the school time should be rationally demarcated for work-experience, about 10% for physical education, and about 5% for moral education, so that about 70% of the school time is left for teaching other subjects.

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(2) Secondary Stage

3.3 The new classes IX and X should provide for a good course of general education. This is too early a stage for any specialization in education. This stage should, therefore, incorporate a strong core of subjects which should mostly be compulsory for every boy and girl. This core should include development of language-competence and knowledge and knowledge of Mathematics and Science as well as of the physical and social environments of the pupil.

Objectives and Proficiency

3.4 The course for classes IX & X should aim at providing the following achievements and proficiencies:-

- i) A good competence in language skill in one language, working knowledge in another and elementary knowledge in a third language.
- ii) Ordinary level knowledge of Modern Mathematics.
- iii) Ordinary level knowledge of each of the four science subjects viz. Physics, Chemistry, Biology and Human Biology.
- iv) Ordinary level knowledge of the four Social Sciences viz. Geography, Economics, Indian History and Civilization, and Civics.
- v) Knowledge and practice of moral living.
- vi) Growth of a healthy body.
- vii) Experience of work in one craft or trade.
- viii) Knowledge of one additional academic subject or experience of work in one additional craft or trade, on optional basis.

Scheme of studies for classes IX & X

3.5 The following broad scheme of studies for classes IX & X is suggested:-

A. Compulsory subjects

- I. Languages - i) One out of regional languages, mother tongue, English or Hindi to be studied upto class X, and
ii) Another language of the same group to be studied upto the end of class IX.
- II. Modern Mathematics or Modern Mathematics (Ordinary)
- III. Sciences
- IV. Social Sciences

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- V. Moral Education
- VI. Physical Education
- VII. Craft or Trade

B. Optionals

Any one from the following:-

1. English
2. Hindi
3. Regional language
4. Mother tongue
5. Sanskrit
6. French
7. German
8. Russian
9. Physics
10. Chemistry
11. Biology
12. Elements of Commerce
13. Elements of Book-keeping & Accountancy
14. Economics
15. Civics
16. Home Science
17. Physical Education
18. Vocal Music
19. Instrumental Music
20. Dancing
21. Painting
22. Commercial Art
23. Office Procedure and Typing
24. Tailoring
25. Embroidery, Needle-work & Knitting
26. Farming
27. Animal Husbandry
28. Horticulture
29. Fruit Preservation & Canning
30. Mechanism & Repair of Radio
31. Electric Gadgets & Their Repairs
32. Carpentry
33. Black-smithy
34. Weaving
35. Leather-work
36. Book-keeping
37. Cloth Printing, including Batik

Note 1. The above scheme of studies presupposes that the three-language formula has been duly introduced in class V or VI, so that every student would have already studied three languages upto class VIII for at least three years. Even then, if the circumstances in any State so require, the second language from the compulsory subjects may be continued upto the end of class X.

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- Note 2. Of the two languages under compulsory subjects, Hindi should be one of the languages unless it has been already cleared in class VIII.
- Note 3. The first language is to be examined externally and the second internally by the school on the basis of a question paper to be given by the Examination Board. In the examination of language, particularly at lower level, provision for a suitable oral test should also be made.
- Note 4. If any language is offered under the optionals, it must be different from those studied under the compulsory subjects.
- Note 5. The list of subjects under 'B.Optionals' is only suggestive and not exhaustive.
- Note 6. While the above scheme is in accordance with the 1968 National Policy on Education in which the first 10 classes are to provide for a good course in general education, including science and mathematics, it also provides for one elective, which in volume is equal to half a subject. This has been included to enable the pupil to further discover his aptitude. Such a provision will help the pupil in the selection of subjects at the subsequent stage of education if he wishes to prosecute further studies in the academic or the vocational stream. If by interest or future plan of work or circumstances, he proposes to join, in classes XI & XII, a vocational stream, he might opt for a craft or a trade. If he wishes to join the academic stream, he might opt for an academic subject. There should, however, be an open choice of subjects in class XI irrespective of the optional subjects offered in class X.
- Note 7. The syllabus in any of the Social Sciences or the Sciences in the optional group will be higher than that under the same discipline in the category of compulsory subjects.
- Note 8. The preparation of details of the course-content including the list of experiences of work in the sciences and the craft(s)/trade(s) should be done on the presumption that each institution will work for a minimum of 220 days and 1200 hours of instruction in one year as was recommended by the Central Advisory Board of Education in its Thirtieth Meeting held at Pachmarhi on 6th and 7th May, 1963.

Course Content

3.6 Details of course-content including listing of items for practical work or of projects may be formulated by each Board of Secondary Education or the State government with the help of its expert organisations. The purpose of the revised uniform structure will be served only if the level of the courses is kept as high as possible. The minimum to be covered by the end of the new class X should be the syllabus for classes IX & X, in the respective subjects, proscribed under the existing higher secondary syllabus of the Central Board of Secondary Education. Advantage, in this connection, should also be taken of the syllabus of the National Council of Educational Research & Training, whenever such a syllabus for classes beyond VIII is available.

Crafts for classes IX & X

3.7 As an illustration again, the following crafts may be suggested for introduction in classes IX & X. These are being specially mentioned because in many of the States, local body and aided schools provision for crafts at this stage of education does not exist.

- i) Spinning and Weaving
- ii) Wood Work
- iii) Metal Work
- iv) Gardening
- v) Tailoring
- vi) Sewing, Needle work & Embroidery
- vii) Leather work
- viii) Pottery
- ix) Workshop Practice
- x) Printing
- xi) Book Craft
- xii) Manufacture of Sports Goods
- xiii) Commercial Art
- xiv) Dyeing and Calico Printing
- xv) Radio - its mechanism and repairs
- xvi) Electric gadgets and their repairs
- xvii) Masonary Work
- xviii) Paper Craft and Papier Mache
- xix) Bee-keeping
- xx) Batik
- xxi) Photography
- xxii) Music (Instrumental)
- xxiii) Dancing
- xxiv) Sculpture
- xxv) Painting
- xxvi) Plastics
- xxvii) Clay modelling
- xxviii) Cardboard modelling
- xxix) Bamboo Craft
- xxx) Wire work

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- xxx1) Floriculture
- xxxii) Horticulture
- xxxiii) Forestry
- xxxiv) Farming
- xxxv) Fruit Preservation
- xxxvi) Bakery

Examination

3.8 There should be a public examination at the end of the course except in the subjects of Moral Education, Physical Education and Craft or Trade. In this examination, each of the first four core subjects should have two papers except in the case of science subjects where there should be a practical examination as well. The optional subject should have only one paper.

3.9 The two papers under Social Sciences should cover the various subjects as under:-

Paper I: (Geography with $\frac{2}{3}$ weightage plus Economics with $\frac{1}{3}$ weightage)

Paper II: (Indian History and Civilization with $\frac{2}{3}$ weightage plus Civics with $\frac{1}{3}$ weightage)

Similarly, the two theory papers in Sciences should cover the various subjects as under:-

Paper I: (Physics with $\frac{2}{3}$ weightage plus Chemistry with $\frac{1}{3}$ weightage)

Paper II: (Biology with $\frac{2}{3}$ weightage plus Human Biology with $\frac{1}{3}$ weightage)

3.10 All subjects in the compulsory category should carry 100 marks each. All subjects in the optional category should carry 50 marks each.

3.11 The practical examination should include a viva voce test, and passing in the practical examination in each of the relevant subjects should be obligatory on the part of the student. In sciences, project work should be encouraged.

3.12 Very special effort should be made to improve the quality of the question-papers set for the examination. This should be treated to be one of the most important aspects of examination reform. The proportion of essay-type, short answer-type and objective-type questions in any paper may vary from subject to subject. In most subjects, however, it is desirable to introduce the short-answer type questions in an increasing measure. This step will considerably improve the quality of the written examination.

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3.13 A good deal of work has been done both in India and abroad in constructing various types of questions on scientific lines. The examination boards and the paper-setters should make full use of this material in order to improve the reliability and validity of our examinations.

Internal Assessment

3.14 While the continuance of the practice to hold a public examination at the end of the course may be desirable in order to maintain uniformity in the standard of evaluation, it has to be remembered that on educational considerations alone, the teacher of the student is his best evaluator. The new scheme should, therefore, provide for a continuous internal assessment throughout the course. The result of this assessment, after moderation, wherever necessary, should be incorporated in the Board's certificate in a separate column parallel to the one in which the result of the external evaluation is reported under the existing practice.

3.15 The result of internal assessment should be expressed in terms of grades on the following

5-point scale:-

Grade I	(Outstanding)
Grade II	(Above Average)
Grade III	(Average)
Grade IV	(Below Average)
Grade V	(Poor)

These grades may roughly correspond to an achievement of marks which are 75% and above, 60% and above, 45% and above, 33% and above, and below 33% respectively.

Cumulative Record Card

3.16 The existing practice of maintaining (at least in good schools) for each pupil a cumulative record card, which reports his progress not only on the academic side but also in the area of his physical growth, social adjustment, interest in co-curricular and other activities etc. should continue. This card should also be handed over to the candidate in addition to the examining board's certificate as amended and recommended above.

(3) Higher Secondary Stage

3.17 The curriculum for classes XI & XII should be built on the latest curriculum for classes IX & X.

It should provide for two main streams i.e.

- i) Academic Stream
- ii) Vocational Stream

ACADEMIC STREAM

Objective & Proficiency

3.18 The objective of the academic stream should be to prepare the student for university or higher education, if he wants to avail himself of such education. Higher education in this context should cover both general education and professional education like Engineering and Medicine.

3.19 The courses in the new classes XI & XII should thus aim at giving the following proficiencies:-

- i) Further competence in one language* and its literature.
- ii) Knowledge in four elective subjects of an academic character, the proficiency in at least one of which should be such that it would prepare the student for a good honours course in that subject.

Scheme of Studies

3.20 A suggested scheme of studies for the academic stream could be as under:-

I. Language & Literature	One out of the Regional languages, English or Mother tongue, greater weightage being given to the 'language' part.
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II. A total of four subjects from the following:-

1. One or more from among the Indian languages mentioned in the Constitution of India and different from the language offered under I.
2. One or more from among the foreign languages e.g. English, Russian, German, French, Chinese, Japanese, Tibetan, Nepalese, and others. (English cannot be offered twice if the same has been offered under I)

*If knowledge of more languages is desired, the same can be acquired by appropriate offerings under the electives or through the choice of additional subject(s).

3. Modern Mathematics (Advanced or Modern Mathematics (Ordinary)
4. Statistics
5. Physics or Advanced Physics
6. Chemistry or Advanced Chemistry
7. Botany
8. Zoology
9. Human Biology
10. Economics or Advanced Economics
11. History
12. Geography
13. Logic
14. Political Science
15. Sociology
16. Psychology
17. Commerce
18. Book-keeping & Accountancy
19. Home Science or Advanced Home Science
20. Physical Education
21. Vocal Music
22. Instrumental Music
23. Dancing
24. Painting
25. General Agriculture
26. Biology (For Agriculture)
27. Agronomy

III. Participation in at least one of the co-curricular activities, namely N.C.C., N.S.C., Physical Education, Social & Community Service etc.

Note 1. The above list of optional or elective subjects is only suggestive and should not be considered to be exhaustive.

Note 2. If study of a subject at advanced level is available, it might be stipulated that preference for admission to the honours course in the university will be given to those who have studied that subject at the advanced level.

Note 3. In the matter of admission to a university course in Home Science, it might be stipulated that preference will be given to those who have studied Advanced Home Science provided they have also studied the relevant basic sciences.

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- Note 4. Similarly, in the matter of admission to a university course in Agriculture, it might be stipulated that preference will be given to those who have studied General Agriculture provided they have also studied the relevant basic sciences.
- Note 5. For admission to the Engineering and Medical courses at university level, the concerned authorities will lay down their own requirements in terms of the subjects whose knowledge will be considered essential.
- Note 6. It is desirable to permit students to choose any four subjects as electives. This would encourage inter-disciplinary study at the university stage. However taking into consideration the limitation of practicability in classes XI & XII and the usual rules for admission in the Indian universities, it is desirable to group the electives in appropriate combinations. For example, those planning to join a Medical course should offer Physics, Chemistry, Human Biology and Modern Mathematics (Advanced). Similarly, those going in for Engineering should offer a combination of Physics, Chemistry and Modern Mathematics (Advanced). Those offering Commerce and planning to join Commerce Faculty in the university should offer Book-keeping & Accountancy also; and those intending to study Economics at University level should be well-advised to offer Modern Mathematics (Advanced or Ordinary).

Course Content

3.21 Details of course-content including listing of items for practical work or of projects may be prepared by each Board of Higher Secondary & Vocational Education or the State Government with the help of its expert organisations. The purpose of the revised uniform structure will be served only if the level of the courses is kept as high as possible. The minimum to be achieved at the end of the new class XII should be the standard of the existing 11-year higher secondary syllabus of the Central Board of Secondary Education further raised by the studies equal to one year. Advantage, in this connection, should also be taken of the corresponding syllabus of the National

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Council of Educational Research & Training, whenever such a syllabus is available.

Examination

3.22 There should be a public examination at the end of the course. In this examination, each subject should have two papers except in the case of science subjects and others like Geography and Home Science where there should be a practical examination as well. The practical examination should include assessment of project work, and a viva voce test and passing in the practical examination in each of the relevant subjects should be obligatory on the part of the candidates. Each subject should carry a maximum of 100 marks.

3.23 Very special effort should be made to improve the quality of question-papers set for the examination. This should be treated to be one of the most important aspects of examination reform. The proportion of essay-type, short-answer type, and objective type questions in any paper may vary from subject to subject. In most subjects, however, it is desirable to introduce the short-answer type questions in an increasing measure. This step will considerably improve the quality of the written examination.

3.24 A good deal of work has been done both in India and abroad in constructing the various types of questions on scientific lines. The examination boards and the paper-setters should make full use of this material in order to improve the reliability and validity of our examinations.

Internal Assessment

3.25 Since on educational considerations, the teacher of the student is his best evaluator, the new scheme should provide for a continuous internal assessment throughout the course. The marks of this assessment, after moderation wherever necessary, should be incorporated in the Board's certificate in a separate column parallel to the one in which the result of the external evaluation is given under the existing practice.

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3.26 The result of internal assessment should be expressed in terms of grades on the following

5-point scale:-

Grade I	(Outstanding)
Grade II	(Above Average)
Grade III	(Average)
Grade IV	(Below Average)
Grade V	(Poor)

These grades may roughly correspond to an achievement of marks which are 75% and above, 60% and above, 45% and above, 33% and above and below 33% respectively.

3.27 The vocational stream has been dealt with in detail separately under Chapter IV.

(4) University Stage

3.28 The curriculum for the first degree may be upgraded and reconstructed by the universities concerned keeping in view the new curriculum for classes XI & XII. It would be advisable for the universities also to introduce a few vocational courses in addition to the traditional academic courses. These will, of course, be different from the established professional courses like those of Engineering, Medicine, etc. If necessary, separate colleges for vocational studies like the one recently started by the University of Delhi may be opened. New kinds of vocations are in the offing and may be usefully explored on the basis of demand surveys conducted by or in collaboration with the Department of Labour & Employment.

Pre-Professional courses

3.29 The Committee is of the opinion that henceforward class XII examination should uniformly be the minimum qualifications for admission to different professional courses of university level such as engineering, architecture, medicine, agriculture, veterinary science etc. Accordingly, the pre-professional course, wherever it exists, should be abolished. The requirements of the pre-professional course may be adequately taken care of in the new curriculum for classes XI & XII. This recommendation has been supported in principle by the Executive Committee of the Medical Council of India. (Vide the Council's letter of 19th October 1973 at Appendix 5)

Duration of the B.E. Degree

3.30 Today the period of instruction for the Bachelor of Engineering Degree in most Indian Universities is 5 years after the 11-year higher secondary or equivalent schooling. Since a good portion of Science, Mathematics etc., which are taught during the first two years of the 5-year B.E., B.Tech. or B.Sc.(Engg.) course, will have been covered during the new XI & XII classes, it should be possible to reduce the duration of the B.E. etc. Degree course to 4 years without any loss in standard. It will mean considerable saving to both the students and the State, because engineering education is quite expensive. The Committee, therefore, recommends that the requirement for admission to the B.E. etc. Degree be raised to passing class XII of the new Higher secondary stage and that the period of instruction for the same degree be reduced to 4 years.

3.31 In order to establish proper liaison between the requirements of Engineering Institutions of degree level and the syllabi in Physics, Chemistry, Mathematics etc. for classes XI & XII, it is also recommended that a representative of the State Directorate of Technical Education should invariably be taken as a member of the State Board of Higher Secondary & Vocational Education or the concerned syllabus making authority in the State.

Duration of B.Arch. Degree

3.32 The admission qualification and duration of the B.Arch. degree being identical with those for the B.E. and the equivalent Engineering degree, it is recommended that the admission requirement to B.Arch. course should in future be raised to passing of the new class XII examination and the duration of the course reduced to 4 years. This will be economical to both the students and the State. It will also contribute to raise the standard of instruction and the quality of general atmosphere in the concerned institutions of Architecture, because they will get students who are maturer by one year and are more knowledgeable.

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Duration of B.Sc. (Agr.) Degree

3.33 Generally speaking, the duration of B.Sc. (Agr.) course in the Indian Universities is 4 years after higher secondary, pre-university or equivalent examination, or 3 years after Intermediate or equivalent examination or 5 years after matriculation or equivalent examination. We recommend that with the change of educational structure to 10+2 pattern, the duration of B.Sc.(Agr.) course should uniformly be made of 3 years duration after the new class XII. This will generally mean no decrease in the duration as at present and it will be more economical to both the students and the government because college education per student is more expensive than school education. Admission of the matriculation or equivalent examination passed students to B.Sc.(Agr.) course may not be very realistic, because these students will be too young to benefit adequately from the lecture method adopted in higher education and from the general atmosphere which prevails in universities and colleges.

3.34 In order to ensure proper coordination between what is taught in Science, General Agriculture, Mathematics, Agronomy etc. in the new classes XI & XII and what is required for a satisfactory study at the B.Sc.(Agr.) level, a representative of the university authorities dealing with agriculture education should be made a member of the State Board of Higher Secondary & Vocational Education or the body which prescribes syllabus for the higher secondary or equivalent stage.

Duration of other Degree courses

3.35 Similar considerations and recommendations will apply to the cases of other professional or semi-professional degrees like B.Sc.(Home Science) and B.V.Sc., wherever today the admission requirement is a pass in higher secondary or equivalent examination.

3.36 The same considerations, however, do not apply to the first degree in general education like B.A., B.Sc. and B.Com. The case of these degrees was duly considered

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when the recommendation to introduce on a uniform basis the 10+2+3 educational structure was made. As a result of successful implementation, only a few years back, of the national scheme to introduce 3-year degree course, the duration of the undergraduate degree in Arts, Science and Commerce was raised to three years all over the country except the university of Bombay and the State Universities of U.P. We feel that it is too early to think of any change in the pattern of 3-year degree course specially when the University of Bombay as well as the State universities of U.P. have also agreed in principle to fall in line with the national pattern of 3-year degree course. The Education Commission(1966) had recommended a higher education stage having a course of 3 years for the first degree and the National Policy on Education also stated that the ultimate objective should be to adopt the 10+2+3 pattern. We are, therefore, strongly of the view that in the interest of achieving a broad uniform educational structure in all parts of the country, it may not be appropriate to reduce the duration of the first degree from 3 years.

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CHAPTER IV

VOCATIONALIZATION OF HIGHER SECONDARY EDUCATION

4.1 Vocationalization of higher secondary education should be considered to be an essential element of the proposed structure of 10+2+3. This is to be achieved through the organization of a vocational stream in the new classes XI and XII irrespective of where these classes are located: with schools or with degree colleges or in separate institutions with or without some lower school classes.

4.2 The ITIs, Polytechnics, Women's Polytechnics, and other vocational schools (commercial, agricultural, para-medical etc.) serve to provide the on-going vocational training at the secondary and higher secondary stages of education. The proposed vocational stream at the higher secondary stage should be taken to supplement the existing facilities for vocational education. It will strengthen general education and make it more relevant to social needs of India. It will make those school leavers, who do not wish to go in for higher education or are not capable of making full use of that education, a more employable material. सत्यमेव जयते

Objective & Proficiency

4.3 The objective of the vocational stream should be to prepare the student for some vocation in life and thus to enable him to choose a course which is terminal in character. The terminal character of the course must not be understood to mean that the student has entered a blind alley and thus he can never go in for further studies in the general, professional or any other field. On the other hand, a specific provision should be made to enable those students, who are talented or others who later change their mind and wish to prosecute higher studies in any branch, to do so with some additional education which is found to be necessary. Making of such a

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provision in the prevalent social conditions of India should be considered to be crucial for the success of the vocational stream. Without this facility, children from upper strata of society and talented children will not join the vocational stream in sufficient number. This would weaken the scheme and tend to fail it.

4.4 A simple and educationally sound method to achieve the above objective will be to divide the syllabi of both the academic and the vocational subjects into units and permit the student to carry over the relevant credits earned by him to the new stream to which he wishes to change over.

4.5 The vocational stream should thus provide knowledge, training and practical experience in one vocation carefully chosen out of areas of work relating to:-

- a) Agriculture (Including Animal Husbandary & Fishery)
- b) Industry
- c) Trade and Commerce
- d) Public Services (Secretariat, Para-medical, Insurance, Banking, Marketing etc.)
- e) Education and
- f) Others

4.6 The proficiency aimed at should be of such a high order that it enables the student to enter the world of work as an enlightened and efficient person. This world of work might relate to service in the chosen field or to self-employment.

Scheme of Studies

4.7 As regards the scheme of studies for the vocational stream, the following guidelines are suggested:-

- (1) The period of the course may vary from 1 to 3 years, depending upon the requirements of the particular course.

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- (2) The course-content, including the training and practical work, should be such as to equip the student very well to get a job or to establish himself as a self-employed person depending upon his choice and circumstances.
- (3) The particular courses to be introduced in any institution should be locality-oriented. They should be selected on the basis of a demand survey to find out the potential for work opportunities in the neighbourhood or the region. While the vocational stream at the higher secondary stage should concentrate on courses of non-engineering character, a few of these courses could also be chosen from out of those already introduced in the general polytechnics, the women's polytechnics, the proposed agricultural polytechnics and the equivalent vocational institutions, provided such courses indicate enough work-potential. It is financially, socially and educationally better to introduce such courses in the institutions of general education than to open additional polytechnics for them. Unnecessary duplication should, however, be avoided.
- (4) Some of the courses, in this connection, which may be considered of higher priority based generally on the entries in the registers of the Employment Exchanges could be as under:-
 - (a) Secretarial Practices
 - (b) Principles & Practices of Trade & Commerce
 - (c) Catering Technology
 - (d) Maintenance Mechanics course
 - (e) Nutrition & Cookery
 - (f) Interior Decoration
 - (g) Horticulture
 - (h) Fruit Preservation
 - (i) Farming
 - (j) Medical Laboratory Technology
 - (k) Optometry & Orthoptics
 - (l) Nursing
 - (m) Education
 - (n) Dress-Making
 - (o) Draftsman's course
 - (p) Book Production (Translation, editing, lay-out, proof-reading, pricing, distribution and sale)
 - (q) Beautician's course

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(5) Education as a vocational course should be planned to be an alternative channel to train primary school teachers. The professional training to be given under the umbrella of the academic and the vocational streams to be available in the new classes XI & XII should be better than that given today in the schools of teacher-training. For, in addition to the required training in methodology etc., each prospective teacher could be helped to improve his knowledge of the subjects he has to teach in the primary schools. He should also be given a more broad-based professional training with knowledge of syllabus making, book-review, supervision of primary education etc. Of course, satisfactory arrangement for practice-teaching will have to be made for Education like the arrangement for corresponding practical experience in other branches of the vocational stream.

(6) The list in para (4) is only illustrative. It is not even suggestive, nothing to say of its being exhaustive. The actual list could be worked out only through the method indicated in para (3). As such, there cannot be a common list of subjects for the whole country. It may even vary to some extent from region to region within the same State.

(7) For the success of this new programme, it is highly desirable for each institution to make a collaborative arrangement with the concerned establishment (factory, concern, office, hospital, bank, company, hotel etc.) in the region in terms of the following areas:-

(i) Syllabus:- The syllabus should be prepared in consultation with the concerned establishment(s) to suit the needs of their and similar other organizations.

(ii) Teaching:- Some of the teaching and training should be done by the selected officials of the relevant establishment(s) on part-time basis.

(iii) Practical Experience:- The concerned establishment should agree to provide for supervised practical experience to the students in their premises under real conditions and

- (iv) Internship:- The concerned establishments should agree to accept selected students of the particular course(s) as internees under the Apprenticeship Act of 1961 or otherwise with the proviso that if their work is satisfactory, they will be given regular appointments.
- (8) Full-time teachers for the vocational stream could be made available through one or more of the following possibilities:-
- (i) Orientation of selected existing teachers, e.g. teachers of Agriculture, Commerce, Physics, the additional expenditure during the orientation being borne by the State.
 - (ii) Recruitment (or full-time or part-time basis) of qualified and suitable persons already working in the relevant establishments or organizations.
 - (iii) Special pre-service training programmes to be organised by the Regional Colleges of Education or other institutions.
- (9) Every student of the vocational stream should be taught at least one language and its literature. This could be out of the Regional Languages, English or Hindi, greater weightage being given to the language part.
- (10) The course-content of each vocational subject should include the relevant theoretical knowledge of the allied branches on the academic side. While all such knowledge has to be given, the subject should not be over-loaded with the same, for the emphasis here should be on job-preparedness. For the purpose of a more economical utilization of the teaching personnel and the institutional building, and otherwise, it is desirable to hold common classes for students of the academic and the vocational streams with respect to those portions of the academic subjects which may be common to both the syllabi.

Syllabus Formulation

4.8 It has been stated in sub-paras 9 and 10 above that every student of the vocational stream should be taught at least one language and the relevant theoretical and

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practical knowledge, emphasis being on job-preparedness rather than academic competence.

4.9 The Special Committee on Reorganisation and Development of Polytechnic Education (Damodaran Committee) set up by the Union Ministry of Education and Social Welfare in 1970-71 has, in its report, recommended diversification of the courses presently available in the polytechnics in India. It has suggested that courses in Business and Commerce should also be added to the existing courses because they are closely related to industry for which the polytechnics are to produce technician-level workers. The scope of the course in Business and Commerce is identical with what we have stated as Principles and Practices in Trade and Commerce in the illustrated list in sub-para 4 above, duration of the course in both cases being the same.

4.10 The Special Committee has suggested the following syllabus for the course in Business and Commerce:

I. Compulsory

- i) English
- ii) Commercial Arithmetic
- iii) Commercial Geography
- iv) Elements of Commerce
- v) Book-keeping and Elements of Accountancy
- vi) Elements of Business Organization & Management including Office Management

II. Optionals: One out of the following may be offered:-

- a) Advanced Accountancy & Auditing
- b) Cost Accountancy
- c) Income-tax Practice
- d) Stores, Purchase, and Control
- e) Materials Management and Transportation
- f) Inventory control and Store Layout
- g) Market Study
- h) Advertisement and Display
- i) Export and Import Business
- j) Distribution Trade
- k) Insurance & Banking
- l) Company Law & Company Secretarial Practice
- m) Factory Laws and Regulations
- n) Data Processing
- o) Office Equipment and Systems

4.11 We endorse the same pattern of syllabus for the subject of Principles and Practices in Trade and Commerce in the vocational stream.

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4.12 Details of the course-content should be prepared with the help of experts chosen from the kind of organisations in which the successful leavers of this course are likely to work and some educationists with knowledge and experience of syllabus making.

Characteristics of Vocational Training

4.13 The training in the vocational stream of the higher secondary schools and other vocational institutions should fulfill some specific requirements.

These should include the following:-

- i) This training is for a specific occupation or occupational family.
- ii) The training is based upon an up to date analysis of the occupation as practised by successful and efficient workers.
- iii) The instructional environments approximate the present working conditions of the occupation.
- iv) The instructor has had appropriate training and experience in the field in which he is providing the training.
- v) The course is inclusive enough for the student to develop competence on a given occupational level.
- vi) The instruction includes skills, related technical and scientific and other knowledge, understandings, attitudes, safety habits, and connected information essential to success in the occupation.
- vii) The student enrolled has made a tentative vocational choice based upon his interest and aptitude.

Vocational Guidance

4.14 Effective vocationalization of higher secondary education will call for some reorganization and strengthening of the existing education and vocational guidance service in educational institutions. At the school stage, the services of the counsellors, career-masters etc. may be concentrated in those institutions where the vocational stream has been introduced. These persons should help the pupils in the choice of the stream and the particular subject(s) at the time of admission to the new class XI. They should also build

up a clearing house unit in their institutions and guide and help the students in finding opportunities for work or employment or further training, as the case may be.

Review of Multipurpose Schools etc.

4.15 In addition to ITIs and Polytechnics, which provide specific vocational training, the following types of institutions are expected to give some kind of vocational education (or a bias towards it) at secondary or higher secondary stage:-

- 1) Pre-Vocational Training Centres
- 2) Post-Basic Schools
- 3) Technical High Schools
- 4) Multipurpose Schools
- 5) Junior Technical Schools

4.16 The Government of India in collaboration with I.L.O. and U.N.I.C.E.F. initiated a scheme under which pre-vocational training in Fitting, Turning, Sheet Metal Work, Welding, Carpentry etc., is provided for 3 years to the school leavers entering these centres. There are more than 60 Pre-vocational Training Centres including 2 Regional Centres, which cater to the needs of the country. These Centres are attached to Higher Secondary or Multipurpose Schools. It has been noticed that a large majority of the trainees from these Centres did not settle down in occupations, but pursued further education and training. The attachment of these Centres to secondary schools has had the effect that the whole scheme has now become a part of the general educational system. The employability of the trainees coming out from these Centres has also been rather limited. A large majority of the students who complete training in the pre-vocational training centres continue their education in Industrial Training Institutes or Junior Technical Schools or other institutions.

4.17 Post-basic schools are higher secondary schools following the Basic pattern of education. They are not large in number. Multipurpose and Junior Technical Schools were started during the fifties, following the recommendations of the all-India Secondary Education Commission (Mudaliar Commission). They are 11-year higher

secondary schools, and a couple of thousand in number. The Multipurpose schools provide diversified courses (Humanities, Sciences, Agricultural stream, Commercial stream, Technical stream, and Fine Arts) one of which is to be chosen by the student in class IX. The Junior Technical schools concentrate on the technical courses. The Technical High Schools, belonging to a similar category, exist in the States of Gujarat, Maharashtra, and Tamil Nadu only. The practical bias to education given in these schools has not been found very effective.

4.18 The instruction given in all these schools, which really belong to the area of general education, needs to be reviewed. They should be reorganized to fall in line with the 10+2 pattern of education. Some of them with better facilities of workshop or farm etc. should be preferred for the introduction of the proposed vocationalization at the higher secondary stage of education.

The Area Skill Surveys

4.19 We have already stated that the particular courses to be introduced under the vocational stream of any institution should be locality-oriented and should be determined on the basis of a demand survey to find out work opportunities in the neighbourhood or the region. It has come to our notice that the Directorate General of Employment and Training of the Union Ministry of Labour and Rehabilitation has undertaken to conduct, on a pilot basis, area skill surveys of 21 representative districts in the country and that the reports of the surveys relating to Bangalore (Mysore), Gorakhpur (U.P.) and Ludhiana (Punjab) Districts are available. These reports have been studied. They bring out some facts relevant to the selection of particular vocational courses for introduction in selected higher secondary institutions of these districts.

4.20 The surveys reveal that the manpower needs of the district in non-engineering trades (in which we are more interested) below university level will by 1977

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be as in the following three tables. These do not take into consideration the requirements of unskilled workers.

Bangalore District

Occupation	Additional Hands Needed by 1977
Clerical Workers	8,674
Sales Workers	1,547
Miners & Quarrymen	168
Workers in Transport & Communication	1,594
Craftsmen and Production Process Workers*	50,418
Service, Sport and Recreation Workers	4,471
Nurses	1,160
Midwives and Health Visitors	100
Pharmacists and Vaccinators	210
Sanitation and Health Technicians	150
Middle & Primary School Teachers	1,240
Total:	69,732

*Includes -

Fibre Preparers, Ginners and Silk Reelers	500
Twisters	950
Winders	1000
Reeters	700
Spinners & Piecers	1000
Weavers (powerloom)	2100
Weavers (Handloom)	1450
Drawers & Warpers	700
Knitters & Carpet Makers	500
Tailors & Dress Makers	450

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Gorakhpur District

Occupation	Additional Hands needed by 1977
Clerical Workers	2,268
Sales Workers	174
Workers in Transport and Communication	1,006
Craftsmen & Production Process Workers *	48,741
Service, Sport and Recreation Workers	1,451
Nurses, Midwives etc.	90
Pharmacists & Health Technicians	510
Junior High and Primary School Teachers	3,930
Total:	58,170

* Includes Weavers (Handloom)	8,456
Spinners and Winders	5,100
Tailors & Dress Makers	1,100 and
Bamboo/Cane Product Workers	1,100

Ludhiana District

Occupation	Additional Hands needed by 1977
Clerical Workers	2,581
Sales Workers	1,177
Workers in Transport & Communication	1,798
Craftsmen & Production Process workers*	38,196
Service, Sport & Recreation Workers	2,214
Nurses, Midwives etc.	150
Pharmacists & Health Technicians	90
Middle & Primary School Teachers	1,350
Total:	47,558

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* Includes:-

Spinners & Winders	4,950
Weavers (Powerloom)	1,900
Weavers (Handloom)	
Drawers & Combers	600
Bleachers, Dyers & Furnishers	750
Knitters & Lace Makers	3,950
Tailors & Dress Makers	1,800

4.21 A comprehensive account of self-employment & other mixed employment in urban areas was outside the survey. Information about self-employment in the non-agricultural sector of rural areas was, however, collected from a sample of 10% of villages in each development block of the three districts. The survey revealed that the type of assistance needed for development of self-employment among the villagers was mainly finance and sales-promotion.

4.22 The following tables give information about the existing numbers of self-employed persons in some selected fields of interest to us and those who can be similarly employed immediately in the three districts.

Bengaluru District

Field	Existing Number of self-employed persons	Scope for Additional Numbers to be self-employed
Dairy Farming	900	3,350
Sheep Rearing	50	1,350
Weaving (Handloom)	800	1,350
Weaving (Powerloom)	250	700
Poultry	-	900
Rearing of Silkworm	7,950	500
Twisting (Textile)	100	250
Coir & Mat Weaving	500	250
Retail Selling	6,600	200
Tailoring	2,400	100
Brick Laying	1,850	6,950
Total:	21,400	15,800

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Gorakhpur District

Field	Existing Number of Self-employed persons	Scope for additional Numbers to be self- employed
Hand Weaving	3,950	8,300
Dairy Farming	10,100	7,400
Fishing	5,550	7,400
Leather Tanning and Shoe making	3,200	7,150
Spinners and Winders of Cotton & Wool Textiles	1,500	5,000
Khandsari & Gur making	300	4,700
Retail Selling	6,000	2,700
Poultry Farming	1,350	2,000
Rearing of Pig & Sheep	2,200	1,000
Cane & Bamboo Products	900	1,100
Tailoring	5,000	1,050
Total:	40,050	47,800

Ludhiana District

Field	Existing Number of self-employed persons	Scope for additional Number to be Self- employed
Dairy Farming	650	6,250
Poultry	550	3,050
Pigging	500	1,000
Shoe-making	6,200	850
Handloom Weaving	1,550	300
Tractor Repairing	150	300
Hosiery Knitting	-	100
Diesel Engine Repairing	350	350
Total:	9,950	12,200

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4.23 The authorities in charge of vocationalization of higher secondary education in the State should study the reports of the area skill surveys. They should take note of the additional man-power needed either in the area of service or in that of self-employment and evaluate its implications in the context of existing facilities for training and the possibilities of expanding them in each of the three districts. For the balance of the man-power needed, they should take up the question of vocational courses in one or more of the higher secondary institutions as the case may be, of the concerned district.

Work Opportunities

4.24 Detailed studies relating to the illustrative list of vocational subjects given in sub-para 4 of para 7 above have revealed that they are linked with a few specific jobs and the person concerned can also look for promotion to some higher posts or he can establish himself as a self-employed person in particular areas of work after successfully completing the course. The following table gives the information with respect to some of the courses:-

Course	Jobs	Promotion Posts	Self Employment
Secretarial Practices	Accounts Clerk, Audit Clerk, Cashier, Book-keeper, Bill Clerk, Bank Clerk, Ledger Clerk, Store Clerk, Storeman Receptionist, Telephone Operator, Record Keeper, Stenotypist, Stenographer and Personal Assistant	Office Asstt., Office Superintendent, Junior Auditor, Senior Cashier, Store Supervisor, Private Secretary, Reporter and Instructor (Typing and Shorthand)	Establish a private coaching/commercial institute in typing and shorthand, organize a pool of typists/stenographers and accountants for ad hoc work of professionals such as lawyers, authors, journalists, shopkeepers, businessmen, and chartered accountants, and undertake on commercial basis shorthand, typing or duplicating work.

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Course	Jobs	Promotion posts	Self-Employment
Principles and Practices of Trade and Commerce	Salesman, Cansvasser, Demonstrator, Order Supplier, Commercial Traveller Clerk, Purchase Clerk, Clerk or Asstt. in Export-Import Organisations, Marketing Clerk, General Clerk in establishments concerned with Wholesale & Retail Trade, Business, Small-Scale Industries, Import-Export Houses, Export Promotion Councils, Banks, Departmental Stores and Emporia	Export Assistant, Export Manager, Purchasing Agent, Sales Supervisor, Buyer, and Purchase Manager	Set up private trade, business shop, packaging establishment or export and import business
Catering Technology	House Keeper, Care-taker, Linen-Supervisor, Laundry Supervisor, Floor-Keeper, Pantry Man, Pantry Supervisor, Steward (Air, Ship and Institutional), Flight Purser, Hotel Receptionist, Tourist Hostess	Senior supervisory and managerial positions in hotels, restaurants, hostels & boarding houses, hospitals, clubs, government & private guest houses and as air hostess	Establish an eating shop, cafeteria, restaurant, bakery, confectionery, dry cleaning plant or laundry. Work as Caterer for marriage and other parties. Take contracts for running canteens in schools, colleges, hospitals, nursing homes, air companies, travel agencies etc.
Maintenance Mechanic's Course	Motor Mechanic, Scooter Mechanic, I.C. Engine Mechanic, Tractor Operator-cum-Mechanic, Farm Machinery/Implement Mechanic, Machine (Electrical appliances) Mechanic, Chemical Plant Mechanic	Supervisor/Foreman	Establish a private repair and maintenance workshop for all types of automobiles, farm machinery and implements and dairy machinery. Set up agro-service centres and customer service units engaged in hiring out of tractors, agricultural implements and their repair and maintenance. Take up hiring of electrical/sound equipment for festive and other occasions

Course	Jobs	Promotion Posts	Self-Employment
Medical Laboratory Technique	Laboratory Assistant in various medical colleges, hospitals, schools and laboratories	Laboratory Technician, Technical Assistant, Technician Tutor	Organize laboratories for carrying out various types of tests required for patient care, research and development in the field of medical sciences
Optometry and Orthoptics	Optometrist in medical colleges and eye and other hospitals; Orthoptist in medical colleges and eye hospitals	Senior Optometrist, and Technician Tutor; and Senior Orthoptist & Technician Tutor	Start own establishment as Optometrist, prescribe & dispensing visual aids under the guidance & supervision of an Ophthalmologist. Get gainful employment with various eye specialists and private medical practitioners

Employment of vocationally trained personnel

4.25 It has been observed that a large number of trainees who have passed out from the ITIs are waiting for jobs on the live register of the employment exchanges. This number was 1.25 lakhs at the end of 1972 as against the out-turn of 60 to 70 thousand per year. Similarly, the number of diploma holders in engineering (Polytechnic Leavers) on the live register at the end of 1972 was about 60,000.

4.26 The above unemployment situation will not be very relevant to the proposed vocational stream at the higher secondary stage if the latter concentrates on non-engineering trades, as has already been recommended. However, the experience of the ITIs and Polytechnics, which have played an important role in the industrial development of the country for the last 30 years, may be treated as illustrative material to counteract misunderstanding, if any, that every

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successful leaver of the vocational stream of the higher secondary school will be assured a job. The chances of his establishing himself as a self-employed person or entering service will also depend upon the expansion of work-opportunities in the country. But he will certainly be better placed for work or employment than under the existing system.

Facilities for change over from Vocational to Academic Stream and vice-versa

4.27 It is not envisaged that the academic and the vocational streams should be organised in independent water-tight compartments preventing change-over from one to the other. Yet it is advisable to have a comprehensive and self-contained syllabus for each of the vocational subjects so that the relevant academic and other knowledge required for a particular vocation is interwoven in that syllabus itself. The objective should be that the student who satisfactorily completes the vocational course should become a suitable person either for self-employment or for service in the respective vocation or for pursuing a still higher course of study, if any, in that vocation. In case the vocational course is not comprehensive in itself the tendency will be, as it happens today, for the students to enter the portals of university and the purpose of the new structure to prevent the uncalled for rush to academic courses in the university will be defeated. Wherever necessary and possible, for academic and other considerations, the arrangement for teaching parts of the syllabi common to both the vocational and the academic streams may be the same.

4.28 If any student after doing a vocational course in classes XI and XII wishes to change-over to an academic course or vice-versa he should be required to spend some more time in the school and cover such portions of the course which he has not already studied. For this purpose, it would be appropriate to divide the syllabi of both the academic and the vocational subjects into units and permit the student to carry over the relevant credit earned by him to the new stream.

4.29 In case the student is unable to conduct a whole-time study for the purpose of change-over, he should be allowed to pursue a part-time course which may be of somewhat longer duration, as is done in West Germany. Those who are in employment may be allowed some kind of exemption if the employment is relevant to their vocational studies.

4.30 With the present social, economic and value structure in India, the change in the educational structure alone is not likely to divert a large portion of the pupils to the proposed vocational stream. The situation in this behalf will certainly improve if the conditions for the success of 10+2+3 educational pattern (stated subsequently) are properly fulfilled. Till then it would appear wiser to make the conditions for change over from vocational to academic stream relatively more stringent except in the case of talented persons. The change over from academic to vocational course, however, should not be made difficult and may even be encouraged.

4.31 Thus while fairly stout bridges should be built linking the vocational and the academic streams, it would be a better strategy to introduce some control in the flow of traffic between the two streams and to interweave this control in the scheme itself. An unrestricted freedom to change over from one stream to the other is likely to create chaos and defeat the purpose of the scheme.

Evaluation or Examination

4.32 For consideration of practical administration of the institution, it might be desirable to make the State Board of Higher Secondary & Vocational Education (by whatever name it is called) to be responsible for conducting examinations for both the academic and the vocational streams. Bearing in mind the special requirements of the vocational stream, an appropriate scheme of examination will have to be formulated by that Board. Standards of training and knowledge should be kept as high as possible and the requirements of the

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employability of the successful candidates in the world of work constantly borne in mind.

4.33 The examination of students of the Industrial Training Institutes is at present conducted by the State Directorates of Training & Employment under the supervision of the National Council of Technical and Vocational Trades (NCTVT). The examination of students of the Polytechnics is done by the State Directorates of Technical Education and NCTVT is not concerned with it. For this latter work, there is now a proposal to establish in each State a Board of Vocational Training, which should be statutory in character.

4.34 While the State Board of Higher Secondary & Vocational Education conducts examination of students of the academic and the vocational streams in the new classes XI & XII, the existing arrangement for the conduct of examination of the pupils of ITI's and Polytechnics may continue. Since the vocational stream will concentrate on non-engineering trades, there will be practically no case for duplication in work. Whenever, however, any engineering subject is incorporated in the vocational stream, the same syllabus, training programmes, and evaluation technology, as operative for that subject in the polytechnics, should be adopted by the State Board of Higher Secondary & Vocational Education. It is to be noted that the equivalence of diplomas or certificates in the same vocational subject, whether issued by the State Board of Higher Secondary & Vocational Education or by some other organization, is most essential from the point of view of both the students and the employers.

Internal Assessment

4.35 A scheme of continuous internal assessment of each student of the vocational stream similar to the one for the academic stream should be prepared and incorporated in the scheme of examination.

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Single subject examination

4.36 Facilities should be provided in classes XI & XII to enable the students to prepare and pass an examination in only one or more subjects at one time. It will help the student to pursue the study of only that subject in which he is interested rather than being forced to take a whole group of subjects. This will not only reduce wastage and stagnation but also help the students to change over from one stream to another at any time by offering that subject which he had not studied earlier and the study of which would make him eligible to join the other stream.

Inspection, Supervision & Direction of Vocational Stream

4.37 The existing state-level machinery for inspection, supervision and direction of the educational institutions will need to be strengthened suitably in order to meet the special requirements of the vocational stream. A small pool of supervisors relevant to the particular vocational courses introduced in the state may be appointed at the head-quarters by the Board of Higher Secondary & Vocational Education or the State Government as the case may be. The inspection panel for each institution should comprise of experts relevant to a particular vocation.

4.38 For day to day supervision and administration of the institution, where the vocational stream has been introduced, the Principal or the Vice-Principal must belong to the area of vocational courses.

4.39 To make the new programme of vocational education effective and successful, a proper directional machinery will also need to be created in the State. To begin with, a special unit manned by specially qualified personnel and headed by an Additional or Joint Director of Vocational Education should be set up in each Department of Education. This unit should incorporate a permanent machinery for demand analysis (vocational survey) for work potential and jobs in the region. The demand analysis is to be continuous

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process because the nature of jobs or vocations in demand is liable to change frequently and new jobs and vocations are likely to emerge. It would therefore be only appropriate if the scheme of vocational education keeps pace with the changing needs and encourages in its programme the emerging vocations and discourages the decaying ones. In due course of time, the State Government may set up a separate Directorate of Vocational Education.

Coordination between Education and Training

4.40 In the modern world, distinction between the academic studies and the training for skills has broken down, for each supplements the other; and such a supplementing is essential to complete both education and training. This principle necessitates that proper coordination is established between the agencies handling education and training.

4.41 The under-mentioned suggestions are made for coordination and cooperation between organizations concerned with general education, technical education, and training of industrial workers (ITIs). A similar system of coordination and cooperation with other programmes of training (and education) should also be possible.

- (1) While the real enrichment of the work experience of pupils of schools of general education will be possible only in the actual institutions/organisations/workshops/establishments connected with the craft or work handled by them, they can also visit the ITI, wherever one exists in their neighbourhood. (There are at present 376 ITIs, on an average one in each district. This imposes a limitation, because the Primary and Middle schools, where work experience is to be organized, are several lakhs in number. Another limitation is due to the fact that the ITIs concentrate on engineering trades. Whenever, however, the visit of the school pupils to an ITI is possible, it will enable them to see some interesting and useful materials as well as tools of work, machines etc. in working condition). Similar visits could also be arranged to Polytechnics & other vocational institutions in the neighbourhood.

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- (ii) Wherever possible, the pupils of work-experience may be taken to the neighbouring ITI several times during the academic session. This will enable those with aptitude for machinic-work to develop a more sustained interest in that work. Some pupils of this category may also be permitted by the ITI authorities to do their project of work experience in the ITI itself. For this purpose, the ITI authorities should consider providing smaller machines and relevant materials.
- (iii) With the same limitation as above, the ITI instructors can be invited to help and cooperate with the teachers of work-experience to raise the quality of instruction given by the latter. Similar invitations could also be extended to Instructors of Polytechnics and other vocational institutions in the neighbourhood.
- (iv) The schools of general education can publicize the existence and programmes of the ITIs in their region. This should enable the ITI authorities to get better category of pupils for admission to their institutions.
- (v) The ITI and the Polytechnic teachers can also help in the orientation of teachers of work-experience and craft teachers working in schools of general education.
- (vi) The Central and the State Boards of Secondary Education should permit the ITI leavers to take the High School (or equivalent) examination as external students. The choice of subjects and the preparation for the examination should primarily be the responsibility of the candidates, but the schools should assist them by organizing special coaching etc. This provision will open avenues for further training or education of the successful leavers of the ITIs and should, therefore, be considered to be highly desirable.
- (vii) Those ITI leavers who have already passed the High School (or equivalent) examination may be permitted to join a suitable course at the higher secondary school or in a polytechnic, if they wish to do so. The facility visualized in this and the above para will introduce an element of elasticity in the Indian system of school education, which is badly called for and which will be good for both the academic and the vocational courses.

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- (viii) While the existing practice of the ITIs offering training in trades, which have been standardised on an all-India basis through NCTVT, should continue, some selected ITIs may offer on a regional basis training of a higher order in a few trades in order to specially meet the requirements of the local industry and to enable the talented pupils to start their career in a higher scale. In this work, help of the teachers of the neighbouring Polytechnics and Engineering Colleges should be made available on part-time basis.
- (ix) Either under the present Apprenticeship Act of 1961 or after amending it, every successful student of the vocational stream at the higher secondary stage and of the polytechnics should be given an opportunity, unless he does not want it, for further practical training in the relevant organizations on payment (by the organization) basis, and appointment to future posts in such organizations should be made out of such apprentices or trainees. (The Apprenticeship Act, 1961 is being handled by the Union Ministry of Labour and Rehabilitation and pupils of the ITIs are taking advantage of it).
- (x) Proper coordination should be established between the educational and vocational guidance service of the higher secondary schools and the employment exchanges. This will be helpful to both. The schools can draw on the information relating to work, employment and further training available with the Employment Exchanges; and provision or proper guidance in the schools will reduce pressure on the employment exchanges and will rationalize the work of the schools and the exchanges.
- (xi) Of the three organizations responsible to conduct public examinations of pupils of the ITIs, Vocational Stream, and Polytechnics, each should have a representative of the other two. This will help in raising the standard of education and training in the institutions and in enabling each to gain from the advance in examination reform made by the other two organizations.
- (xii) The State level work relating to Higher Secondary Education, Polytechnics, and ITIs should be handled by the same Department of the State Government. That is, while separate Directorates for Higher Secondary Education, Technical Education, and Training (ITIs) may continue, their work should, at the secretariat level, be the responsibility of the same Secretary & Minister. Unless this arrangement is made, the desired coordination, which is necessary in the new context, will become difficult. (Such an arrangement already exists in the Govt. of Gujarat. The Govt. of Rajasthan are reported to have decided to do the same, and the Govt. of Tamil Nadu are understood to be considering a proposal for a similar arrangement. There may be some other State Governments too similarly placed, not come to our notice).

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- (xiii) It is desirable to have a body at the Centre to coordinate the broad policies of various Ministries in connection with general education and vocational training.
- (xiv) The decision of the Union Ministry of Education and Social Welfare regarding the particular courses to be started in the area of vocational and technical education or the extent of expansion in them should be based on the information relating to needs of manpower to be supplied by the Union Ministry of Labour and Rehabilitation, which should coordinate all manpower studies and work. Alternatively, the Union Ministry of Labour and Rehabilitation should cooperate in and assist the demand surveys for work opportunities to be organized in each district under the direction of the Union Ministry of Education & Social Welfare.

4.42 The need for appropriate coordination and cooperation between authorities of vocational education and training of various types cannot be over-emphasized. Following the illustrative ideas developed in the above sub-paras, different governments in the country may set up their own coordinating machineries. In the Central Government, for example, the body suggested in sub-para (xiii) can be made more comprehensive (without increasing its size too much) to give equal representation to all central authorities handling vocational education and training of any type.

CHAPTER V

LOCATION OF THE NEW CLASSES XI & XII

5.1 In the National Policy on Education issued by the Government of India in 1968 it was stated that the 2-year stage (classes XI & XII) could form part of the schools or colleges or both. Out of the three States, which have already introduced the new structure of 10+2+3, Mysore has decided to have classes XI & XII in independent institutions called Junior Colleges, although as a transitional measure these classes are at present being run in selected higher secondary schools, composite colleges as well as newly started independent institutions. In Kerala these classes are not attached to schools but form part of colleges which are affiliated to the universities. In Andhra Pradesh, as an interim measure, the 2-year course is in both the schools and the colleges, but it has been decided to have it ultimately in separate institutions only.

5.2 The Committee visited a few institutions of Mysore and came to conclusion that an independent institution with only classes XI & XII could be an economically viable unit if the enrolment was not below 500.

5.3 The Committee examined the pros and cons of locating these classes in schools, in degree colleges, in independent institutions, or in a mixed set up of institutions so that the States while making their own decision could keep these considerations in view.

5.4 The reasons which favour the treatment of the new classes XI & XII as a part of the school system include those mentioned below:-

- 1) Following the recommendations of the Indian Secondary Education Commission (Mudaliar Commission) of 1953, the Government of India had accepted and supported the 11-year Higher Secondary pattern. One of the most serious difficulties in this pattern was that the pupils were compelled to choose

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the particular stream in class IX at too early an age of about 13-14 years. The solution has been found by upgrading the school stage to 12 years with the condition that there should generally be no electives upto class X and specific job-oriented courses should be introduced in the vocational stream in classes XI & XII.

- ii) Locating classes XI & XII in schools would strengthen the Indian system of school education, the need for which has been recommended by practically all relevant Committees and Commissions in the country. In this arrangement the post-graduate teachers who will teach classes XI & XII can be used with advantage for teaching some of the lower classes as well. Even their presence would have a salutary effect on the general tone and standard of the school as a whole. The facilities of laboratories and libraries, which will be better equipped in the case of classes XI & XII, could also be made use of by the students and teachers of lower classes.
- iii) The pupils at the age of 15 and 16 (after passing class X examination) will be too young and immature to take proper advantage of the lecture method and large classes of the under-graduate stage with universities.
- iv) Growth of the above pupils is likely to be inhibited because of the dominance of more grown-up and psychologically a different type of students following the graduate and post-graduate courses in the universities.
- v) After elementary education upto class VIII, it would be appropriate to have an integrated unit of classes IX to XII. This arrangement will provide adequate elasticity to the students to give up their studies at the end of class X or to take up pre-university or vocational education in classes XI & XII.
- vi) The cost per pupil in the new classes XI & XII will be much less if they are a part of the school system. The universities will cost much more for the same work.
- vii) The participation of students of classes XI & XII in the collegiate programmes is likely to further lower down the general standard of higher education in India.

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- viii) It is better for the university authorities to concentrate their resources and energy on raising the standard of higher education rather than frittering the same away on the school stage.
- ix) Politically and otherwise it might be more difficult to persuade the existing higher secondary schools, which have classes IX, X and XI, to part with class XI and become 10-year high schools. On the contrary, they would like to add class XII rather than be down-graded. The difficulty of such a resistance to give up class XI will be solved to a considerable extent if the new classes XI and XII are attached to schools.
- x) The universities, academically oriented as they are, may not be sufficiently interested in the job-oriented and terminal courses to be introduced in the new classes XI & XII even if they can acquire competence to handle these classes. If the job-preparedness of the students is weak, the scheme will fail like the earlier scheme of multipurpose schools.
- xi) With the present trend towards nationalization and establishment of public sector undertakings, help and co-operation of the employers and others in the successful growth of the vocational stream will be easier through the government than through the universities, which are completely autonomous in character.

5.5 The following arguments are often given in favour of attaching the new classes XI & XII to colleges:-

- i) Most of the high schools are already overcrowded and attaching two more years to these classes will make them even more unwieldy.
- ii) As the content of the 2-year course is expected to be of very intensive nature, the colleges will be in a better position to handle it as compared to schools. The universities generally appoint first divisioners and high second divisioners to teach college classes including Pre-University, which is not so with the schools. Also, the scales of pay as prescribed by the U.G.C. for college teachers are higher than those prescribed by the State Governments for Post-graduate teachers in schools and, therefore, better talent among teachers goes to colleges than to schools.

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- iii) The laboratories are better equipped in colleges than in schools.
- iv) Wherever the PUC is now with colleges, the attachment of the two-year course to high schools may involve administrative problems such as transferring of post-graduate teachers from PUC classes to schools.
- v) The colleges may face financial difficulty if the PUC classes are withdrawn from there because the enrolment in the PUC classes is generally quite large as compared to other classes of the college. Naturally the colleges will then claim compensation for the loss of income from the Pre-University classes or raise the fees for the degree classes.

5.6 It might also be argued that it is not desirable to attach the new classes XI & XII either to high schools or to degree colleges as these classes will not receive the special attention which they deserve. According to this view, there should be independent institutions having classes XI & XII so that the new higher secondary pattern functions effectively. The establishment of independent institutions with only classes XI & XII will need funds for the construction of buildings and providing furniture etc. To economise expenditure in this regard, however, it is possible that classes XI & XII may be integrated and separate Higher Secondary schools or Junior Colleges incorporating a few lower classes may be set up for them.

5.7 After discussing the matter in detail, the Committee feels that a decision regarding the placement of classes XI & XII has to be taken by each State on the basis of local conditions. However, it made the following recommendations:-

- i) It is desirable that on academic and pedagogic considerations, the new classes XI & XII should form part of the school system and should, as far as possible, be located in selected schools.
- ii) Independent units having only classes XI & XII can be started if the enrolment in each unit is large enough to make the institution economically viable. In case the independent unit with only classes XI & XII cannot become an economically viable institution, then the unit could comprise of classes IX to XII or VI to XII.

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- iii) As an interim measure, due to financial or any other consideration, the new classes XI and XII could also be located in degree colleges.
- iv) In those places where the PUC has already been transferred to schools, or in the case of those States where a decision has already been taken or is being taken to locate the new classes XI & XII in selected schools, the arrangement need not be disturbed.
- v) Degree colleges which cannot maintain themselves after the PUC classes are taken from them away/may wish to reorganize themselves and concentrate on the new classes XI & XII.
- vi) Irrespective of where the new classes XI & XII are located, the academic control of these classes should vest in the suggested Board of Higher Secondary & Vocational Education.

Selection of existing schools for upgrading them

5.8 Introduction of the 10+2 structure for school education does not mean that all existing high schools or 11-year higher secondary schools should be upgraded and made 12-year schools. The Education Commission (1966) had visualized that if one-fourth of the total number of secondary schools providing ten-year course were raised to higher secondary status with classes XI & XII, they would meet the needs. The Committee feels that in actual practice, this proportion may vary a little from State to State depending upon local conditions, but the anticipated estimate of the Education Commission with respect to the higher secondary schools may not be exceeded generally, provided the institutions having the new classes XI & XII are planned properly and located objectively.

5.9 The institutions where the new classes XI & XII are to be located will have to be selected very carefully. The Committee attaches great significance to this aspect of introduction of the new structure of education, for it has far reaching implications for the success of the whole scheme. Accordingly, to facilitate the work in this

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connection, the following guidelines are suggested:-

- a) There should be a balanced distribution of the new institutions on a regional basis all over the State/Territory.
- b) Each of the institutions where the 12-year course is proposed to be started should be so located that it can draw from the neighbourhood at least 100 students for the new class XI.
- c) Preference should be given to those institutions where Post-graduate teachers are already in position.
- d) In the case of rural and semi-urban areas, preference should be given to those institutions which have hostel facilities.
- e) If the institution is privately managed, it should be ensured that its financial condition is sound.
- f) It should be an adequately developed institution from the point of view of accommodation, library, laboratories, workshops, play-grounds etc.
- g) Before finalising the selection, the institution should be inspected and reported upon by a suitably constituted committee of at least two educationists and educational administrators.

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CHAPTER VI

TEACHERS AND THEIR TRAINING

6.1 Teacher is the central figure in any scheme concerning reform of education. The proposed restructuring of education is not an exception. The reorganization of school and college classes under the new pattern necessitates revision of minimum qualifications for teachers, wherever necessary, and provision of appropriate pre-service and inservice training of teachers to meet the requirements of the new curriculum for both the academic and vocational courses.

Minimum Qualifications of Teachers of Academic Subjects

6.2 For teachers of the new classes IX & X, a Teacher Training Degree with University Graduation should continue to be the minimum qualification as is generally the current practice in our country.

6.3 So far as the new classes XI & XII are concerned, the Committee is strongly of the view that a person who does not possess a post-graduate qualification should not be allowed to teach these classes. It may be noted that in pursuance of the Mudaliar Commission, post-graduate qualification is required even today to teach class XI of higher secondary stage. Since one more class i.e. class XII is to be added under the new structure and as the classes XI & XII will have specialised and advanced courses, a person not possessing a post-graduate qualification will find it impossible to do justice to the subject concerned. The requirement of a post-graduate degree will also be in consonance with the existing practice of insisting upon a post-graduate qualification for teachers who are teaching corresponding Pre-university classes under a university.

6.4 Keeping in view the requirements of the syllabus, it would also be appropriate to insist that the teacher should have obtained second class or at least 45% marks in his Master's degree in the subject concerned.

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6.5 A regular teacher-training degree is not considered essential for the post-graduate teacher of classes XI & XII. However, a short training of about 3 months duration immediately after recruitment would be very desirable. This will acquaint the teachers with the methodology of teaching, psychology of the adolescent children, management of classes, technique of continuous evaluation etc.

Advance Action

6.6 The question of personnel i.e. Principals, teachers and other staff required for the institutions, where the new classes XI & XII are to be started, should be examined carefully and well in time by each State/Union Territory. Where there is a shortage of teachers, timely steps should be taken to train or find and select persons of requisite qualifications.

6.7 In the case of existing teachers who are without a post-graduate degree and are required for certain unavoidable reasons to teach new classes XI & XII, one or both of the following two possibilities could be acted upon:-

- i) Those who are young in age should be asked to obtain the regular post-graduate degree. The Government should help them in securing admission and financing their studies. Suitable provision should be made for study-leave etc. for them.
- ii) Those who are elderly and have a long experience should undergo a condensed post-graduate course of studies and the diploma which they get at the end of such a course should entitle them to receive the salary scale meant for post-graduate teachers. For this purpose, one or more selected universities in the State should agree to organize such a course on regular classroom basis or through correspondence or a combination of the two techniques.

Protection of Existing Teachers

6.8 It is possible that in some places some higher secondary schools may not be considered suitable for being upgraded to the XII standard. These will have to be converted into secondary schools having 10-years course only. This may create some administrative

difficulties, specially in aided schools. To meet these difficulties, the following measures are suggested:-

- a) An assurance should be given that no qualified and regularly recruited teacher will be thrown out of employment simply because of the new structure of education.
- b) The surplus teachers, if any, should be absorbed in the same institution or other institutions under the same management by utilizing their services in connection with the normal expansion programmes, through the introduction of new subjects, or by deploying them in various reorganization schemes undertaken by the States.
- c) Wherever necessary, special protection of service conditions and scales of pay should be granted even though the teacher may have to handle, as a temporary or long-term measure, some lower classes.
- d) In the case of post-graduate teachers and heads of schools supernumerary posts, if necessary, should be created on a temporary basis for those who may be rendered surplus until such time as they are absorbed elsewhere or retire from service.

Pre-service training of teachers of classes IX & X

6.9 Appropriate provision should be made in the existing programme of pre-service training of teachers to meet the requirements of the additional dimensions which have been introduced in the new curriculum. For example, in the training of teachers for Science, the project method should also be taught. This method is now considered more suitable for teaching the subject because of the emphasis on application of science and the development of practical skills and the same has, therefore, been incorporated in the scheme of studies prepared by the Committee. For teachers of Mathematics, training in teaching Modern Mathematics requires to be duly emphasized. In the teaching of languages, training should be imparted in the development of oral skills too; and for that purpose use of linguaphones and language laboratory should be encouraged. Further, a language teacher should be so prepared that he can preferably teach more than one language. In the courses

for B.Ed. or equivalent qualification, provision for training of bilingual teachers may be advisable.

6.10 During their professional training, the prospective teachers should also be prepared for implementing the schemes of continuous evaluation and moral teaching, both of which are being introduced on a national scale.

6.11 To realise the above objectives, not only the existing courses for the teacher training will need a review and revision but suitable summer institutes will also be necessary for the teachers of teachers themselves.

Inservice training for teachers of classes IX & X

6.12 Today, inservice training is in a way even more important than pre-service training and, therefore, it would be absolutely essential to put the inservice training at par with pre-service training of teachers. With the current explosion in knowledge, methodology and technology, it is essential that every teacher is made to undergo an inservice training course at least once in 3 to 5 years. The programme of inservice training will, therefore, have to be tackled on a very large scale so that all the existing teachers are regularly enabled to take advantage of summer institutes, vacation courses, and other refresher courses. The duration of these institutes/courses may vary from subject to subject according to the requirements of each State. In some cases the orientation may be of a long duration and in others it may be of a short duration but with greater frequency.

6.13 Besides arranging inservice courses in the methodology of teaching, content-orientation will also be essential because of the new elements that are being introduced in the curriculum to make it richer as well as upto-date.

6.14 It is presumed that there is an on-going programme of inservice training in each State/Union

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Territory. The Central Institute of Education, the Teacher-Training Institutes and the State Institutes of Education have already on their hands programmes of inservice training of teachers. Obviously, these programmes will have to be continued and strengthened. Available resources should be appropriately deployed for expansion of the programmes.

6.15 In order that the teachers may appreciate the need and value of inservice training, the Government should provide suitable incentive to them.

6.16 Continuous evaluation being a new phenomenon for our country, orientation courses will be required in this area as well so that the assessment is made scientifically and the elements of subjectivity are minimised.

6.17 In determining number of teachers required in a school, provision should be made for extra coaching required by way of remedial teaching for weaker students. The time spent by the teachers for remedial teaching should be duly recognised and the additional hours put in by them should be counted towards normal hours of work. In view of the extraordinary attention which a teacher will be required to pay to the weaker students, selected persons alone should be put on the job. This can be possible only if some prestige is attached to it, so that the teachers may not consider it a drudgery. The State as well as other organizations concerned with the improvement of teaching programmes should collaborate in making the programme of remedial teaching effective. Inservice training of teachers should cover the technique of remedial teaching as well.

6.18 In the case of physical education too special programmes should be drawn up for orientation of the teachers. Physical Education has, so far, not received the attention it deserves. Due place has, therefore, to be given to compulsory physical education

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in all schools and for all children. Minimum number of hours to be put in by each student in a year for receiving physical education should be prescribed as is done in the case of the academic courses. Refresher courses for Physical Education Instructors could be organized in collaboration with the colleges of Physical Education. Appreciation of the importance of physical education should be a part of the training of all teachers.

6.19 Moral Education is a subject where new ground will have to be broken. Our teachers today are not fully aware of how and what to teach by way of moral education. There is hardly any need to emphasise the necessity of inculcating in the young minds the basic values of life. Some schools are already using a few text-books to teach moral education. A brief study of some of these books has revealed that without emphasising any particular religion they serve a useful purpose for imparting moral education. More books as recommended by the Sriprakash Committee have to be written to meet this requirement. Moral education can be imparted not only through classroom teaching, but also through cultural activities and community service. Orientation courses for teachers to impart moral education in a proper manner are very important.

Inservice Training of Teachers of classes XI & XII

6.20 Similarly, inservice training of teachers of classes XI & XII will also be necessary so that the teachers are able to do justice to the enriched syllabus. While planning these training courses special care should be taken of the fact that some of the subjects at this stage will be taught at advanced level and that a part of the syllabus will, in any case, be of the standard as is now taught in the first year of the 3-year degree course. The focus of the inservice training in this case particularly should be on the latest and relevant knowledge of the concerned subjects to be made available to the teachers.

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Recruitment of Teachers for the Vocational Stream

6.21 The area of recruitment of teachers in this case has to be much wider and heterogeneous; and this gives a new dimension to the work of training of teachers of vocational subjects.

6.22 In the early stages of the scheme, the vocational teachers may either be recruited from those who are already working in the respective vocations or their services obtained on loan for short periods with provision for permanent absorption, if possible. Specialists may also be invited to deliver a few lectures on specific topics of the syllabus on payment of suitable honoraria. In the case of such vocational courses, which are allied to the academic courses, the services of qualified post-graduate teachers already in employment can be well utilized. For example, for parts of the syllabus of the subject of Secretarial Practices, the post-graduate teacher in Commerce can be used.

Inservice Training of Teachers of Vocational Subjects

6.23 In view of the heterogeneity of channels from which the vocational teachers will be drawn, their inservice training becomes of added significance. Such a training should be organized with imagination to suit the exact requirements of teachers of the various types of vocational subjects included in the syllabus.

6.24 Training of vocational teachers is perhaps more difficult than the training of teachers for academic courses. In any case, it is a new field. For training some of the teachers it might be possible to take advantage of the Teacher Training Institutes, which have been set up recently for training teachers for the polytechnics.

6.25 Since the practical training of students of the vocational subjects will by and large be in the office, hotel, factory etc. concerned with the

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particular vocation, the owners of factories, hotels etc. should be advised to draw up their own schemes and programmes for the orientation of their personnel in handling the students and training them. The same set up may be examined for being utilised to orientate the teachers of the corresponding vocational subjects in the schools.

6.26 It is suggested that there should be facilities at government level for production of teaching aids and the vocational teachers should be trained in using the aids.

6.27 As stated in the case of teachers for the academic stream, training or re-training of vocational teachers should be done at the expense of the government and the teachers should be treated on duty for the training period.

Parity in salary scales and allowances

6.28 It is strongly felt that where in a State the 2-year stage of classes XI & XII is located as a transitional measure or otherwise both in schools and colleges/independent units there should be no difference in the salary scales, allowances and service conditions of teachers. If parity in these matters is maintained in those States where the 2-year stage is located in schools, colleges and independent institutions, it will solve several difficulties in the introduction of the new educational structure which are otherwise likely to crop in. The experience of Mysore Government in this connection is noteworthy, as the Government has found it useful to have uniformity in these matters in respect of the 2-year stage, although it is for the present located there in schools and degree colleges as well as in independent units called Junior colleges.

6.29 It should be mentioned that it will also be advisable to have the same fee pattern in all such institutions, by whatever name they may be

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called, where the 2-year higher secondary stage is provided for. When the syllabus and training programmes are the same, there will be no justification for introducing different patterns of salary scales and allowances for teachers and the schedule of fees to be charged from the pupils.

Strength of Teachers

6.30 The enlarged curriculum and other elements of the new educational structure necessitate a review of the existing formulae to determine the number of teachers required for a school. The inclusion of moral education and that of work-experience in lower classes leading to a craft or trade will necessitate the appointment of additional teachers. The compulsory teaching of sciences to all pupils of classes IX and X may also call for some strengthening of science teachers.

6.31 Continuous internal assessment is being introduced in all classes. The time spent on this activity will have to be taken into consideration in determining the work-load of a teacher and in deciding the total strength of the teaching personnel of a school.

6.32 In the case of vocational subjects, where more personal attention of the teacher is called for, the pupil-teacher ratio may have to be kept low at about 12:1. For theory classes in the same subjects the corresponding ratio could, however, be around 30:1 as in the case of other subjects.

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CHAPTER VII

OTHER PRACTICAL MEASURES

Preparatory Measures

7.1 As stated earlier, the new structure has already been introduced in the States of Andhra Pradesh, Kerala and Mysore. But a great deal of work still remains to be done in each of them to stabilize the structure, to modernize and upgrade the syllabi, and to introduce effective vocationalization at the higher secondary stage; and every one of these will call for financial assistance.

7.2 The States of Assam, Gujarat, Maharashtra and West Bengal have taken some advance action by way of introducing a revised curriculum in the lower school classes.

7.3 It is suggested that States/Union Territories which have so far not taken any action in respect of the introduction of the new pattern may be advised to initiate the following preparatory measures by way of advance action so as to facilitate introduction of the 10+2+3 educational structure during the Fifth Plan:-

- a) To determine the considerations on which selection of institutions, where the new classes XI & XII will be introduced, is to be made. When this has been done, to make the actual selection of the institutions.
- b) To take up the question of providing the personnel, i.e. Principals, teachers and other staff required for the institutions which will have the new classes XI & XII. In this connection, the shortages or excesses of the personnel should be assessed. Where there is a shortage, timely steps should be taken to train or find and select the persons. In the case of an excess, if any, schemes for suitable deployment of the surplus personnel should be decided upon beforehand.
- c) To re-construct and upgrade the courses both at the school and the collegiate stages. The universities should also be involved in this revision and upgrading of the courses.

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- d) To ensure availability of books on the new syllabi well in time. It should be noted that this is a slow process.
- e) To amend relevant acts, statutes, rules etc. with respect to the Universities, Boards of Secondary/School Education, and grant-in-aid systems, wherever necessary and as the case may be, and to undertake new legislation for establishment of new Boards or bodies in connection with the introduction of the new educational structure.
- f) Where additional accommodation is required or new institutions have to be opened, necessary advance measures should be taken to ensure that the construction of additional rooms/buildings is completed by the required time.

It should be mentioned that the order of all the advance measures cannot necessarily be same for every State/Territory and that in most cases several advance measures may have to be taken simultaneously.

Age Requirement

7.4 Formal education of a child starts in class I alone. The existing situation regarding age of entry to class I varies from State to State. In some it is at 6 plus, and in others at 5 plus.

7.5 The Committee noted that the Central Advisory Board of Education at its 22nd Meeting had recommended 17 plus as the minimum age for entry into university. It had also at that time recommended an 11-year course of secondary education from 6 plus to 17 plus. The Education Commission (1966) has recommended admission to class I at the age of 6 plus (page 150 of the Report). The blue-print on Education in the Fifth Plan published by the Ministry of Education & Social Welfare, Government of India (1972) also refers to enrolment of children of the age of 6 in class I. The Central Advisory Board of Education has in its 36th Meeting held in September 1972 further recommended that there should be pre-primary or preparatory classes before formal education begins in class I.

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7.6 According to the expert technical opinion of Dr. Lalit P. Agarwal, Chief Organiser and Professor of Ophthalmology, Dr. Rajendra Prasad Centre for Ophthalmic Sciences, All-India Institute of Medical Sciences, New Delhi, if the visual stress leading to breakdown of the binocular functions and their coordination with hands and brain is to be avoided the child should not be put to school for formal education before 6 years of age.

7.7 Further, homogeneity of age-group in the same class is highly desirable for raising the atmosphere in the class and the standard of education generally. This practice is being followed in all educationally advanced countries and even in our country in some selected schools maintaining good academic standards.

7.8 The Committee, therefore, considers it necessary that 6 plus is prescribed as the minimum age for admission to class I on uniform basis all over the country. But in view of the fact that the current facilities for pre-primary education are meagre, it might be desirable if at present the age of 6 plus is not made obligatory for all the States. In any case, in order to meet the challenges of the syllabi which will be strengthened under the new structure and keeping in view the fact that classes X and XII under the new pattern will require more maturity on the part of the students, it is necessary to ensure that the students are not allowed to take the class X examination before the age of 15 plus and the class XII examination before they are 17 plus.

Production of Reading Material etc.

7.9 The new syllabus, particularly in classes IX-X, XI-XII, and the degree course in general education, will call for new text-books, other reading material and teaching aids. The preparation of this material often suggests amendments in the syllabus. Because of this and other factors the reconstruction of the syllabus has now to be viewed as a continuous activity. In other words, the syllabus has to be kept under constant review, but the prescribed text books should not be changed too frequently in order to

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reduce the educational expenditure on the students.

7.10 According to the modern technology in this area, every prescribed text-book should be accompanied by a hand-book for teachers, and the text-books should be supplemented with suitable reading material for students and literature for reference by the teachers. This aspect of the production of reading material need to be specially emphasized, more so in the case of the vocational stream where many of the courses might be instituted for the first time and many of the teachers might be drawn from non-educational establishments.

Non-Formal Education

7.11 A beginning has already been made in some of the States to provide two channels of education. One is the traditional formal education imparted on regular class-room basis and the other is own-time education given through correspondence courses and morning/evening and part-time institutions.

7.12 The channel of part-time or own-time education has by now become quite popular at the under-graduate level. There are a couple of Boards of Secondary Education too which impart education through correspondence at the Higher Secondary/Intermediate stage. The Central Board of Secondary Education has recently introduced correspondence courses for the matriculation examination too. It is yet to be seen how far the correspondence course at the matriculation level will be successful. Probably that stage is too early for self-study by the pupils. But it has been explained on behalf of the Central Board that correspondence courses at the matriculation level have been introduced mainly to divert such students, who were hitherto taking the examination privately, to undergo at least some supervised instruction through the school of correspondence courses affiliated to the Board.

7.13 The Committee urges that there is need for the establishment of a channel of part-time education parallel to the channel of formal education at the 2-year stage both for the academic as well as the

vocational streams. The Committee is of the view that the students of the ages of 16 to 18 should be mature enough to undertake self-study with the help of lessons received through post or through some other system.

7.14 There is a large number of young people who are already working in factories and other sectors of employment and are feeling handicapped in their career in the absence of a professional diploma. Similarly, there are students who have to leave their studies half way for financial and other difficulties and who later wish to avail themselves of any opportunity for improving their employability or prospects for promotion by obtaining further education or training on part-time basis. For want of such facilities there are some students who take examinations of the organizations like City & Guilds of London Institute, London, in various trades such as Refrigeration, Printing, Electrical Technician's Course, Tele-Communication Technician's Course etc. If proper facilities are made available in our own country for vocational diplomas through correspondence there is no reason why the students should look at a foreign organization in the future.

7.15 In the area of academic subjects through correspondence courses, the committee feels that there is need for such a facility in science subjects also. At present, the correspondence course lessons are generally available in humanities and commerce only. It would be only proper to extend gradually the scheme of correspondence courses to science subjects at least in the 2-year stage (Classes XI & XII), to begin with. Of course, laboratory facilities and facilities for workshop/field-work will have to be provided to make the science/vocational studies through correspondence courses meaningful and effective.

7.16 The successful organization of a system of non-formal education will meet a felt need of several types of persons in India: those who are out of school for being drop-outs from the regular system or otherwise, those who can progress only at their own peculiar

speed, those who are employed, those who live far away from educational centres, those who cannot take advantage of the formal system because of financial or social or other handicaps, those who wish to acquire intellectual enrichment or training without being keen for a formal certificate, diploma or degree, and those who wish to have information and know-how to pass their spare time constructively or in a more enjoyable fashion. It will also provide for the much needed flexibility of the Indian system of education, which by and large has continued to remain rigid and therefore weak and limited in its impact.

7.17 It is further hoped that the Indian system of education will also be strengthened through the production of self-study kits and good and inexpensive popular literature on science and other subjects, and better use of public libraries, radio, T.V. and satellite communication. All these constitute important agencies of non-formal education.

7.18 It is necessary to emphasize in this connection that both category of students - of the formal and the non-formal system - taking the same examination should be eligible to the same degree/diploma/certificate. In other cases also where the individual has successfully completed a course through one of the non-formal methods and wishes to have recognition, some equation with the certificates etc. issued under the formal system should be established in order to give encouragement and support to the non-formal technologies of education.

7.19 It is urged that proper growth and expansion of a non-formal system of education will provide for greater strength and stability to the new educational structure of 10+2+3.

Scheme of Scholarships

7.20 A number of schemes of scholarships are at present in operation, both at the national and the state levels. In addition, there are some special scholarships earmarked for certain types of education

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or training, e.g. the scholarships for technical education, or the handicapped persons. The national scholarships include those of the U.G.C. and others like the Science Talent search scholarships of the N.C.E.R.T. Most of the State scholarships and several of the national scholarships operate at the school and pre-university or intermediate levels. The Committee noted that the introduction of the 10+2+3 educational structure will call for a review of several of these schemes. It will in particular be necessary to re-determine the educational stage at which some of the schemes of scholarships should commence and the duration and other terms to be laid down for them.

7.21 It is also necessary to institute at the State or national level a special scheme of scholarships earmarked for students of the vocational stream. This will attract talented pupils, who are not very fit for academic or university courses in general education, to join the vocational stream and help in building it up. Continuance of such a scheme of scholarships may be reviewed when the availability of early and worthwhile jobs itself makes the vocational stream sufficiently popular among the students.

Admission Requirement of NDA

7.22 The admission requirement to the National Defence Academy is a pass in the Higher Secondary school of eleven years. The Jawaharlal Nehru University has recently recognised the final NDA examination for purposes of award of a graduate degree in general education to successful cadets of the Academy. With the requirement of a twelve-year schooling for admission to the B.A., B.Sc. and B.Com. degrees under the 10+2+3 educational structure, the NDA authorities will need to review the prescribed qualifications for admission to the Academy if the award of a university degree to the successful candidates is to continue.

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Conditions for Success

7.23 For the success of any new programme of educational reform it is essential that:

- i) all aspects of the programme are properly planned;
- ii) training of the required manpower is undertaken in advance and in time;
- iii) essential in-puts like finance, material resources in the form of buildings, furniture, teaching aids and equipment, curriculum and reading material etc. are all made available;
- iv) administrative machinery is properly geared to the spirit and need of the re-organization; and
- v) while the progress of the scheme is reviewed periodically to incorporate appropriate modifications in it, a restraint is applied not to dig it from the roots each two or three years. This is a very important consideration because an educational scheme, unlike some other types of schemes, takes several years before it can show tangible results.

7.24 All the above considerations automatically apply to the introduction of the 10+2+3 educational structure. Some additional conditions, which are specially relevant to the new structure, include the following:-

- i) In order that the proposed structure, which aims at a broad uniformity of pattern throughout the country, is given a fair trial over a reasonable length of time, a decision should be taken on all-India level that no basic change in this structure will be made in any State/Union Territory unilaterally and that if any such change becomes essential it will be done only after a joint consultation with the Centre and other States and Union Territories.
- ii) The schools to be upgraded to 12-year higher secondary institutions should be selected objectively on the basis of criteria given earlier in this report.
- iii) An effective and successful programme of vocational education, more specially at the higher secondary stage, is operated. As a first step towards this, a permanent machinery should be immediately set up, as suggested in para 4.39 and qualified personnel appointed to it.

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- iv) It should be possible for the students to branch off at the end of class X as well as at the end of class XII so as to enable them to take up gainful work either as employees or in self-employment. To achieve this objective, a policy of delinking university degrees with recruitment for bulk of the jobs should be enforced.
- v) The prescribed qualifications for recruitment to government and other services should be revised so as to be consistent with the job-requirements. Wherever necessary, the minimum age of recruitment should also be lowered to correspond to the end of the new higher secondary stage of education.
- vi) In order to ensure proper development of the vocational stream, suitable wages should be given to those who complete a vocational course. In any case, this wage should not be less than that which may be available to a person who has undergone an academic course.
- vii) The number of admissions to full-time courses should be restricted and the rest be encouraged to join own-time courses (where the capacity is unlimited and where larger numbers are welcome to reduce cost), with the proviso that a) seats are reserved for the underprivileged, b) a large scheme of scholarships and fee-concessions is made available to the poor and talented pupils, and c) the public authority assumes greater financial responsibility of education.
- viii) The private sector may be advised and helped to make available its financial resources to institute fellowships, research assistantships, scholarships, etc., to finance specific research projects in education, science, technology, etc., and to organize appropriate training and refresher programmes for its own employees.
- ix) In order that the products of the new system of education are successful in their life it would be necessary to arrange for a systematic machinery by which all employees irrespective of their status and position continue to update their knowledge by undergoing orientation or refresher courses at regular intervals. The responsibility

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for this work should be shared by all ministries, departments, undertakings and other organizations of the Central and State Governments and all other employers by establishing their own programmes of life-long education for the benefit of their employees.

7.25 The conditions in sub-paras (~~iii~~ & ~~iv~~) above will entail relatively larger amount of work to be done in future by authorities selecting personnel for public and other services. A good part of this extra work could, however, be reduced if the requirements of each job are analysed scientifically in advance so that the prescribed qualifications can be specifically related to the job requirements. In any case, the nation will stand to gain in the long run if we can effectively operate a more valid and meaningful educational structure; and the conditions stated above are a pre-requisite for the success of such an operation.

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CHAPTER VIII

FINANCIAL IMPLICATIONS

INTRODUCTION

8.1 We would have liked to estimate the cost of introducing the new educational structure for every State and Territory separately. But that is not practicable. A basic factor affecting estimation of the expenditure is the location of the new classes XI & XII: with schools, with Degree Colleges, or in independent units with or without lower classes, and the proportion of each variety if more than one of these patterns is introduced in the same State/Territory. Decisions on this point are not known, for they are yet to be taken by several governments and administrations. The estimated expenditure will also depend upon when exactly the new structure is introduced and how soon the work is completed. These factors can be known only when the just-mentioned basic decision has been taken and a detailed programme to carry out the decision is finalized. Under the circumstances, we can only prepare an all-India estimate of the cost based upon certain assumptions.

8.2 In order to project the relevant enrolment and to determine unit costs etc., we issued a simple proforma (Appendix 7) to all the State Governments and Union Territory Administrations requesting them for some basic data. That information has not been received in full from many States and Territories. Best possible use has, therefore, been made of whatever information is available with the Division of Statistics & Information in the Union Ministry of Education & Social Welfare and in the proformas which have been returned to us. Personal knowledge of the members of the Committee with respect to their States and the neighbouring States and Territories has been specially useful.

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ASSUMPTIONS

8.3 The following assumptions made in estimating the all-India cost may be mentioned first:-

(i) We assume that in taking decision about the location of the new classes XI & XII the concerned authorities will be guided by the principles enunciated and the priorities indicated in Chapter V of the report. That is, if the whole country is taken into consideration, in majority of cases, if not in all, the new classes XI & XII will be located in selected higher secondary and/or high schools. To the extent this does not happen, the estimated cost will be affected.

(ii) We have recommended several criteria on which alone the selection of existing schools to be upgraded to class XII level should be made objectively. One of them is that the school is well provided with building, teachers etc. so that the additional expenditure in changing over to the new structure is minimized. This fact has also been borne in mind in working out the cost.

(iii) We assume that when the new syllabus under the 10+2+3 educational structure is introduced, it will normally be done in the new class IX. (In West Bengal, such a syllabus is being introduced in class IX from 1st of January 1974. In Assam, Gujarat and Maharashtra it has been introduced in class VIII). We also assume that the first year of the fifth plan, which is to commence in 1974-75, will be spent in preliminary work referred to earlier in the report. Thus the new classes IX, X, XI & XII will ^{generally} start for the first time in the years 1975-76, 1976-77, 1977-78 and 1978-79 respectively. That is, the new class XII will be in existence for the first time during the last year of the fifth plan.

(iv) Similarly, in the case of U.P., we assume that the year 1974-75 will be spent in preliminary work and a new syllabus leading to three-year degree course in B.A., B.Sc. and B.Com. will be introduced in 1975-76. According to this, the third year class of B.A., B.Sc. and B.Com. courses will come into existence for the first

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time in 1977-78. Thus, during the fifth plan, funds under the new structure will be needed to finance third year B.A., B.Sc. and B.Com. during 1977-78 and 1978-79.

(v) Even if no structural change was brought about, expenditure would have been incurred on providing education at the present high, higher secondary, pre-university and undergraduate stages to pupils whose numbers are increasing each year. This expenditure cannot, therefore, be a charge on the change-over to 10+2+3 structure. A good part of this expenditure will, in the fifth plan, become committed in character and the rest should be found out of the plan allocation for expansion of secondary, higher secondary, pre-university and other stages of education.

(vi) Compulsory teaching of science and one craft or trade has been incorporated in the syllabus of the new classes IX & X (or VIII, IX & X). So far Science has been an elective or optional subject at the high and higher secondary or pre-university stages; and teaching of a compulsory craft or trade at these stages has not been uniformly provided in the government and aided institutions. Hence, simultaneously with the introduction of the new structure provision for teaching of science and a craft/trade will need to be made in all institutions upto class X. This will mean establishment or strengthening of science laboratories, setting up or expansion of work-sheds and equipping them, and appointment of craft teachers wherever needed. But these are items intended to improve secondary education and should have been there on a uniform basis even under the existing structure. We have, therefore, assumed that expenditure on them will be met out of the plan funds invariably provided for improvement of secondary education.

(vii) We have learnt many lessons, through the four Five Year Plans, in the planning and implementation

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of educational schemes. Two of these are:-

- a) That adequate funds are not available for education. Even in the most prosperous countries, the educators are generally not satisfied with the money they have for education.
- b) That it is as difficult to procure funds for education as to spend them most effectively. Even otherwise, there are certain factors inherent in the very process of implementation which delay actual expenditure of the allocated funds and some amount of spill-over does take place in many cases not only in the educational sector of the plan but in other sectors too.

Because of these considerations the estimates of cost, particularly in a developing country like India, must be made as realistic as possible and the available funds spent in the most economical manner. Irrespective of what happens in other sectors of development, in education we have to take every rupee as far as it can go. Education is inter-alia to build correct attitudes of the future generation, and an attitude of economy, and not certainly of miserliness, is today called for in every Indian and in every walk of life.

TWO GROUPS OF STATES & TERRITORIES

8.4 We have indicated in Chapter II that at present in about half of the States and Territories of our country it takes 14 years to obtain the first degree in general education, and, in the other half, 15 years (or 16 years). When the new structure is introduced, the nature of steps to be taken and the estimates of cost will be considerably different in the two groups of States and Territories. We may, therefore, consider the two groups separately.

THE 14-YEAR GROUP

8.5 In the case of States and Territories, where 14 years are required to obtain the first degree in general education, an additional year's education is called for under the new structure.

8.6 The concerned States and Territories are:
Haryana, Himachal Pradesh, Jammu & Kashmir,

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Madhya Pradesh, Maharashtra (except Western Maharashtra and Bombay city), Manipur, Punjab, Rajasthan, Tripura, West Bengal, U.P., A & N. and L. & M. Islands, Arunachal Pradesh, Chandigarh and Delhi. Among these, the case of U.P. is different from all the rest and the same will, therefore, be considered separately.

8.7 We need figures of enrolment in class X during the year 1976-77 in order to estimate the enrolment in class XII during the year 1978-79. This has to be worked out on the basis of the available statistics.

8.8 Detailed statistics for the latest year are available for 1968-69 only. To determine the average annual increase, use is made of the corresponding statistics for the previous years too, i.e. 1966-67, and 1967-68. Combined enrolment figures for classes IX to X/XI are available for 1971-72. Use has been made of this data too in order to arrive at as dependable an estimate of the enrolment as possible.

8.9 On the above basis, the estimated enrolment in class X during 1976-77 has been worked out as 14.2 lakhs as detailed in the following table.

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TABLE 2
(Enrolment figures in 000's)

STATE/TERRITORY	Enrolment during 1968-69	% of columns 2 & 3	Enrolment of classes IX-XI during 1971-72	Estimated enrolment in class X during 1971-72	Average Annual % increase of enrolment in class X during 1966-68	Estimated enrolment in class X during 1976-77
1	2	3	4	5	6	7
Haryana	46.3	117.5	39.4	140.0	55.2	10.4
Himachal Pradesh	17.5	44.2	39.6	50.0	19.8	8.9
Jammu & Kashmir	22.1	53.4	42.1	63.0	26.5	16.8
Madhya Pradesh	121.9	353.2	34.5	373.0	128.7	16.2
Manipur	5.9	12.7	46.1	12.0	5.5	6.6*
Maharashtra	281.7	783.1	36.0	878.0	316.1	8.2
Punjab	71.7	177.3	40.4	207.0	83.6	5.4
Rajasthan	71.8	197.0	37.4	213.0	79.7	9.4
Tripura	5.6	17.1	32.5	22.0	7.2	4.5
West Bengal	161.2	487.2	33.1	613.0	202.9	6.0
A. & N. Islands	0.35	1.0	34.9	1.6	0.56	40.1*
Arunachal Pradesh	0.12	0.4	30.0	N.A.	-	30.7*
Chandigarh	2.3	5.9	38.9	7.0	2.7	5.6
Delhi	42.2	131.4	32.1	149.0	47.8	7.9
TOTAL	850.7	2,375.8	35.8	2,723.0	976.3	9.0
						1415.6

*The percentage increase given in Column (7) against Manipur, A. & N. Islands and Arunachal Pradesh being extra-ordinary could not be taken into consideration in determining the enrolment estimates given in Column (8).

NOTE:- Data in Columns (2) & (3) was obtained from Form-A as returned by the respective state governments and the Territory Administrators to the Union Ministry of Education and Social Welfare. The data in Column (5) is taken from "Educational Statistics at a Glance" which is issued by the Statistics Information Division, Union Ministry of Education and Social Welfare, New Delhi.

8.10 The percentage of passes in the public examination at the end of high and higher secondary stages varies from State to State. The all-India pass percentage at the high school stage is about 44%.

8.11 Thus 44% of 14.2 lakhs i.e. 6.2 lakhs pupils will normally pass out of class X in 1976-77. Since this will be the end of one stage of education, not all pupils will join the new class XI in 1977-78. Taking note of the current practice (including the class X leavers who join Polytechnics, Teacher Training Schools, ITIs and other courses), 70% of those who pass may be assumed to join class XI in 1977-78 under the new structure. This comes to 4.3 lakh pupils.

8.12 In Delhi, where classes IX, X & XI constitute one integrated stage of higher secondary education and where there is no public examination in class X, the enrolment figures in 1971-72 were as under:-^{**}

Class IX	56,248
Class X	54,733
Class XI	48,333

8.13 The above indicates a decrease of 12% in going from class X to class XI. The corresponding decrease in moving from the new class XI to the new class XII may also be assumed to be 12%. Thus allowing for a 12% decrease due to failure and drop-outs in class XI, the enrolment during 1978-79 in class XII of the 14-year group of States and Territories will be about 3.8 lakhs.

* Educational Statistics at a Glance, 1971 issued by the Stat. & Information Division, Union Ministry of Education & S.W., p.26

**The National Committee's Proforma returned by Delhi Administration.

Recurring Expenditure

8.14 The average annual cost per pupil during 1967-68, for which alone the latest relevant data is available*, was as in the following table:-

Table - Cost per student per annum

Type of institution	Av. Annual Cost per pupil
Primary School	Rs. 39.0
Middle School	Rs. 69.0
High/Higher Secondary School	Rs. 139.1
Arts & Science College	Rs. 380.9

8.15 In the National Committee's Proforma returned-in to us, cost per student per annum at the High School and Higher Secondary stages has been supplied by a few States as under:-

Assam: High School & Higher Secondary Stages combined: -----	Rs. 261.50
Gujarat: Higher Secondary Stage -----	Rs. 184.00
Orissa: High School Stage -----	Rs. 160.00
Higher Secondary Stage -----	Rs. 268.00
Tamil Nadu: High & Higher Secondary Stages combined -----	Rs. 244.8
West Bengal: High School Stage -----	Rs. 200.00
Higher Secondary Stage -----	Rs. 320.00 approx

8.16 We assume, for the present purpose, the annual cost per pupil at the new higher secondary stage to be Rs. 350. This will appear to be a little on the high side but this will take into consideration the location of the new class XII in Degree Colleges in a few cases. For 3.8 lakh pupils, the cost works out to be Rs. 13.3 crores.

8.17 In most States, education at the higher secondary stage is not free except for children of the scheduled

*Educational Statistics at a Glance, 1971, Statistics & Information Divn., Ministry of Education & S.W., Govt. of India, New Delhi, p. 24

castes and tribes, and for girls in some cases. The average tuition fee at the new higher secondary stage may be assumed to be Rs.100 per annum per pupil. About 50% of the above enrolment may be expected to comprise fee-paying students. Hence the annual income from fees in class XII of the new higher secondary stage comes to Rs.1.9 crores. Thus the balance of expenditure on the recurring side becomes Rs.11.4 crores.

8.18 In many States, good proportions of the high and higher secondary schools are with private managements, who receive different patterns of grant-in-aid from their governments. On all-India basis, about 60% of high and higher secondary schools during 1965-66 were aided in character, 20% were under State management, and the remaining 20% were under the management of local bodies or unaided private organizations.*

8.19 We assume that 30% of the enrolment under reference will be in government institutions, so that the net direct expenditure in the case of government institutions may be assumed to be 30% of Rs.11.4 crores i.e. Rs.3.4 crores.

8.20 During the year 1965-66, total direct expenditure on aided higher secondary schools of various types was Rs.81.03 crores. Income from fees in the same schools that year was Rs.30.96 crores. Thus the balance expenditure was Rs.50.07 crores. Against this, the government grant was Rs.40.69 crores.** The latter amount works out to about 80% of the balance expenditure. On this basis, the net direct expenditure to be incurred by the States & Territories on aided institutions works out to 80% of Rs.8.0 crores i.e. Rs.6.4 crores.

8.21 Thus the net direct expenditure in the case of the 14-year group of States and Territories may be estimated to be Rs.9.8 crores.

* Education in India, Vol.II, 1965-66, Ministry of Education & Social Welfare, Govt. of India, New Delhi, pp 9 & 11.

**Ibid pp.135 & 137

Indirect Expenditure

8.22 The statistics reveal that about 27% of the direct recurring expenditure on education is indirect in character. This includes direction & inspection, buildings, hostels, scholarships, equipment and others. If buildings and equipment are excluded, the total indirect expenditure is 15% of the total direct expenditure. In the present case, therefore, provision should be made for an additional recurring expenditure of indirect character on the new class XII @ 15% of the direct expenditure. This comes to Rs.1.5 crores.

Total Recurring Expenditure

8.23 Thus the total expenditure of recurring nature during 1978-79 on the new class XII comes to Rs.11.3 crores. If in any State or Territory the new class XII comes into existence during 1977-78, the recurring expenditure will need to be provided for that year also in that State/Territory.

Non-Recurring Expenditure

8.24 On the non-recurring side, the main items to be provided for are class-rooms and laboratory buildings, furniture for the same, science equipment, and initial stock of library books and teaching aids.

8.25 As mentioned before, about 20% of the High and Higher Secondary Schools were, in 1965-66, State institutions. In the case of the new Higher Secondary units during 1978-79, let this % be enhanced to 30%. In that case, expenditure on buildings and furniture of the government institutions will be needed for an enrolment of 1.1 lakh pupils. Expenditure on buildings and furniture in this case may be assumed to be @ Rs.400/- per pupil. Thus the required expenditure on government institutions for buildings and furniture will be
$$\text{Rs.400} \times 1.1 \text{ lakhs} = \text{Rs.4.4 crores.}$$

8.26 Similarly, the estimated expenditure on the remaining enrolment of 2.7 lakh pupils works out to Rs.10.8 crores. Of this, 25%, namely, Rs.2.7 crores, may be provided to be given as grant-in-aid to cover hard cases and others on an ad-hoc basis. If more

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funds are needed for buildings and furniture, these may be found by internal adjustment or the construction work may be staggered a little.

8.27 Thus a total provision of Rs.7.1 crores may be made for buildings and furniture with respect to the 14-year group of States and Territories.

Science Equipment, Library Stock etc.

8.28 There are about 16000 high and higher secondary schools* in the States and Territories under consideration here. Their distribution is as under:-

Haryana	1065
Himachal Pradesh	426
J & K	559
Madhya Pradesh	1656
Maharashtra	5158
Manipur	123
Punjab	1320
Rajasthan	1034
Tripura	89
West Bengal	3935
A & N Islands	9
Arunachal Pradesh	18
Chandigarh	23
Delhi	518

Total: 15,933 i.e. 16,000

Among these, about 3000 units (one-fourth of the high schools) with the new classes XI & XII (and with or without lower classes) may be called for, at least in the earlier stages.

8.29 About 3500 of the schools among the States and Territories under reference are higher secondary (11-year pattern) in character. It is assumed that 2500 of these are selected to be upgraded to the new higher secondary (12-year pattern) type. Science being an optional subject in the new classes XI & XII, it is also assumed that in only 1300 of the 2500 upgraded higher secondary schools science teaching upto class XII will need to be provided. (In Delhi in the

*Educational Statistics At a Glance, 1971 issued by the Union Ministry of Education & S.W., New Delhi, p.7

higher secondary examination of 1973 conducted by the Central Board of Secondary Education, about 50,000 candidates took the examination. Of these, only 11000 had offered science. Similarly, out of 479 government and aided higher secondary schools in Delhi that year, only 276 had provision for teaching elective science. Delhi being obviously a special case, we may assume that on all-India basis it is sufficient to provide science teaching in 52% of the new higher secondary institutions instead of 57% in Delhi). These 1300 schools will need some strengthening in the existing science apparatus and library stock etc. An average provision of Rs.10,000 per school may be made for this strengthening. This means an expenditure of Rs.1.3 crores.

8.30 The remaining 500 units with class XII may be in selected high schools or newly established institutions. Of these, 260 (same percentage as before) may be assumed to need provision for science-teaching in classes XI & XII. Here an initial average expenditure of Rs.25,000 per unit for science equipment and library stock etc. may be provided. This means an expenditure of Rs.0.65 crores.

8.31 Thus a total provision of Rs.1.95 or 2 crores may be made for science equipment and initial stock of library books etc. with respect to States & Territories belonging to the 14-year group other than Uttar Pradesh.

8.32 As regards Uttar Pradesh, introduction of the new educational structure in that State will mean increasing the duration of the first degree course in general education by one year. The financial implications of this programme have been attended to in paras 8.33 to 8.45.

8.33 In this State, enrolment in the B.A., B.Sc. and B.Com. (Pass & Hons.) classes during the six years, for

Contd..

which the latest data is available has been as under:-

<u>Year</u>	<u>Enrolment</u>	<u>%increase</u>
1964-65	67054*	-
1965-66	80052*	19
1966-67	87857*	10
1967-68	101467*	15
1968-69	132001*	31
1969-70	149665**	13

Excluding the percentage increase during 1968-69, which is somehow extraordinary, the overall increase in enrolment is about 14% per annum.

3.34 On this basis, the enrolment in B.A., B.Sc. and B.Com. classes during 1976-77 is estimated to be 2.97 lakhs. From this should be deducted the enrolment in the same classes in the two central universities (Aligarh and Banaras). The latter enrolment in 1969-70 stood at 7392. Increasing this also at the rate of 14% per annum, the estimated enrolment in B.A., B.Sc. & B.Com. (Pass & Hons.) classes in the two central universities in 1976-77 is estimated to be 14500.

3.35 Thus the estimated enrolment in B.A., B.Sc. & B.Com. (Pass & Hons.) classes in the State Universities of Uttar Pradesh in 1976-77 may be taken to be 2.83 lakhs. Of this, the enrolment in the 2nd year class may be assumed to be 1.3 lakhs, for this will be a little less than half of 2.83 lakhs.

3.36 Under the scheme of 3-year degree course, therefore, financial provision will need to be made for about 1.3 lakh pupils in the 3rd year class of the B.A., B.Sc. & B.Com. instruction. Assuming that the year 1974-75 is utilized for preparatory work, as in the case of other States, the 3rd-year B.A., B.Sc. and B.Com. students will be available for instruction in the year 1977-78 for the first time. One more batch, with 14% added enrolment, i.e. 1.5 lakh pupils, will follow during 1978-79, the last year of the fifth plan.

*Reference Form A of the Union Ministry of Education & Social Welfare as returned in by the Govt. of U.P.

**Reference Form B of the Union Ministry of Education & Social Welfare as returned in by the universities in U.P.

8.37 Average annual cost per pupil in 1967-68 in Arts and Science Colleges in Uttar Pradesh was Rs.400.5*. During the fifth plan, this may be assumed to be Rs.450 per student per year. On this basis, the expenditure involved during the two successive years 1977-78 and 1978-79, on the 3rd year of B.A./B.Sc./B.Com. course would work out to be Rs.450 x (1.2 + 1.5 lakhs) = Rs.12.6 crores.

8.38 From this should be deducted the income from fees charged from the students. During 1968-69, the latest year for which detailed statistics are available, average income from fees per student per annum in the Arts, Science and Commerce colleges was Rs.170. Assuming the same basis during the fifth plan and providing for half the students as free scholars, income through fees during the two years 1977-78 and 1978-79 from the 3rd-year students of B.A., B.Sc. and B.Com. classes should be Rs.170 x 1.4 lakhs = Rs.2.4 crores. Hence the net recurring cost should be Rs.10.2 crores.

8.39 In Uttar Pradesh, most of the colleges are privately managed (During 1968-69**, out of 217 Arts and Science Colleges there were 6 Govt. Colleges, 3 managed by local bodies, and 208 privately managed. Of the latter, 40 were unaided). Further, out of total expenditure of Rs.5.47 crores on the privately managed Arts and Science Colleges during 1968-69, Rs.2.44 crores were paid as grant-in-aid by the State Government. This comes to 44% of the total direct expenditure.

8.40 Taking into consideration the expenditure to be incurred on the government degree colleges and taking note of the practice of grant-in-aid to private colleges, the net direct expenditure on the introduction of the 3-year degree course in Uttar Pradesh during the fifth plan may be estimated to be 60% of Rs.10.2 crores mentioned above. This works out to Rs.6.1 crores.

*Educational Statistics At a Glance, 1971, Union Ministry of Education & S.W., New Delhi, p.24

**Reference Form A returned in by the Govt. of U.P. to Union Ministry of Education & Social Welfare.

Non-Recurring Expenditure

8.41 Providing for Rs.500 per student as non-recurring expenditure (Rs.350 for buildings plus Rs.100 for furniture and Rs.50 for science equipment etc.) the total non-recurring expenditure on the enrolment under reference works out to Rs.500 x 1.5 lakhs students - Rs.7.5 crores.

8.42 During 1968-69*, the grant-in-aid on buildings etc. of Arts and Science colleges was 57%. For estimating the expenditure under reference, this figure may be enhanced to 80%, so that the non-recurring expenditure on the government colleges is also covered. Thus the effective non-recurring expenditure works out to 80% of Rs.7.5 crores = Rs.6.0 crores.

An Alternative Approach

8.43 The above non-recurring estimate may be processed through another approach in order to verify whether that provision is inadequate. Suppose by the end of the fifth plan i.e. in 1978-79 there will be 25 government degree colleges and 325 degree colleges receiving grant-in-aid. (It has been reported on behalf of U.P. Government that in 1973-74 there are 13 government and 312 private degree colleges (of which 215 are on the grant-in-aid list) and more have been planned to be opened during the fifth plan).

8.44 For each of the government colleges, a provision of Rs.3.5 lakhs for buildings (for about 1000 additional pupils), Rs.1 lakh for furniture, and Rs.1 lakh for science equipment, library books etc. may be assumed. On this basis, the total non-recurring expenditure in the case of 25 government colleges works out to Rs.137.5 lakhs.

8.45 In the case of aided degree colleges, we may assume an ad-hoc average grant of Rs.1.0 lakh to each college for buildings, Rs.50,000 for science equipment to one third of them, and Rs.10,000 for library books etc. to each of them. (It has been reported on behalf

*Reference Form A returned in by the Govt. of U.P. to the Union Ministry of Education & Social Welfare

of U.F. Government that at present teaching of science is available in only one-third of the private colleges in the State). On this basis, the total works out to Rs.411.5 lakhs. The grand total of both the provisions works out to Rs.5.5 crores, against which we have proposed Rs.6 crores.

Summary (for the 14-year group)

8.46 Thus the following provisions are required with respect to the States & Territories under reference:-

Recurring:	Direct:	Rs.15.9 crores
	Indirect:	<u>Rs. 1.5 crores</u>
Total (Recurring):		<u>Rs.17.4 crores</u>

Non-Recurring:

Building & Furniture	Rs.12.5 crores
Science Equipment etc.	<u>Rs. 2.6 crores</u>
Total (Non-Recurring):	<u>Rs.15.1 crores</u>
Grand Total (R plus NR):	<u>Rs.32.5 crores</u>

8.47 The above expenditure may be phased as under:-

Year	Expenditure		
	Recurring	Non-Recurring	Total
	<u>Rupees in crores</u>		
1974-75	-	1.2	1.2
1975-76	-	3.5	3.5
1976-77	-	5.0	5.0
1977-78	5.6	3.6	9.2
1978-79	11.8	1.8	13.6
Total:	17.4	15.1	32.5

THE 15-YEAR GROUP

8.48 Of the remaining States and Territories in each of which it takes 15 years (or 16 years) to obtain the first graduate degree in general education, Andhra Pradesh, Kerala and Mysore have already introduced the 10+2+3 educational structure. Hence these States should now launch a programme of specific vocational courses at the new higher secondary stage, irrespective of the

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name by which this stage is called. In the case of these States, funds will be needed during the fifth plan to consolidate the new structure and to vocationalize the higher secondary stage of education.

8.49 It is extremely difficult to estimate the expenditure of the consolidation work. As regards the vocational courses, a separate provision is being made in these estimates. We recommend that out of whatever central assistance is made available to the States for the introduction of the new educational structure, a special consideration should be shown to these three States. They have taken lead in changing their educational structure in accordance with the national policy statement on education and have done the work so far entirely out of their own resources. If the Central Government bears the entire expenditure on change of structure during the fifth plan (as has been suggested by us later in the report), we recommend a special grant @ Rs.50 lakhs to each of Andhra Pradesh, Mysore and Kerala during the fifth plan. This may be treated, for the purpose of estimating the cost, to be recurring in character, but a part or whole of it may be permitted to be utilized for non-recurring items too.

8.50 The remaining States and Territories in this group are: Assam, Bihar, Gujarat, Nagaland, Meghalaya, Orissa, Tamil Nadu, Dadra & Nagar Haveli, Goa, Daman & Diu, Mizoram, and Pondicherry.

8.51 Among these, Assam, Nagaland, Meghalaya and Mizoram have been following the same pattern i.e. 13-year higher secondary or pre-university education. In the remaining States and Territories belonging to this group, higher secondary or pre-university education is of 12 years duration.

8.52 To introduce the new structure, these States and Territories will have to re-name the 12 or 13 classes, as the case may be, and introduce a new syllabus leading to a high school examination after 10 years of schooling and a higher secondary examination after 12 years of schooling. Assam has already moved in the same direction,

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Recurring Expenditure

8.53 In all these States & Territories, introduction of the 10+2 pattern would necessitate the appointment of some post-graduate teachers for the new classes XI & XII. Some principals will also be necessary for the newly established institutions, if any, with the new class XII. For the appointment of additional post-graduate teachers and the Principals, and for covering other items on the recurring side - both direct and indirect - an ad-hoc provision of Rs.8.5 crores may be made on the recurring side for the years 1977-78 and 1978-79, (This ad-hoc provision and those in paras 8.54 and 8.55 are being verified subsequently in this section).

Building & Furniture

8.54 In this group also some of the higher secondary or high schools, where the new classes XI & XII are established, may need funds for some additional buildings and furniture. Following the policy with respect to the 14-year group above, if the schools are selected carefully, no major State funds may need to be spent on this item except in the case of the government institutions and some hard cases of private institutions. For this purpose, an ad-hoc provision of Rs.5.0 crores (including about Rs.2.5 crores for government institutions) may be made.

Science Equipment, Library Literature etc.

8.55 In this category of States and Territories also some funds might be needed for strengthening of science laboratory or establishing it and for strengthening the library in some of these institutions where class XII is added. For this purpose and on considerations similar to those mentioned in the case of 14-year group of States and Territories, a non-recurring provision of Rs.2 crores may be made here also.

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Summary (15-year Group)

8.56 Thus the funds to be provided for this group of States and Territories may be as under:-

Recurring:	<u>Rs.10.0 crores</u>
Non-Recurring:	
Building & Furniture:	Rs. 5.0 crores
Science Equipment etc.:	<u>Rs. 2.0 crores</u>
Total (N.R.):	<u>Rs. 7.0 crores</u>
Grand Total (R & NR):	<u>Rs.17.0 crores</u>

8.57 The above expenditure may be phased as under:-

Year	Expenditure		
	Recurring	Non-Recurring	Total
	<u>Rupees in crores</u>		
1974-75	0.7	0.5	1.2
1975-76	0.8	1.5	2.3
1976-77	1.0	2.2	3.2
1977-78	3.0	2.0	5.0
1978-79	4.5	0.8	5.3
Total:	10.0	7.0	17.0

Verification

8.58 One method of verifying the ad-hoc provisions made above can be through the study of expenditure pattern in this regard in Mysore State, detailed information about which is available and which belongs to the 15-year group of States. During the first two years (1971-72 & 1972-73) of the introduction of 10+2+3 structure in that State, the total expenditure incurred was Rs.104.5 lakhs. Practically the whole of this expenditure related to the year 1972-73 and bulk of it was incurred on upgrading salary scales of post-graduate school teachers and Principals of Higher Secondary Schools and creation of additional posts in the higher scale. Further, because of delayed appointment of the personnel, the expenditure was observed to cover a period of 6 to 8 months only.

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8.59 The above expenditure was incurred as grant-in-aid to establish 23 Junior Colleges started during 1971-72 and 22 started during 1972-73 and for upgrading into Junior Colleges 109 government and 134 private higher secondary schools. Their details are as under:-

45 Junior Colleges	-	<u>Rs.25.0 lakhs</u>	
109 Govt. Higher Secondary Schools			
	Recurring	Rs.27.5 lakhs	(for six months)
	Non-Recurring	<u>Rs.10.9 lakhs</u>	
	Total:	<u>Rs.38.4 lakhs</u>	
134 Private Higher Secondary Schools			
	Recurring	Rs.34.4 lakhs	(for 8 months)
	N.R.	<u>Rs. 6.7 lakhs</u>	
	Total:	<u>Rs.41.1 lakhs</u>	
Grand Total:		<u>Rs.104.5 lakhs</u>	

8.60 This means an average expenditure, as far as the State Government is concerned, of about Rs.56,000 per Junior College and combined average of Rs.57,000 per school.

8.61 How does this cost apply to the case of the 15-year group of States/Territories? During 1971-72 there were about 10,000 High and Higher Secondary Schools in the States and Territories under reference except Andhra Pradesh, Kerala and Mysore. Under the new structure, about 2500 units with classes XI to XII may be needed.

8.62 On the same basis as in Mysore, we may need about 400 Junior Colleges and 2100* upgraded schools. On these, expenditure during the first two years (i.e. 1977-78 and 1978-79) should on the Mysore pattern alone be as follows:-

400 x Rs.56,000	=	Rs.2.2 crores
2100 x Rs.57,000	=	<u>Rs.12.0 crores</u>
Total:		<u>Rs.14.2 crores</u>

8.63 Now another approach may be tried. The population of Mysore is about one sixth of the population of States and Territories mentioned under the 15-year group except Andhra Pradesh, Kerala and Mysore. On this basis and following the Mysore practice alone, the total expenditure, during the first two years of introduction of the

new structure in the States and Territories under reference, could be estimated to be about Rs.12.5 crores (Rs.209 lakhs x 6 = Rs.12.5 crores).

8.64 Still another method may be adopted. The enrolment in classes IX-X/XI in Mysore in 1971-72 was 3.38 lakhs. The corresponding enrolment in the States & Territories belonging to the 15-year group other than Andhra Pradesh, Kerala and Mysore in the same year was 22.72 lakhs. The latter is about seven times that of Mysore. On this basis, the estimated expenditure during the first two years of introduction of the new structure in these areas should be about Rs.14.6 crores (Rs.209 lakhs x 7 = Rs.14.6 crores).

8.65 Against the above amounts, we have suggested a provision of Rs.15.5 crores and, in addition, a special grant of Rs.1.5 crores to Andhra Pradesh, Kerala and Mysore.

COST OF VOCATIONALIZATION

8.66 The cost of vocationalization of higher secondary education will vary considerably depending upon the particular courses to be introduced. Vocationalization, in a way, is the most important element of the new structure. It is also a new venture in general education. We, therefore, recommend a policy of very systematic approach in this area so that few mistakes are committed or wrong steps taken.

8.67 Bulk of the energy and attention of the State Departments of Education will, during the fifth plan, be spent in introducing the new structure. The determination of the actual courses for introduction in selected higher secondary schools and undertaking the necessary preparatory measures for the commencement of the courses will also take time. It is expected, therefore, that only a few courses will be possible to be introduced generally in the latter part of the fifth plan. In the absence of specific information about the nature of the vocational courses required to be introduced in each region for which demand surveys have to be conducted as suggested earlier in the report, it is difficult for us to work out the financial implications of the vocationalization. The detailed estimates can only be prepared

by the respective States & Territories themselves depending upon the particular courses desired to be introduced by them. On broad considerations, therefore, we recommend an ad-hoc provision of Rs.10 crores (Recurring - Rs.5 crores and Non-Recurring Rs.5 crores) for the period of the fifth plan. If necessary, an internal adjustment between the suggested provision for recurring and non-recurring items should, however, be permitted. It is further recommended that if the progress of vocationalization is satisfactory and more funds are needed, they should be made available through an extra allocation or an adjustment within the plan so that this important activity is not allowed to suffer because of funds.

8.68 The above expenditure may be phased as under:-

Year	Expenditure		Total
	Recurring	Non-Recurring	
<u>Rupees in Crores</u>			
1974-75	0.3	0.5	0.8
1975-76	0.5	1.5	2.0
1976-77	1.2	2.5	3.7
1977-78	1.5	0.5	2.0
1978-79	1.5	..	1.5
Total:	5.0	5.0	10.0

SAVING IN EXPENDITURE AT HIGHER EDUCATION STAGE

8.69 It is interesting to note that due to introduction of the new pattern a saving in expenditure is expected to accrue at the higher education stage. This is to happen due to more than one reason.

8.70 The enrolment at higher education level will decrease because a good portion of the existing enrolment in the pre-university classes will in future be in the new class XII, which to the extent it is a part of the school system, may be less expensive than if it continued to be a part of university education.

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8.71 The enrolment in the under-graduate classes in general education will decrease partly because of the diversion of some of the high school leavers to the vocational stream at the new higher secondary stage and partly because of two public examinations at the high and higher secondary stage. (This decrease is confirmed by the experience of Mysore State where the new structure has already been introduced). Lesser enrolment at the under-graduate level may also mean a decrease in enrolment at the post-graduate and research levels in due course of time. This should not be a matter for regret because some of those who were not really capable of making full use of higher education might be diverted to other useful channels. In fact, this will be good for these persons, good for higher education, good for the Indian system of education, and good for the national economy.

8.72 A part of the saving in expenditure on higher education will also occur because of the recommended transfer of the pre-medical course to the new class XII, where the instruction will be comparatively less expensive.

8.73 There will be a further saving in expenditure on higher education if the increase in duration of school education means a reduction by one year in the duration of study for degrees like B.E., B.Tech., B.Arch. etc., as has been recommended in the earlier part of the report. And this saving could be considerable in amount because of the very high cost per student for some of these degrees. The period of instruction for these degrees ranges from 4 to 5 years. Reduction by one year will, therefore, mean a saving of 20% to 25% of the existing expenditure. In other words, more than one-fifth of the expenditure on these institutions might be saved.

8.74 Some idea of the saving referred to in the above para can be had from these facts. During 1965-66, direct expenditure on the concerned professional education at the graduate and post-graduate levels was as under*:-

Agriculture:	Rs. 2.97 crores
Engg., Tech. & Architecture:	Rs. 19.43 crores
Forestry:	Rs. 0.04 crores
Vet. Science:	Rs. 1.28 crores
Total:	<u>Rs. 23.72 crores</u>

One fifth of it is Rs.4.7 crores. In a plan period, the total saving may be not less than Rs.23.0 crores.

8.75 As regards the decrease in enrolment and consequent saving in expenditure at the under-graduate level, an idea may be formed from the following facts.

8.76 During 1967-68, enrolment in class X in the whole country was 21.12 lakhs.* About 44% of this, namely 9.2 lakhs, will normally pass the public examination at the end of class X. Even if 75%** of these join class XI, the enrolment during 1968-69 in class XI will be 6.9 lakhs. Even if only 10%[@] of these drop-out or fail in the annual examination in class XI, the enrolment during 1969-70 in class XII will be about 6.2 lakhs. About 55% of them will normally pass the public examination at the end of class XII. This means 3.4 lakhs of pupils. Suppose 70%, as indicated earlier, join I year of the 3-year degree course. Then the enrolment during 1970-71 at the under-graduate level will be of the following order:-

I Year	-	2.4 lakhs
II Year	-	1.7 lakhs
III Year	-	1.2 lakhs
Total:		<u>5.3 lakhs</u>

8.77 The above enrolment is based on a reduction of 28% from 1st year to 2nd year and from 2nd year to 3rd year as revealed by the available data for 1965-66. The latter enrolment*** in B.A. & B.Sc. is as under:-

I Year	-	2.43 lakhs
II Year	-	1.71 lakhs
III Year	-	1.25 lakhs

8.78 Against the estimated enrolment of 5.3 lakhs in 1970-71 under the 10+2+3 structure, the corresponding enrolment in the same year as reported[£] is 47% of 20 lakhs = 9.4 lakhs. (This percentage has been worked out from the latest available detailed statistics which relate to the year 1965-66. That year, total enrolment in general education at collegiate and university level

*Data informally supplied by the Statistics & Information Division of the Union Ministry of Education & S.W., New Delhi

**It should have been sufficient to take this at 70% as in the previous pages.

@In the previous pages, this percentage was taken at 12%

***Education in India, Ibid

£Educational Statistics At a Glance, 1970, Ibid, p. 12

was 13.31 lakhs. The enrolment in the ~~same year~~ at the first degree level in general education was 6.26 lakhs which is 47% of the total enrolment of 13.31 lakhs).

8.79 Thus the gap in enrolment in 1970-71 comes to 9.4 minus 5.3 lakhs = 4.1 lakhs. In terms of expenditure at the rate of Rs.400 per student per annum, the total saving in direct expenditure alone during 1970-71 may be placed at Rs.16.4 crores. In a plan period, this will be more than Rs.80 crores.

8.80 If to this are added the savings due to reduction in the duration of some of the professional degree courses indicated above, the total saving will amount to more than Rs.100 crores in a plan period. This saving will, however, be relevant in so far as the sixth and subsequent plans are concerned when the new structure might have been introduced in all the States & Territories. In that event, it is also expected that the saving will during a plan period be more than Rs.100 crores because of the increasing cost of education.

TOTAL COST IN A NUTSHELL

8.81 Thus with the condition that the new classes XI & XII are by and large made a part of school education or in some cases they are located in independent units with or without lower classes, the total expenditure on introducing the new structure, including vocationalization of higher secondary education, during the fifth plan is estimated to be Rs.60.0 crores. This expenditure may be adjusted to the extent the new classes XI & XII are attached to colleges in some areas. The item-wise distribution of this expenditure is as under:..

Year	Expenditure		Total
	Recurring	Non-Recurring	
	<u>Rupees in Crores</u>		
Introduction of the structure	27.4	22.1	49.5
Vocationalization of Hr.Sec. Education	5.0	5.0	10.0
Total:	32.4	27.1	59.5 i.e. 60.0

Phasing

8.82 On the basis of the calculations indicated in the previous pages, the phasing of the above expenditure may be on the following lines:-

Year	Expenditure		
	Recurring	Non-Recurring	Total
<u>Rupees in Crores</u>			
1974-75	1.0	2.2	3.2
1975-76	1.3	6.5	7.8
1976-77	2.2	9.7	11.9
1977-78	10.1	6.1	16.2
1978-79	17.8	2.6	20.4
Total:	32.4	27.1	59.5 i.e. 60.0

Retrospect

8.83 The above phasing may change because the total expenditure, particularly on the recurring side, may be considerably less during the fifth plan in case the new syllabus leading to the 10-year High and 12-year Higher Secondary School is introduced in class VII or VIII (instead of class IX as assumed in these estimates) as has already happened in a few States.

8.84 The actual expenditure during the fifth plan even on the basis assumed in these estimates is likely to be less than Rs.60.0 crores because of the usual phenomenon of spill-over to the next plan. How much will be that amount is difficult to anticipate.

8.85 Under either of the alternatives indicated above, expenditure during the sixth plan on completing the change of structure and maintaining it may be more than what has been estimated for the fifth plan. But even that expenditure should be well counterbalanced by the saving at the higher education stage which the new structure is expected to yield on an all-India basis.

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CENTRAL ASSISTANCE

8.86 It has been repeatedly brought to our notice by the State Government representatives, during our discussions with them, that while their governments agree in principle to introduce the proposed educational structure they find it very difficult to do so without substantial Central assistance.

8.87 The proposed educational structure will bring about uniformity in the present system of education. This will strengthen national integration and facilitate education of children of the mobile population. This structure will also ^{in due course to} contribute a significant saving in expenditure on higher education, whose coordination and determination of standards, because of the requirements of item 66 in the Union List of the Indian Constitution, is a direct responsibility of the Central Government.

8.88 We, therefore, recommend that the entire expenditure in introducing the suggested educational structure and the vocationalization of higher secondary education during the fifth plan should be met by the Union Government. The position in this regard may be reviewed at the end of the fifth plan.

earmarked funds

8.89 Since the structure of education acts like the foundation of a building, we suggest that the entire development of education in the country should in future be on the basis of the proposed structure. In view of this consideration, we further recommend that the funds in the fifth plan allocated for the change of structure should be earmarked for that purpose ^{and} should be outside the plan allocations of the States.

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CHAPTER IX

SUMMARY OF OBSERVATIONS, CONCLUSIONS AND RECOMMENDATIONS

Philosophy and Purpose

9.1 We have taken note of the recommendations of the Education Commission (1966), the National Policy Statement on Education issued by the Government of India (1968) and the subsequent resolutions passed by the Central Advisory Board of Education and several other all-India bodies, everyone of which favoured the introduction of the broadly uniform educational structure of 10+2+3 in all parts of the country. (1.1-1.7)*.

9.2 We have, however, emphasized that the introduction of the proposed structure all over the country will strengthen national integration. It will send more knowledgeable and maturer students to the universities, will provide an opportunity and a means to introduce appropriate vocationalization of higher secondary education and will reduce pressure on admission to universities and other centres of higher education. It will facilitate implementation of various educational programmes, production of books and reading materials and teaching aids, training of teachers and their movement, reconstruction and modernization of syllabi, and improvement of examination practices. It will remove difficulties in the matter of education of children of the mobile population, which is continuously increasing. It will facilitate solution of the educational problems of minorities in various States. It will contribute to raise the general standard and quality of education at all stages - school and university (1.15).

Statewise position

9.3 We have noted that the States of Andhra Pradesh, Kerala and Mysore have already introduced the proposed structure, that Assam, Gujarat and Maharashtra have introduced in their school classes a new syllabus for

* Such figures in paranthesis in the summary refer to the paras in the report to which the relevant observation conclusion or recommendation relates.

the same purpose, that the school structure in U.P. is already 10+2, and that West Bengal has decided to change the existing pattern to 10+2 from 1st January 1974. We have also noted that the Central Board of Secondary Education whose member-schools include all Govt. and aided schools of Delhi and most of the Union Territories, all Kendriya Vidyalayas (Central Schools), all Sainik Schools, and a good number of public, convent and other all-India schools has also planned to adopt the same structure from 1st May, 1974. We have further noted that in so far as the other States are concerned, the new structure has generally been accepted in principle and the same is being further processed. (2.3)

Curriculum Reconstruction

9.4 The new educational structure does not envisage mere addition of one year to the total period of education or taking away of one class from the collegiate stage to school education or vice-versa. The opportunity of restructuring should be duly utilized by completely reorganizing the curriculum and raising the standard of education at all stages so as to make it internationally comparable. The curriculum should also be in accordance with the current needs of society, allow mobility of children from one State or Territory to another, and help national integration. (3.1).

9.5 In order to provide for a broad uniformity in the curriculum and keep the standard of education as high as possible, we have provided some guidelines and a scheme of studies with the help of which preparation of details of the course-content should be undertaken in various States by the concerned Boards of Education or other expert bodies set up by the State Governments or Territory Administrations. (3.2 and 3.6).

Elementary Stage

9.6 The curriculum for classes I to VIII as developed by the National Council of Educational Research &

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Training should be adopted all over the country with suitable modifications to suit local requirements particularly in the lower classes. Apart from the purely academic subjects, work-experience and physical and moral education should form an integral part of the school programme at this stage and be compulsory for all students. (3.2)

9.7 About 15% of school time should be rationally demarcated for work experience, about 10% for physical education; and about 5% for moral education. (3.2)

Secondary Stage

9.8 The new classes IX & X should provide for a good course of general education. This is too early a stage for any specialization. The curriculum should, therefore, include compulsory teaching of Language(s), Modern Mathematics, Sciences, Social Sciences, Moral Education, Physical Education, and Craft or Trade. The curriculum should, in addition, provide for one optional subject out of the usual academic and practical subjects relevant to this stage of education. (3.5)

9.9 The purpose of the revised uniform structure will be served only if the standard of education is kept as high as possible. The minimum to be covered by the end of new class X should be the syllabus for classes IX & X in the respective subjects prescribed under the existing higher secondary syllabus of the Central Board of Secondary Education (3.6).

9.10 Each school should work for a minimum of 220 days and 1200 hours of instruction in each year. (3.5).

9.11 We have given an illustrative list of crafts for classes IX and X. These can be supplemented before any one craft is chosen for a school or for a group of students in a school. (3.7).

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Higher Secondary Stage

9.12 The curriculum of the new classes XI & XII should be built on the latest curriculum for the new classes IX & X and should provide for two streams i.e.

- 1) Academic Stream
- ii) Vocational Stream (3.17)

Academic Stream

9.13 The objective of the academic stream is to prepare the student for university or higher education, if he wants to avail himself of such education. Higher education, in this context, covers both general education and professional education like Engineering and Medicine. (3.18).

9.14 The curriculum of the academic stream should provide for teaching in five subjects. One of these should be Language & Literature from among the regional language(s), English, and mother tongue, greater weightage being given to the language part. The other four subjects should be chosen out of a list of the available academic and practical subjects relevant to this stage of education. (3.20).

9.15. It is desirable to permit students of the Academic stream to choose any four subjects as electives. However, taking into consideration the limitations of practicability and the usual rules of admission of the Indian universities, the electives may be grouped in appropriate combinations. (3.20).

9.16 Every student of the academic stream should participate, on a compulsory basis, in at least one of the co-curricular activities viz. N.C.C., N.S.C., Physical Education, and Social & Community Service. (3.20).

9.17 A provision at this stage should be made for teaching many of the academic subjects at two levels. advanced and ordinary. It is visualized that the students planning to specialize in a particular academic subject at the university or higher education

level should start studying that subject in depth from the new higher secondary stage itself, and others may offer the same subject at ordinary level. (3.20).

9.18 The minimum standard to be achieved at the end of new class XII should be the standard of the existing 11-year higher secondary syllabus of the Central Board of Secondary Education further raised by the studies equal to one year (3.21).

Vocational Stream

9.19 Vocationalization of higher secondary education should be considered to be an essential ingredient of the proposed structure (4.1).

9.20 The vocational stream at the higher secondary stage should be taken to supplement the existing facilities for vocational education provided by the ITIs, Polytechnics, and vocational schools. (4.2)

9.21 The vocational stream should provide specific job-oriented courses in one vocation carefully chosen out of the areas of work relating to agriculture, industry, trade and commerce, public services (e.g. secretariat, para-medical, insurance, banking, marketing), education etc. (4.5).

9.22 The period of a particular vocational course may vary from 1 to 3 years depending upon the requirements of that course. (4.7).

9.23 The course-content, including the training and practical work, should be such as to equip the student well to get a job or to establish himself as a self-employed person depending upon his choice and circumstances. (4.9).

9.24 While vocational stream at the higher secondary stage should concentrate on courses of non-engineering character, a few of these courses could also be chosen from out of those already introduced in the general

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polytechnics, women's polytechnics, the proposed agricultural polytechnic, and the equivalent vocational institutions, provided that such courses indicate enough work-potential. It is financially, socially and educationally better to introduce such courses in the institutions of general education than to open additional polytechnics for them. Unnecessary duplication should, however, be avoided. (4.7).

9.25 The particular vocational courses to be introduced in any institution of higher secondary level should be locality-oriented. As such, there cannot be a common list of courses for the whole country. It may even vary to some extent from region to region within the same State. (4.7).

9.26 The selection of a particular vocational course should be determined on the basis of a demand survey to find out the potential for work opportunity in the neighbourhood of the school or the region in which it is located. (4.7).

List of Vocational Courses

9.27 We have given a list of vocational courses considered suitable for the new higher secondary stage. This list is, however, illustrative only. It is not even suggestive, nothing to say of its being exhaustive. (4.7).

Course-Content of a Vocational Subject

9.28 The course-content of each vocational subject should include the relevant theoretical knowledge of the allied branches on the academic side. While all such knowledge is to be given, the subject should not be over-loaded with the same, for the emphasis here should be on job-preparedness and not academic instruction. (4.7).

9.29 Every student of the vocational stream should be taught at least one language and its literature. This could be out of the regional languages, English and Hindi, greater weightage being given to the language part. (4.7).

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Collaboration with Prospective Employers

9.30 For the success of the vocational stream it is highly desirable for each institution to make a collaborative arrangement with the concerned establishment (factory, concern, office, hospital, bank, company, hotel etc.) in the region in terms of syllabus making, instructional work, practical training and internship. (4.7).

9.31 The concerned establishment(s) should agree to accept selected students of the particular vocational course as internees under the Apprenticeship Act of 1961 or otherwise with the proviso that if their work is satisfactory, they will be given regular appointments. (4.7).

Education as a Vocational Subject

9.32 Education as a vocational course should be planned to be an alternative channel to train primary school teachers. In addition to training in methodology etc., each prospective teacher should be helped to improve his knowledge of the subjects which he has to teach in the primary schools. He should also be given a more broad-based professional training with knowledge of syllabus-making, book-review, supervision of primary education etc. (4.7).

Syllabus formulation

9.33 We have given, as an example, the pattern of syllabus for one vocational course, namely, Principles and Practice of Trade and Commerce. (4.10).

Characteristics of Vocational Training

9.34 We have noted that the vocational training provided in the higher secondary schools and other vocational institutions should fulfil certain specified requirements. These have been indicated. (4.13).

Vocational Guidance

9.35 For effective vocationalization of higher secondary education, some reorganization and strengthening of the existing educational and

vocational guidance service in educational institutions should be made. The counsellors, career-masters etc. should help the pupils in the choice of the stream and the particular subject(s) at the time of admission to the new class XII. They should also build up a clearing house unit in their institutions and guide and help the students in finding opportunities for work or employment or further training, as the case may be. (4.14).

Review of Multipurpose Schools etc.

9.36 The instruction given in the Multipurpose, Post-basic, Technical High, Junior Technical Schools etc. should be reviewed. They should be reorganized to fall in line with the 10+2 pattern. Some of them with better facilities of workshop or farm etc. should be preferred for the introduction of the proposed vocationalization at the higher secondary stage of education. (4.18).

Area Skill Survey

9.37 The Directorate General of Employment and Training in the Union Ministry of Education and Rehabilitation has undertaken to conduct, on a pilot basis, area skill surveys of 21 districts in the country. The reports of such surveys relating to three districts are available. Each of these reports have inter-alia indicated the number of additional hands needed in the respective districts in specific occupations by 1977, as also the scope for additional numbers to be self-employed within the districts. (4.19-4.22).

9.38 The authorities in charge of vocationalization of higher secondary education in the States should take advantage of such reports. They should take note of the additional man-power needed either in the area of service or in that of self-employment, particularly in the non-engineering trades, and evaluate its implication in the context of the existing facilities for training and the possibilities of expanding them in the concerned districts. For the balance of man-power needed, they should take up

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the question of vocational courses in one or more higher secondary institutions of the district.(4.23).

Work Opportunities

9.39 We have listed for some illustrative vocational courses the likely jobs to be available, the promotion posts to be looked for, and the possible areas of self-employment with respect to those pupils who successfully complete the relevant course. (4.24).

Employment of Vocationally Trained Persons

9.40 Admission to a vocational course at the higher secondary stage should not be taken to be a guarantee for a job, for this will also depend upon the expansion of work-opportunities in the country. But most of the successful leavers of a vocational course will certainly be better placed for work or employment than if they had continued to receive general education of the academic type.(4.25 & 4.26).

Change over from Vocational Stream to Academic Stream and vice-versa

9.41 The vocational stream must not be understood to mean that the student has entered a blind alley. Therefore, facilities should be provided for change over from vocational stream to academic stream and vice-versa. (4.27).

9.42 It will be appropriate to divide the syllabi of the academic and the vocational subjects into units and permit the student to carry over the relevant credit earned by him to the new stream.(4.28).

9.43 In case the student is unable to conduct a whole-time study for the purpose of change-over, he should be allowed to pursue a part-time course, which may be of somewhat longer duration. Those in employment should be allowed some exemption, if the employment is relevant to their vocational studies(4.29)

9.44 While fairly stout bridges should be built linking the vocational and academic streams, it is better to introduce some control in the flow of

traffic between the two streams and to interweave this control in the scheme itself. (4.30-4.31).

Inspection, Supervision and Direction

9.45 The existing state-level machinery for inspection, supervision and direction of the educational institutions will need to be strengthened to meet the special requirements of the vocational stream. A small pool of supervisors relevant to the particular vocational courses introduced in the State may be appointed at the head-quarters by the Board of Higher Secondary and Vocational Education or the State Government as the case may be. (4.37).

9.46 A special unit manned by specially qualified personnel and headed by an Additional or Joint Director of Vocational Education should be set up in each department of education. This unit should incorporate a permanent machinery for continuous demand analysis (vocational survey) for work potential and jobs in the region. In course of time, a separate Directorate of Vocational Education may be set up in each State. For day to day supervision and administration of the institution, where vocational stream has been introduced, the Principal or Vice-Principal must belong to the area of vocational courses. (4.39).

Coordination Between Education & Training

9.47 In the modern world, distinction between the academic studies and the training for skills has broken down. Because of this and other considerations we have made a number of suggestions for coordination and cooperation between organizations concerned with general education, technical education, and training of industrial workers. A similar system of coordination and cooperation with other programmes of training (and general education) should also be possible. (4.41-4.42).

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Examinations

9.48 There should be a public examination at the end of class X and another at the end of class XII or at the completion of the vocational course. (3.8-3.10, 3.22 and 4.32).

9.49 In the examination at the end of class X, subjects of Moral Education, Physical Education and Craft or Trade, need not be examined externally. (3.8).

Quality of Question Papers

9.50 Very special effort should be made to improve the quality of the question-papers in order to improve the quality of the written examination. (3.12 & 3.23).

Practical Examination

9.51 In the same examination in science subjects, provision should be made for a practical test besides the theory papers. The practical examination should include a viva voce, and passing in the practical examination should be obligatory on the part of every student. Project work in science should be encouraged. (3.11 & 3.22).

Oral Examination

9.52 In the examination in languages, particularly in the home examinations, provision should be made for an oral test. (3.5).

Agency of Examination

9.53 For practical and administrative considerations, it is desirable to make the State Board of Higher Secondary & Vocational Education (by whatever name it is called) to be responsible for conducting public examinations for both the academic and the vocational streams. (4.32).

9.54 The arrangement for the conduct of examination of the pupils of ITIs and Polytechnics may continue as at present. (4.34).

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Equivalence of Diplomas/Certificates

9.55 The equivalence of diplomas/certificates in the same vocational subject, whether issued by the State Board of Higher Secondary & Vocational Education or by some other organization, is most essential from the point of view of both the students and the employers. (4.34).

Internal Assessment

9.56 The new scheme should provide for a continuous internal assessment throughout the course of studies. The marks of the students after moderation, wherever necessary, should be incorporated in the Board's certificate in a separate column parallel to the one in which the result of the examination is given under the existing practice. (3.14 & 3.25).

9.57 The result of internal assessment should be expressed in terms of Grades on a five-point scale. (3.15 & 3.26).

9.58 As regards the vocational stream, bearing in mind its special requirements, an appropriate scheme of examination will have to be formulated by respective Boards of Higher Secondary & Vocational Education. A scheme of continuous internal assessment of each student of the vocational stream similar to the one for the academic stream should be prepared and incorporated in the scheme of examination. (4.35).

Single subject examination

9.59 Facilities should be provided in classes XI and XII to enable the students to prepare and pass the examination in one or more subjects at one time. It will help the concerned student to pursue the study of only that subject in which he is interested, reduce wastage and stagnation, and help him to change over from one stream to another at any time by offering that subject which he has not studied earlier. (4.36).

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University stage

9.60 The curriculum for the first degree course in general education should be upgraded and reconstructed by the universities concerned keeping in view the new curriculum for classes XI and XII. (3.28).

9.61 It would be advisable for the universities also to introduce a few vocational courses in addition to the traditional academic courses. These will of course be different from the existing professional courses. (3.28).

Pre-professional courses

9.62 Henceforward, class XII examination should uniformly be the minimum qualification for admission to different professional courses of university level such as Engineering, Medicine, Agriculture, Veterinary Science, etc. Accordingly, the pre-professional course, wherever it exists, should be abolished. The requirements of the pre-professional course may be adequately taken care of in the new curriculum for classes XI & XII. (3.29).

Duration of professional courses

9.63 With success in the new higher secondary examination becoming the admission requirement for professional courses, we recommend that the period of instruction for degrees of B.E., B.Tech., B.Sc. (Engg.) and B.Arch. be reduced from five to four years. (3.30-3.32).

9.64 Similarly, the duration of instruction for B.Sc. (Ag.) should uniformly be made of three years all over the country. (3.33).

9.65 Similar considerations should apply to the period of instruction of other professional degrees like B.Sc. (Home Science), B.V.Sc. and B.Pharm. (3.34).

Duration of first degree in general education

9.66 We are not in favour of the question relating to reduction from three to two years in the duration

of instruction for B.A., B.Sc. and B.Com. degrees being raised again at this stage when the objective of the proposed structure is to pull up the standard of general education at all levels and bring about a broad uniformity all over the country. (3.36).

Location of the new classes XI and XII

9.67 We have examined the pros and cons of locating the new classes XI and XII in schools, in degree colleges, in independent institutions, or in a mixed set of institutions. Our recommendations in this connection are as under:-

- i) It is desirable that on academic and pedagogic considerations, the new classes XI and XII should form part of the school system and should, as far as possible, be located in selected schools.
- ii) Independent units having only classes XI and XII can be started if the enrolment in each unit is large enough to make the institution economically viable. In case the independent unit with only classes XI and XII cannot become an economically viable institution, then the unit could comprise of classes IX to XII or VI to XII.
- iii) As an interim measure, due to financial or any other consideration, the new classes XI and XII could also be located in degree Colleges.
- iv) In those places where the PUC has already been transferred to schools or in the case of States where a decision has already been taken or is being taken to locate the new classes XI and XII in selected schools, the arrangement need not be disturbed.
- v) Degree colleges which cannot maintain themselves if the PUC classes are taken away from them may wish to reorganize themselves and concentrate on the new classes XI & XII.
- vi) Irrespective of where the new classes XI & XII are located, the academic control of these classes should vest in the suggested Board of Higher Secondary & Vocational Education. (5.7).

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Proportion of high and higher secondary institutions

9.68 We realise that the proportion of ten-year and twelve-year institutions may vary a little from State to State depending upon local conditions, but we think that normally the anticipated estimate of the Education Commission to raise one-fourth of the ten-year schools to twelve-year schools may not generally exceed provided the institutions having the new classes XI and XII are planned properly and located objectively. (5.8).

Selection of institutions for upgrading them

9.69 We attach great significance to this aspect of introduction of the new structure of education, for it has far reaching implications for the success of the whole scheme. To facilitate the work in this connection, we have suggested certain guidelines for the selection of schools to be upgraded to 12-year higher secondary institutions. (5.9).

Teachers and their training

9.70 The reorganization of school and college classes under the new pattern necessitates revision of minimum qualifications for teachers, wherever necessary, and provision of appropriate pre-service and inservice training of teachers to meet the requirements of the new curriculum for both the academic and vocational courses. (6.1).

Minimum qualifications of teachers

9.71 For teachers of the new classes IX and X, a Teacher Training Degree with University Graduation should continue to be the minimum qualification as is generally the current practice in our country. (6.2).

9.72 So far as the new classes XI and XII of the Academic Stream are concerned, we are strongly of the view that a person who does not possess a post-graduate qualification should not be allowed to teach these classes. Keeping in view the requirements of the syllabus, it will also be appropriate to

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insist that the teacher should have obtained a second class or at least 45% marks in his Master's degree in the subject concerned, (6.3 & 6.4).

9.73 A regular teacher-training degree is not considered essential for the post-graduate teacher of classes XI and XII. However, a short training of about 3 months duration immediately after recruitment would be very desirable. This will acquaint the teacher with the methodology of teaching, psychology of the adolescent children, management of classes, technique of continuous evaluation, etc. (6.5).

Teachers for vocational stream

9.74 Full-time teachers for the vocational stream could be made available through:

- a) Orientation of selected teachers e.g. teachers of Agriculture, Commerce and Physics;
- b) Recruitment of qualified and suitable persons already working in the relevant establishments and organizations; and
- c) Special pre-service training programmes to be organized by the Regional Colleges of Education or other institutions. (4.7 and 6.21).

9.75 In view of the heterogeneity of channels from which the vocational teachers will be drawn, their training will have to be organized with great care and imagination. For training some categories of vocational teachers, it might be possible to take advantage of the Teacher Training Institutes set up recently to train teachers of the polytechnics. (6.23 and 6.27).

Advance action regarding teachers

9.76 The question of personnel, i.e. Principals, teachers and other staff required for institutions, where the new classes XI and XII are to be started, should be examined carefully and well in time by each State/Union Territory. Where there is a shortage of teachers, timely steps should be taken to train

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or find and select persons of requisite qualifications. (6.6).

9.77 In the case of existing teachers who are without a post-graduate degree and are required for certain unavoidable reasons to teach new classes XI and XII, one or both of the following two possibilities could be acted upon:-

- i) Those who are young in age should be asked to obtain the regular post-graduate degree. The government should help them in securing admission and financing their studies. Suitable provision should be made for study-leave etc. for them.
- ii) Those who are elderly and have a long experience should undergo a condensed post-graduate course of studies and the diploma which they get at the end of such a course should entitle them to receive the salary scale meant for post-graduate teachers. For this purpose, one or more selected universities in the State should agree to organize such a course on regular class-room basis or through correspondence or a combination of the two techniques. (6.7).

Protection of existing teachers

9.78 Conversion of higher secondary schools into high schools may here and there create some difficulties of adjustment of teachers, specially in aided schools. We have made some recommendations in order to remove these difficulties. One of these recommendations is that no qualified and duly recruited teacher should be thrown out of employment simply because of the introduction of the new structure. (6.8).

Pre-service training of teachers

9.79 In the existing programme of pre-service training of teachers appropriate provision should be made to meet the requirements of the additional dimensions which have been introduced in the new curriculum. During their professional training, the prospective teachers should also be prepared to implement the schemes of continuous evaluation and moral teaching, both of which are being introduced on a national scale in classes IX and X. (6.9-6.10).

9.80 For this purpose, not only the existing courses for teacher training will need a review and revision but suitable summer institutes will be necessary for the Professors of teachers themselves. (6.11).

Inservice training for teachers

9.81 With the current explosion in knowledge, methodology and technology, it is essential that every teacher is made to undergo an inservice training course at least once in 3 to 5 years. The programme of inservice training will, therefore, have to be tackled on a very large scale so that all the existing teachers are regularly enabled to take advantage of summer institutes, vacation courses, and other refresher courses. (6.12).

9.82 Programmes of inservice training should specially include updating the teacher's knowledge in his subject(s) of teaching and cover the elements like continuous assessment, remedial teaching, physical education and moral education. (6.13-6.20).

Parity in salary scales and allowances

9.83 It is strongly felt that irrespective of the nature of institution in which the 2-year stage comprising of the new classes XI and XII is located, there should be no difference in the salary scales, allowances and service conditions of teachers. It will also be advisable to have the same fee pattern in all such institutions, by whatever name they may be called, where the 2-year higher secondary stage is provided for. (6.28 and 6.29).

Strength of teachers

9.84 The enlarged curriculum and other elements of the new educational structure necessitate a review of the existing formulae to determine the number of teachers required for a school. The inclusion of moral education and that of work-experience in lower classes leading to a craft or trade in classes IX and X will necessitate the appointment of additional

teachers. The compulsory teaching of science to all pupils of classes IX and X may also call for some strengthening of science teachers. (6.30).

9.85 The time spent on continuous internal assessment activity should be taken into consideration in determining the work-load of a teacher and in deciding the total strength of the teaching personnel of a school. Similarly, provision of extra teachers should be made for remedial teaching to weaker students. (6.31).

9.86 In the case of vocational subjects or that of craft or trade to be taught in classes IX and X, where more personal attention of the teacher is called for, the pupil-teacher ratio may have to be kept low at about 12:1. For theory classes in the same subjects the corresponding ratio could, however, be around 30:1 as in the case of other subjects. (6.32).

Age requirement

9.87 We consider it necessary that 6 plus is prescribed as the minimum age for admission to class I on uniform basis all over the country. But in view of the fact that the current facilities for pre-primary education are meagre, it might be desirable if at present the age of 6 plus is not made obligatory for all the States. In any case, in order to meet the challenges of the syllabi which will be strengthened under the new structure and keeping in view the fact that classes X and XII under the new pattern will require more maturity on the part of the students, it is necessary to ensure that the students are not allowed to take the class X examination before the age of 15 plus and the class XII examination before they are 17 plus. (7.4-7.8).

Production of Reading Material etc.

9.88 Introduction of new syllabi at the school and collegiate levels will call for new textbooks and other reading material. While the syllabi and textbooks should be kept under constant review, the prescribed text-books should not be changed too frequently. (7.9).

9.89 Every prescribed textbook should be supplemented with suitable reading material for students and literature for reference by teachers. (7.10).

Non-formal education

9.90 We recommend the establishment of a parallel system of non-formal education through correspondence, morning and evening institutes, part-time institutions and other methods, particularly at the two-year higher secondary stage, both for the academic and the vocational streams. The students of about 17 years of age are mature enough to undertake self-study with the help of lessons received through post or through other systems of non-formal education. (7.11-7.13).

9.91 The successful organization of a system of non-formal education will meet a felt need of several types of persons including those who are employed in factories and elsewhere. It will also provide for the much needed flexibility of the Indian system of education. (7.14 and 7.16).

9.92 In the area of academic subjects through correspondence courses, we feel there is need for the introduction of science subjects too. (7.15).

9.93 It is hoped that the Indian system of education will be strengthened through the production of self-study kits and good and inexpensive popular literature on science and other subjects, and better use of public libraries, radio, T.V., and satellite communication, all of which constitute important agencies of non-formal education. (7.17).

9.94 Students of both the formal and the non-formal systems taking the same examination should be eligible to the same degree/diploma/certificate. In other cases also an equation should be established between the certificates, etc., issued under the non-formal and the formal systems. (7.18).

Review of schemes of scholarship

9.95 With the introduction of the proposed 10+2+3 structure, various schemes of national scholarships, including the scheme for science talent search and

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the different schemes of scholarships of the State Governments, may need to be reviewed in terms of the stage of education at which each one of them should commence and the duration and other terms to be laid down for them. (7.20).

Scholarships to pupils of vocational stream

9.96 In order to give support and encouragement to the growth of the vocational courses and to divert some talented students to join them, a scheme of merit scholarships should be instituted in every State and Territory for the benefit of students of the vocational stream at the new higher secondary stage. (7.21).

Admission requirement of NDA

9.97 The authorities of the National Defence Academy may have to review the admission requirements of the academy bearing in mind the fact that the Jawahar Lal Nehru University has recently recognised it for purposes of award of the University degree to all successful cadets of the academy. (7.22).

Preparatory measures

9.98 For the States and Union Territories, which are yet to introduce the new educational structure, we have suggested a list of measures for advance action. (7.1-7.3).

Conditions for success

9.99 In addition to the usual considerations, which facilitate the success of any new educational reform, there are some conditions which are specially relevant to the success of the proposed educational structure. Some of these have been suggested by us. (7.23).

Financial implications

9.100 The Committee would have liked to estimate the cost of introducing the new educational structure for every State and Territory separately. But that has not been practicable. The Committee has, therefore,

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prepared an all-India estimate of the cost.(8.1 and 8.2).

9.101 The estimation of the cost has also been done on certain assumptions. (3.3).

9.102 The total expenditure on introducing the new structure during the fifth plan is estimated to be as under:-

	<u>Rs. in crores</u>
- States where it takes 14 years to obtain the first degree in general education	32.5
- States where it takes 15 years to obtain the first degree in general education	17.0
- Vocationalization of Higher Secondary Education	10.0
Total:	<u>59.5</u> <u>i.e. 60.0</u>

(Paras 8.5-8.68, 8.81, and 8.82).

9.103 The above amount may need to be adjusted to the extent the new classes XI and XII are attached to colleges in some areas. (8.81).

9.104 The above expenditure will be less during the fifth plan in case the new syllabus leading to 10-year high and 12-year higher secondary school is introduced in class VII or VIII (instead of class IX) as has already happened in a few States. (8.83).

Saving in expenditure at higher education stage

9.105 The introduction of the proposed educational structure is expected to effect a saving in the anticipated expenditure on higher education. This saving during a plan period may be of the order of Rs.100 crores or more. Such a saving will be effective during the sixth and subsequent plans.(8.69 to 8.80).

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Central Assistance

2.106 The proposed educational structure having a direct bearing on areas of responsibility of the Central Government, we recommend that the entire expenditure in introducing the structure and the vocationalization of higher secondary education during the fifth plan should be met by the Union Government. (8.86-8.88).

Earmarking of funds

9.107 In view of the fact that structure of education acts like the foundation of a building, we suggest that the entire development of education should in future be on the basis of the proposed structure and, therefore, the funds in the fifth plan to be allocated for the change of structure should be earmarked for that purpose and they should be outside the plan allocations of the States. (8.89).



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Sd/- S.L. Singla (Smt.)

Sd/- Samuel Appaji

Sd/- T.N. Dhar

Sd/- R.P. Singhal

Appendix 1

J.VEERARAGHAVAN
DIRECTOR (IF & P)

D.O.NO. 1-18/72-PR-II

GOVERNMENT OF INDIA
MINISTRY OF EDUCATION AND
SOCIAL WELFARE
NEW DELHI, AUGUST 20, 1972

Dear Sir/Madam,

It has been decided to constitute a committee to suggest the practical steps to be taken for the implomentation of the uniform pattern of 10+2+3 for school and collogo classes in all States and Union Territories. The composition of the committee may be seen in the annexure to this letter. I shall be grateful if you could convey your acceptance of the memborship of the above committee.

We would like to have your valuable co-operation in working out the detailed proposals for the implomentation of the uniform pattern of education, but if for any reason it should be difficult for you to participate in the above meetings we should be grateful if you could nominate a senior officer conversant with the problems relating to the introduction of the above pattern to represent you in the committee.

Yours sincerely,

Sd/- J.Vooraraghavan

- i) To Education Secretaries of U.P., Rajasthan, West Bengal, Delhi, Tamil Nadu, Gujarat, Assam, Mysore by name
- ii) To Shri A.H.Hemrajani, Director, Planning Commission, New Delhi
- iii) Copy for information to Education Secretaries of remaining States and Union Territories by name. It is requested that full cooperation and help may kindly be given to the Committee in preparing the estimates of cost and the programme of implomentation.
- iv) Copy for information to:
 - a) Dr.S.M.S.Chari, Joint Educational Adviser, Ministry of Education & Social Welfare
 - b) Shri T.R.Jayaraman, Joint Secretary, Ministry of Education & Social Welfare.
 - c) Shri Kanti Chaudhuri, Joint Secretary, Ministry of Education and Social Welfare.

Sd/- J.Vooraraghavan
DIRECTOR

P.T.O.

GOVERNMENT OF INDIA
MINISTRY OF EDUCATION AND SOCIAL WELFARE

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Subject:- Adoption of a uniform pattern of School
and Colloge classes (10+2+3)

In keeping with the recommendations of the Education Commission (1964-66) and the National Policy on Education (1968), it is now proposed to adopt the uniform pattern of 10+2+3 for school and colloge classes in all States and Union Territories. In order to suggest the practical steps to be taken to immloment this decision, with estimates of cost, the following Committee has been constituted:-

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|---|------------------|
| 1. Dr.P.D.Shukla,
Chairman,Central Board of Secondary
Education,Now Delhi | Chairman |
| 2. Education Secrotary, U.P. | Mombor |
| 3. Education Secrotary, Rajasthan | " |
| 4. Education Secrotary, West Bengal | " |
| 5. Education Secrotary, Delhi | " |
| 6. Education Secrotary, Tamil Nadu | " |
| 7. Education Secrotary, Gujarat | " |
| 8. Education Secrotary, Assam | " |
| 9. Education Secrotary, Mysore | " |
| 10. Shri A.H.Homrajani, Planning
Commission,Now Delhi | " |
| 11. Dr.R.P.Singhal | Member-Secretary |

It will be open to the Education Secretaries to send the D.P.I. or any other Senior officer of the Department who is conversant with the problem to represent them on the Committee.

Sd/- J.Vooraraghavan
Director (Planning)
Ministry of Education & Social Welfare
Now Delhi

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STRUCTURE AND PATTERN OF EDUCATION IN ANDHRA PRADESH

Background

When the State of Andhra Pradesh was formed in 1956, two different patterns of Education were obtaining in the State at the Secondary level a non-elective pattern in Andhra Region and elective pattern in Telangana Region. In either regions it was a structure of 15 years of study for the first Degree and the split up was also similar viz. 8 years of Higher elementary or Middle or lower Secondary stage, 3 years of High School stage, 2 year PUC (this was introduced in 1956-57 in Osmania University area and in 1957-58 in the Andhra University area and S.V. University area) followed by a 3-year degree of the general pattern. There was also the Higher Secondary or the Multipurpose pattern of 4 years duration after class VIII in selected Secondary Schools. The pattern of Secondary and Higher Secondary education was of the Non-elective type in Andhra Region and elective type in Telangana Region. All the 3 universities in the State adopted a general pattern for the 3 year degree course comprising the study of English and a second language under part-I and a group of 3 optional subjects of equal-importance (Sciences or Humanities). Subsequently the S.V. University introduced the special pattern of one main subject and two subsidiaries. Later on the Osmania University adopted the special pattern also in its own colleges (University colleges).

Owing to the different patterns of school education prevailing in Andhra and Telangana regions of the State it became necessary to adopt an integrated syllabus common for the entire State. Such an integrated syllabus was introduced in class I in 1959-60 and taken up Class after class. It reached class VII in 1965-66.

In 1964 (when the Education Commission appointed by the Government of India commenced its work) the State Government convened a high-level conference of Vice-Chancellors, Representatives of Government of India, Eminent Educationists, Representatives of the State Legislature and Educational Administrators presided over by the Chief Minister of the State to consider all aspects and to recommend a suitable structure and pattern of education for the State. After deep deliberations this conference recommended a 15 year structure of education for the State consisting of a 5 year lower primary stage, 2 year Upper primary stage, 3-year high school stage, 2 year higher secondary stage and 3 year first-degree stage - with public examinations at the end of X class and XII class common for the entire State. This conference recommended that the 2-year Higher Secondary course might be conducted in Colleges as well as select Secondary Schools with the same syllabus and one examination for the entire State to be conducted by an independent Board. The State Government accepted these recommendations and adopted the new structure and pattern. Under this re-organised scheme of Secondary Education which was introduced in class VIII during 1966-67 and progressively extended to classes IX and X during the years 1967-68 and 1968-69 respectively, there is a common syllabus for the entire State which is of a non-elective type.

Following the Public examination for the first batch of the new X class pupils in April, 1969, the 2-year higher secondary course under the new structure of education was given the name of 2-year Intermediate course and introduced during 1969-70 in the existing affiliated degree colleges and also in select Higher Secondary/Multipurpose/Secondary Schools upgraded as Junior Colleges. The unselected Higher Secondary and Multipurpose Schools were downgraded as High Schools. Following the new 2-year Intermediate course the Universities in the State are engaged in adoption revised syllabi for the 3-year degree course.

Aims and objectives of the new pattern

The new structure of education is sought to be common for the entire State with the specific objectives of achieving at the end of the new X class a standard equivalent to the XI class of the old pattern and at the end of the XII class a standard equivalent to the old Intermediate course. At the first degree level the universities seek to achieve a higher standard.

At the Intermediate stage, it is proposed to introduce terminal job courses. This issue is engaging the attention of the Board of Intermediate Education.

Reorganisation of institutions under the new pattern

Under the new structure and pattern of education adopted in Andhra Pradesh the middle schools existing during 1965-66 (i.e. the year in which the new VII class came up) were either downgraded as upper primary schools or upgraded as High Schools depending upon the need. Select primary schools were upgraded as upper primary schools. The High school classes of the old pattern and of the new pattern were run concurrently in all High Schools and Higher Secondary Schools till 1968-69. At the end of this year last batch of the XI class of the old pattern and the first batch of the X class of the new pattern took their public examinations. Facilities were provided for the students of the old pattern to take public examinations for a few more years. In regard to Higher Secondary and Multipurpose schools the XII class under the old pattern was run in 1969-70 and students under the old pattern were given facility to take the Board Examination for a few years.

Physical Reorganisation of the Intermediate Course

Following the new X class the 2-year Higher Secondary course under the new pattern was given the name of 2-year Intermediate course and introduced during 1969-70 in the existing affiliated degree colleges (in place of the old one-year FUC) and also in select Higher Secondary/Multipurpose/Ordinary High Schools upgraded as Junior colleges.

Problems faced in switching over to the new pattern

Considering the enriched syllabi under the new pattern, a higher level of teacher competence became necessary. For instance, Secondary Grade Trained Teachers with adequate special ability in the teaching of English were required to handle English from class III in primary schools. Hindi Pandits have to be appointed to teach Hindi

from class V in all the primary schools. Similarly trained Graduates have to be appointed as Headmasters of Upper Primary Schools, besides language Pandits and specialist teachers to cope with the challenging syllabus in the Upper Primary classes. In addition, the teaching of the new syllabus in Science and Mathematics at this stage requires better qualified academic and professional teachers. It would be desirable to appoint Trained Graduates in Mathematics and Science as Headmasters of Upper-Primary Schools.

Appointment of better qualified and competent staff was attempted in a phased programme depending upon the availability of funds in the Plan Schemes.

The new syllabus warrants provision of optimum Science equipment and other teaching aids. There is need for providing adequate and suitable accommodation also apart from play area. The programme of suitably equipping the Upper-Primary schools in the State has to be taken up in a phased manner considering the cost involved.

While Trained Graduates handled High School classes as before, experience has shown that class VIII which was a middle school class under the old scheme should necessarily be handled by a Trained Graduate. To ensure this step provision has to be made for the employment of Trained Graduates in the schools.

The High School syllabus provides for teaching of Physical Sciences and Biological Sciences as separate disciplines. As such the optimum laboratory space and equipment should be provided which will cost about Rs.75,000/- i.e. Rs.50,000/- for additional accommodation and Rs.25,000/- for laboratory equipment. Taking into account the laboratory and some equipment which schools have at present, on average a provision of Rs.50,000/- per school will have to be made towards provision of additional laboratory and additional equipment. This has to be taken up as a phased programme. Provision has to be made for 2 Science Teachers - one for teaching Physical Sciences and one for teaching Biological Sciences. This will mean provision of one additional Trained-Graduate for each of the High schools in the State.

The Junior Colleges established in the State since 1969-70 have to be provided with additional accommodation and equipment. Normally any High School that has been upgraded as Junior College had only one laboratory and Higher Secondary/Multimuruse Schools upgraded as Junior Colleges had two laboratories (one for Physical Sciences and one for Biological Sciences). As per the syllabus of the Intermediate Course there should be 4 laboratories one each for the 4 Science subjects i.e. Physics, Chemistry, Botany and Zoology. On a pragmatic basis Junior Colleges of a small size could be managed with 3 laboratories i.e. one for Physics one for Chemistry and one for Biology i.e. both Botany and Zoology. The cost of Science equipment and laboratory furniture needed for the Junior Colleges vary from Rs.80,000/- to Rs.1,20,000/- depending upon the size of the classes. This is a rock-bottom estimate. Even on this basis almost all the Junior Colleges fall short of the requirement. Initially every Junior College has been

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provided with equipment worth Rs.20,000/- or Rs.25,000/- (for a former Higher Secondary School or High School as the case may be) in addition to the equipment such school already had. It is now assessed that taking the actual shortage in the individual institutions additional equipment and laboratory furniture has to be provided for all the existing Junior Colleges at an average cost of Rs.50,000/- per college.

Additional accommodation has to be provided in almost all the existing Junior Colleges in the State. The number of laboratory rooms to be provided vary from 2 to 3. Most of the colleges need additional class rooms for lack of which the High School classes and Intermediate classes are run in shifts. The intake for a section of Intermediate class is 80 and school rooms are not designed for this higher intake. Wherever possible existing class-rooms have to be renovated, besides providing additional class-rooms of suitable dimensions. On average a provision of Rs.1,00,000/- is needed for each Junior College to provide the needed accommodation. The programme of providing additional accommodation and laboratory equipment for Junior Colleges has to be taken up and completed in about 2 years' time, depending on the availability of funds.

Normally each Junior College has to be provided with the following staff:

Principal: One Junior Lecturer for each subject;
One Physical Director (with a degree in General education and Degree or Diploma in Physical Education);
One Graduate Librarian;
Office staff consisting of a U.D.C., L.D.C., Typist,
4 or 5 Attendants (one for each laboratory separately and one for library; 3 Peons and contingent staff not less than 3).

Depending on the size of the institution additional Junior Lecturers have to be provided with reference to work load and also an office Superintendent and additional U.D.C. for the office etc.

The qualifications prescribed for the Principal or Junior Lecturer is First or Second Class Post-Graduate Degree (a Second Class Post-Graduate must get not less than 50% of marks in the Post-Graduate Degree Examination).

Consequent on the switch over from the old Higher Secondary/Multipurpose pattern to the new 2-year Intermediate pattern the Government made provision to appoint willing and suitable Headmasters and Post-Graduate Assistants (possessing Post-Graduate qualifications) of the former Higher Secondary and Multipurpose Schools as Principals and Junior Lecturers of the new Junior Colleges allowing exemption in respect of those who did not possess a Second Class Post-Graduate Degree. The number of such persons happened to be about 1/4 of the sanctioned posts. The rest of the posts have been filled with First or Second Class post-graduates. In regard to certain subjects like English, Chemistry, Commerce etc., due to dearth of First or Second Class

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Post-Graduates, posts had to be filled temporarily with Third Class Post-Graduates. But it is hoped that in another two-years time there will be no need to go in for Third class Post-Graduates.

The curriculum for the 2 year Intermediate Course provides for Part-I English, Part-II any Classical or Modern Language provided in the syllabus and Part-III a group of 3 subjects in Sciences or Humanities. The intake for Sciences is limited to 40% of the seats (not to exceed 50% under any circumstances) and the rest of the seats are for Commerce and Arts groups.

The Junior College has High School classes attached. It functions as one unit headed by the Principal of the College. Wherever it was practicable, classes below class VIII were shifted to other local schools in order to secure more space and the desired academic environment.

The number of Junior Colleges in the State during the previous 3 years and amounts of additional expenditure incurred on them in the respective years are as follows:

Name of the area	No. of Junior Colleges			Expenditure provided (Rs. in lakhs)		
	1969-70	70-71	71-72	69-70	70-71	71-72
Coastal Andhra	55	62*	67*	13.05	25.32	19.26
Rayalaseema	31	33	36	5.35	13.48	11.15
Telangana	84	86	90	13.00	31.20	42.00
Andhra Pradesh:	170	181	193	32.34	70.00	72.41

*includes Government Junior College, Yanam (Pondicherry Government)

Conclusion

Andhra Pradesh happened to be the first State to introduce the new structure and pattern of education recommended by the Education Commission and accepted by Government of India in their resolution on National Policy on Education. What the Andhra Pradesh adopted in pursuance of its programme of an integrated syllabus common for the entire State turned out to be the National pattern both in regard to structure and content. The objectives are high in that it is sought to achieve a better academic standard than under the old pattern. Naturally the implementation of the new scheme has warranted provision of better physical

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facilities and more competent staff which the State Government is not in a position to afford, exclusively on its own. In the past whenever a new reform whether for schools or for colleges was implemented throughout the country, the Government of India assisted the State Governments through centrally sponsored schemes. Such financial assistance was available to the States when the Higher Secondary/Multigrade Schools were introduced and also when the one year PUC and the 3 year degree course were introduced. By virtue of richer content the new scheme at all levels particularly upper primary, High School and Junior Colleges involves considerable cost. Provision for terminal job courses in Junior Colleges will warrant further increase in outlay. The upgrading of the syllabus for the First Degree following the 2-year Intermediate course will also involve additional expenditure. A successful implementation of the National pattern of education throughout the country will be possible if the Government of India take up at the earliest a Centrally Sponsored Scheme of financial assistance to the States.



A NOTE ON REORGANISATION OF THE EDUCATIONAL STRUCTURE IN
KERALA ON THE PATTERN 10+2+3

The Kerala State accepted the recommendation of the Secondary Education Commission and decided to establish higher secondary schools and organise the secondary school into multipurpose types with diversification of courses. There were 11 standards in high schools then and one year Pre-University Course attached to Colleges. The school consisted of 1 to 5 standards in lower primary section, 6 to 8 standards in upper primary section and 9 to 11 standards in the High School section. In 57-58 the State Government took a second look at the structure and decided to modify the primary section. It was to have 7 instead of 8 standards, lower primary consisting of standards 1 to 4 and upper primary 5 to 7. It was also decided that the High School section would continue to consist of three years but would now be from standards 8 to 10. It was also decided that the syllabus for primary school would be re-organised to cover the syllabus for 8 standards in the new 7 standards. However the idea of converting high schools into multi-purpose schools and introducing higher secondary school of four year duration was still retained. Diversified courses with a vocational bias were introduced in standard 9. The proposal was that the first year of the secondary and higher secondary course, that is standard 8, will be a general education course. The diversification into academic and bias courses would commence from 9th standard. It was intended to bring the 12th standard gradually. It was also decided that academic course in the higher secondary class will be more or less on the pattern of the Pre-University course.

The problem however was how to accommodate the reduction from 8 to 7 standards in the primary school. It was decided to abolish class 8 in the lower primary section. However, since there were already students who were studying under the old system the new syllabus was introduced at standard 5 for pupils who passed standard 4 in March, 58 and this standard was attached to the upper primary section instead of lower primary section as was the case in the past. But along with this the upper primary section was allowed to retain the old standard 5 as students who failed in their old standard VI had to be accommodated. The existing standards mainly 6, 7 and 8 were allowed to continue in the upper primary sections while the new standards in upper primary section 5, 6 and 7 were introduced gradually from the year 58-59. At the end of 1960-61 the students who completed the 7th standard under the new system and pupils who completed 8th standard under the old system passed out of the upper primary school. According to syllabus portions covered in 8 standards had been accommodated in the 7 standards. Hence both these groups of students had attained the same level.

They were accommodated in the revised standard 8 in the new High Schools in 1961-62. This group was larger in strength as it included two years' students. This was expected to pass the S.S.L.C. in 1964 March after three years' study in the High School. This was the first batch which would have done 10 years' of high schooling.

This arrangement did not involve much of administrative difficulties. There were, however, small difficulties like arrangement of classes on two different sets of syllabus to be handled in the upper primary classes for a period of three years and the necessity for making special arrangement for public examination as the number of students coming in the first batch to 10th standard was large. There was also some strain on the teachers in upper primary stage as they had to teach two classes with different syllabus though the difference was only nominal. This arrangement gave time to the University and Government to think of organising the higher secondary course or the two year, the Pre-degree course at the end of the 10th year. Government and University had nearly three years' time to prepare. The University initiated action in 1962 and set up a committee to examine the implications and arrangements to be made for the pupils who come up for higher education after 10 year course. The question before Government and the University was whether the two year course should be of the higher secondary pattern or should be attached to the University. Originally while introducing the 10 year pattern the decision was that we should switch over to the higher secondary pattern. But subsequent thinking showed that there were problems which had not been contemplated earlier. Ultimately Government and University decided to switch over to two year pre-degree course. This was a decision taken after mature consideration of the various aspects involved.

The reasons which weighed with the authorities could be summarised as follows: The Pre-University Course was already in the University Stage. There were arrangement and experience available there, for organising the courses. On the other hand the idea of having a 12 year higher standard course was entirely new and the experiment would have to be taken anew. It was felt it would be better to make use of the experience and arrangement available than go in for a new experiment. The course of study proposed was more in the nature of preparation of students for higher education. Hence it would be better to associate them with colleges rather than with schools. It was natural to expect the University to have a closer control over this course than the department of education. The pattern of instruction, the type of classes, the technique of teaching were different at the Pre-degree stage. It was also preparation for higher education sphere. These aspects favoured the location of this course in colleges.

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We required teachers with higher qualifications and better emoluments. These cannot be provided at higher secondary stage without affecting the structure of salary in the school stage. Attaching the course to the colleges made it possible to exercise greater restriction and selection in admission and strength, while at the school stage with the enormous expansion at the high school stage this would have been very difficult. In fact the number of schools which would have clamoured for higher secondary classes would have been quite large and Government could not have withstood the pressures for opening higher secondary schools in large numbers thus opening the channels for higher education to a wider extent than could have been sustained. Attaching the course to the high schools would have been meant collection of low tuition fees and greater financial commitment on account of payment of salary to teachers and staff and grants-in-aid; while attaching it to colleges meant levy of higher fees and making these institutions more or less self-sufficient. Further with the popular demand for abolition of fees at school level, the movement would need easily spread to the higher secondary level also. The department of education already over-burdened with enormous expansion might not have sufficient time to give attention to this sector to maintain standards and improve them. The alternative suggestion of having an independent board was also thought of but again it was felt that this was only in the nature of an experiment and it could introduce unforeseen difficulties and problems which might endanger the scheme. The idea of having both higher secondary and Pre-degree courses together was rejected as unworkable and impractical. On the whole this experiment has worked well. But certain problems have come up like the University Education being over-burdened with large numbers at pre-degree level thus compelling the University to give disproportionately greater attention to this at the cost of perhaps the degree and post graduate courses. The pressure for expansion makes it difficult for University to handle this matter imaginatively. The two year course has become rather useless except as means to prepare students for higher education. One of the most attractive features of higher secondary school course was making it possess a vocational bias. It has not been possible to introduce it in the Pre-degree course. The two years here are a waste for those who do not go for higher education. The Kerala University try to have Pedagogy course but they did not succeed due to various reasons one of which was the problem of providing practical work. This is only to indicate that the Pre-degree course, is not without its defects.

The pattern and content of the Pre-degree course introduced by the Kerala University were as follows:-

1. The course included the portions covered in the Pre-University and Pre-professional courses. Students who pass this course with the appropriate optional subjects can proceed directly to professional courses in Engineering, Medicine, agriculture, Veterinary Science etc.

Since students who passed this two-year Pre-Degree course with the appropriate optional subjects could proceed directly to professional courses in Engineering, the Engineering course reverted to the old four-year pattern with effect from the academic year 1966-67. The Pre-professional course in Medicine was discontinued from June, 1966.

2. Only those who have completed the age of 14 on 1st October in the year of admission shall be eligible for admission to the new course. This would be a transitory provision and would need to be raised later to 15 plus so that the all-India pattern of 17 plus for admission to degree courses might be reached in due course.

3. The following is the pattern of the two-year integrated course:-

Part I: (a) English
(b) Any one of the following languages:-

1. Sanskrit
2. Malayalam
3. Tamil
4. Hindi
5. Urdu
6. Kannada
7. French

Part II - Any three optional subjects from the group of subjects under (a) or (b) and one of the two subjects listed in (c)

Group (a)

1. Physics
2. Chemistry
3. Mathematics
4. Biology
5. Botany
6. Zoology
7. Geology
8. Anthropology
9. Psychology
10. Physiology
11. Household Arts

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Group (b)

1. Indian History
2. World History
3. Logic
4. Civics
5. Economics
6. Commerce
7. Psychology
8. Geography
9. Mathematics
10. Commercial Correspondence and Secretarial Practice
11. Shorthand & Typewriting
12. Book-keeping & Accountancy
13. Music
14. Painting
15. English
16. Malayalam
17. Sanskrit (Sahitya)
18. Sanskrit (Sastra)
19. Hindi
20. Telugu
21. Bengali
22. Arabic
23. Tamil
24. Kannada
25. Urdu, 26. Syrian
27. Persian, 28. Hebrew

N.B. - Biology should not be combined with either Botany or Zoology. Out of the language subjects (15 to 28) not more than two shall be chosen.

- Group (c) 1. General Science
2. Social Studies

Those who choose optional subjects from group (a) will take special studies in group(c) and those who choose optional subjects from group (b) will choose General Science under group (c).

The Pre-degree Course was introduced in 1964-65 in all the Arts and Science Colleges which were conducting Pre-University Course and in all the Junior Colleges newly started during that year. This course was introduced in 50 existing Arts and Science Colleges. We had to start 32 new junior colleges, Altogether 82 colleges provided this course in 1964-65. The number of students who joined this was 30,000. There were 3,500 students for the old one year course, In 1965-66 we opened 17 more new junior colleges. Majority of the junior colleges are under private management.

The one-year Pre-University Course was continued in a few selected colleges in 1964-65 also for the benefit of candidates who were eligible to appear for the S.S.L.C. Examination up-to March 1964 and qualified for admission to the University.

Steps had to be taken to prepare colleges for admitting students. Action was taken to notify the starting of this course. Both Government and private management were asked to apply for permission to introduce Pre-degree courses. The response for the private management was quite encouraging. One of the reasons attributed for this is that the Pre-degree courses are comparatively easy to run with care and economy. Money could be saved from the income which could be used to meet the expenditure on the degree and post graduate degree course. In other words the management saw in this a way to make the colleges more viable. Hence they were willing to put in the necessary investment required and on the whole the response was quite satisfactory. The standards of equipment on these institution could also be considered quite satisfactory. However, the University gave them sufficient time to put up building and laboratories and equip the laboratories. Commissions of experts were sent out and reports were obtained. It was only on the basis of clear report that the courses especially Science Courses were allowed to be started. This transitional arrangement for one or two years did not cause much of administrative confusion. Subsequently they have settled down to smooth routine. Three-year degree course were already

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in vogue from 1957-58, preceded by 1-year Pre-University. In 1966-67 they were only reorganised, following the introduction of 2-year Pre-Degree Course.

It is possible to arrange the shifting over on a planned basis covering 5 or 6 years quite smoothly if preparatory action is taken in time and arrangements are made anticipating difficulties likely to arise. The close co-operation and unified action on the part of University and Government authorities helped considerably in this matter. Large financial investment was required. But the private managements put in considerable efforts and raised the funds required.

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IMPLEMENTATION OF THE 10+2+3 EDUCATIONAL STRUCTURE
IN MYSORE STATE.

The idea of introducing the two year Pre-University Course replacing the then existing one year P.U.C. was engaging the attention of the State Government since 1964. This had the support of the Vice-Chancellors of the three Universities also.

With the release of the Education Commission Report in June 1966, the question was pursued with vigour and the matter was considered in October, 1968 by the State Advisory Board of Education which recommended the introduction of the two year P.U.C. from 1971-72. This was welcomed by the Vice-Chancellors of the three Universities of the State who met on 19th October, 1968.

In pursuance of the recommendation of the Education Commission and the State Advisory Board of Education, the State Government decided to abolish the electives at the High School stage and to introduce the two year Pre-University Courses with electives from 1971-72, the year when the first batch of students taking the S.S.L.C. Examination with the electiveless syllabus would join the I Year P.U.C.

Government also set up in December, 1968, an Ad-hoc Committee with the Minister for Education as Chairman and the Vice-Chancellors of the three Universities, the Education Secretary, Director of Collegiate Education, Director of Technical Education and the Director of Public Instruction as Members to draft a bill for setting up of the Board of Pre-University Education and to frame the syllabus for the proposed two year Pre-University Course. Government also appointed a senior experienced Officer from the Mysore University as Officer on Special Duty to work out the details of the scheme and to prepare the ground for setting up of the Board.

The Ad-hoc Committee decided on the scheme of the two year P.U.C. and appointed various Committees consisting of the Heads of Departments of various subjects of the three Universities for drafting the syllabus. The draft syllabus was further considered by a Curriculum Co-ordination Committee consisting among others of the Deans of Faculties of the three Universities and given a final shape.

The Special Officer in the meantime paid visits to Andhra Pradesh and Kerala where the scheme of two year Pre-University Course had already been introduced and submitted a detailed report.

In December, 1970, Government set up through an Executive Order the first Board of Pre-University Education and defined its powers and functions (vide Annexure A). The Board was to be an advisory body, pending its formation into a Statutory Body in due course.

Government simultaneously passed orders setting up the Department of Pre-University Education, headed by the Director of Pre-University Education, who was also the ex-officio member Secretary of the Board. Necessary subordinate staff was also provided.

The first task of the Board was to give final shape to the regulations, courses of study, syllabus etc., after taking into consideration the comments received from educationists and teachers etc., on the draft regulations and syllabus framed by the Ad-hoc Committee and circulated.

This work, it completed before the commencement of the academic year 1971-72.

The Board also framed norms for starting of new Junior Colleges, the staff pattern, work load, service conditions, pay structure, etc., and got them approved by Government, so that the new two year P.U.C. could be introduced without any hitch from the beginning of the academic year 1971-72.

On the eve of this reorganisation, there were 190 Composite Colleges, teaching the one year P.U.C. and 380 Higher Secondary Schools, having the XI standard. The XI Standard in the Higher Secondary Schools corresponded to the one year P.U.C. in the Composite Colleges. They followed the same syllabus and the Universities conducted the examinations for the XI Standard students on identical lines as for the P.U.C.

Government took a decision to allow the new two year P.U.C. to be run in :-

1. The Composite Colleges which already had the one year P.U.C.
2. Selected Higher Secondary Schools which had the XI Standard corresponding to the one year P.U.C.

and

3. Junior Colleges, to be started here-after, having only the two year P.U.C.

As the Board had come into existence only in December, 1970 and the new two year Pre-University Course had to be introduced from the academic year 1971-72, the Board had little time to screen all the 380 Higher Secondary Schools to find out which of them deserved to be permitted to introduce the new year P.U.C. So all of them were requested to make an application to the Board and all those that applied (312 applied) were permitted as an interim measure to start the I Year P.U.C. during 1971-72 with the specific understanding that during the course of the year 1971-72 they would be screened and only those that fulfilled the norms laid down by the Board would be permitted to have the II year P.U.C. during 1972-73 and the others which did not come up to expectations would have to close down the P.U.C. classes altogether and revert into High Schools having only VIII, IX and X standards

During 1971-72 Government set up 20 Inspection Committees at the rate of one for each district to visit every one of these 312 Higher Secondary Schools and to assess to what extent they had the necessary educational facilities for being upgraded into Junior Colleges by the addition of II Year P.U.C. class from 1972-73. Each of these Committees was headed by an academic member of the Board or an University Professor, and had as its members, a Principal of a College, Head Master of a Higher Secondary School, the Deputy Director of Public Instruction of the district and an Officer of the department of Pre-University Education as Member-Secretary.

Keeping in view the educational needs of the locality, the existing educational facilities, economic viability of the institution, these Committees recommended suitable institutions for upgrading. The Board in turn screened these recommendation and submitted proposals to Government. Government, after considering all aspects permitted to upgrading of 243 Higher Secondary Schools (109 Government plus 134 Non-Government).

The Board also invited and received applications from Private Registered Bodies for starting of Junior Colleges (teaching only the two year P.U.C.). 31 such applications were got inspected by Committees set up by the Board. 23 were selected and recommended to Government. Accordingly, Government permitted the starting of 23 Junior Colleges in different parts of the State during 1971-72. All these were in the private sector. During 1972-73, 22 more Junior Colleges were permitted to be started. These were also in the private sector.

During March 1972, the Board conducted the I Year P.U.C. Examination for about 62,000 candidates at 256 examination centres distributed all over the State, under the new rules framed by the Board.

The Board has laid down that only post-graduate teachers be appointed to teach the P.U.C. Classes. Government sanctioned the scale of Rs.300-700 for lecturers and Rs.400-950 for the Principals of Junior Colleges.

Government have passed orders that these Junior Colleges are entitled to grant-in-aid as per the provisions of the grant-in-aid code of the Collegiate Education Department (80% of the net deficit). The P.U.C. classes in upgraded Higher Secondary Schools are also entitled to grant-in-aid under the same rules.

The standard rate of fees for P.U.C. Classes has been made uniform in all kinds of institutions and the tuition fee has been fixed at Rs.90/- per annum the private colleges being permitted to charge up to double the standard rate of fees, the extra so collected would enable these institutions to make up the 20% of the net deficit which they have to cover.

As the Pre-University syllabus has been upgraded, the Universities have also initiated action to upgrade the syllabus for the degree courses.

Pre-professional courses have been abolished consequent on the introduction of the two year Pre-University Course.

The lengthening of the educational course by one year has thrown an additional burden on the State's resources, which the State Government have already accepted, in view of the fact that the new pattern contributes towards improvement of standards.

There is additional burden on the parents too as they have to pay for an additional year of schooling. Also the rate of tuition fee in Higher Secondary Schools has been enhanced from Rs.60/- (which was being charged for XI standard) to Rs.90/- per annum, not to mention the increases in Laboratory and other kinds of fees. By and large these additional

levies have been received well and with little protest from the public, as the public are now assured of higher education to their children in Junior Colleges, and at the hands of teachers with post-graduate qualifications.

FINANCIAL IMPLICATIONS.

During 1971-72 there was no extra cost of Government on account of introduction of the I Year of the two year Pre-University Scheme in the Composite Colleges and Higher Secondary Schools as the I Year P.U.C. was only replacing the then existing one year P.U.C. However there was some extra cost to Government by starting of 23 Junior Colleges during that year on account of payment of Grant-in-aid. Even in this case Government's decision to the payment of grant-in-aid to these institutions from the year of starting has been taken only during 1972-73, so the extra expenditure of grant-in-aid to these Institutions would be debited to the current year's budget. It is estimated that a sum of Rs.25.1 lakhs would be required for giving grant-in-aid to the 23 Junior Colleges started during 1971-72 and 22 Junior Colleges started during 1972-73. The extra cost per annum on account of upgrading 134 private Higher Secondary Schools into Junior Colleges during the year 1972-73 including non-recurring charges towards grant-in-aid for construction of building and equipment etc., is estimated at Rs. 41.1 lakhs and the extra cost on account of upgrading 109 Government Higher Secondary Schools into Junior Colleges including non-recurring cost towards additional equipment etc., is estimated at Rs.38.42 lakhs (Total Rs.79.5 lakhs). To ensure minimum cost and to see teachers get adequate work load, the Post-Graduate teachers are expected to handle the lower classes of the High School also.

FUTURE PLAN OF ACTION.

Though a large number of Higher Secondary Schools have been upgraded there are still about 20 taluks which do not have any facilities for imparting Pre-University Education. So during the remaining part of the IV Five Year Plan it is proposed to permit as many Higher Secondary Schools in these taluks as are needed, to be upgraded, that even the taluks which do not have any Junior College will have one before the end of the IV Five Year Plan. Where Higher Secondary Schools are not there, Government will have to permit High Schools to start the P.U.C. Class. It may also become necessary, during the last year of the IV Five Year Plan, to upgrade 60 more Higher Secondary Schools which have not been permitted now, to meet the educational requirements. It is proposed to set up at least one divisional office during 1973-74 with a Deputy Director in-charge to ensure effective supervision over the Junior Colleges.

During the V Five Year Plan it is expected that students strength would go up by about 5000 every year. To provide educational facilities for these additional enrolment and also to establish pace setter institutions to serve as models for other similar institutions it is proposed to set up 30 Government Junior Colleges at the rate of six each year. These would be located in district headquarters and bigger cities. As per recommendations of the Education Commission the ultimate objective is to take away the P.U.C. Classes now attached to Composite Colleges and Higher Secondary Schools and form them into separate units viz., Junior Colleges. This process of bifurcation is proposed to be initiated from 1973-74 in a phased manner and it is expected by the end of the V Five Year Plan about 300 institutions would have been so bifurcated.

at the rate of 50 institutions per year. It is also proposed to provide necessary facilities such as buildings, library, laboratory and staff even to the smaller institutions, which for economic reasons cannot be bifurcated.

In addition it is also proposed to permit private managements to start Junior Colleges wherever necessary at the rate of about 10 Junior Colleges every year.

It is also proposed to organise short orientation courses in methodology to the teachers teaching P.U.C. classes, who are not trained but hold only Master's Degree. In the V Five Year Plan it is expected to train 1000 teachers at the rate of 200 per year. These courses are proposed to be organised in collaboration with the NCERT. One such course has already been organised during 1971-72.

With the bifurcation of Composite Colleges and higher secondary schools and separation of the P.U.C. Classes to form separate Junior Colleges, the administrative control of these institutions which are at present vested with the Director of Collegiate Education and the Director of Public Instruction would automatically get transferred to the Directorate of Pre-University Education. Thereon it would become necessary to set up divisional offices in all the four divisions of the state for proper supervision and control.

It is expected that all these schemes proposed to be implemented during the V Five Year Plan would cost the State exchequer a sum of Rs.179.50 lakhs for the V Five Year Plan Period.

Sd/-

(P. MALLIKARJUNAPPA)
DIRECTOR
PRE-UNIVERSITY EDUCATION
GOVT. OF MYSORE?
BANGALORE.

Appendix 5

No.MCI-7(62)/73-Med/14303

Dated 19th October,1973

From

The Secretary,
Medical Council of India,
Temple Lane, Kotla Road,
New Delhi

To

The Chairman,
National Committee on 10+2+3
Educational Structure,
A-14/15, Vasant Vihar,
New Delhi-110057

Sub:- National Committee on 10+2+3 Educational Structure

Sir,

I am to state that the Executive Committee of this Council at its meeting held on 21st and 22nd September,1973, considered your letter No.2644/73 dated 16th August,1973 with regard to the views of the Medical Council of India about the requirements of pre-professional qualification required for admission to the M.B.B.S. course conducted by the various universities after the introduction of the proposed 10+2+3 educational structure, and it was decided as under:-

"The Executive Committee was of the opinion that the Medical Council of India would not insist on any pre-professional course after a 12 years study, the last two years study comprising of Physics, Chemistry, Biology, Mathematics and English at the advance level, after the introduction of the 10+2+3 years educational structure as proposed to be recommended by the National Committee on Educational Structure."

Kindly acknowledge receipt.

Yours faithfully,

Sd/- U.B.Krishnan
Secretary

.....

RESOLUTIONS OF COBSE (CONFERENCE OF BOARDS OF SECONDARY EDUCATION) PASSED IN ITS MEETING HELD AT AJMER ON 29th AND 30th SEPTEMBER & 1st OCTOBER, 1973

The Conference noted the thinking of the National Committee on 10+2+3 Educational Structure as reported briefly by Dr. P. D. Shukla, Chairman of the Committee.

Resolution on 10+2+3 Educational Structure

There was general support to the scheme of studies proposed for the new classes IX, X and XI-XII. With respect to teaching of language it was agreed that every student who passed out of the new class X should have acquired a good competence in language skill in one language, working knowledge in another and elementary knowledge in a third language. Each of these languages must have been taught for a minimum period of three years and further that in order to ensure minimum achievement in them, they should be subjected to an Examination by the Board concerned.

As regards the optionals suggested for the new classes XI & XII the Conference expressed the view that it is desirable to permit students to choose any four subjects as electives, because this would encourage interdisciplinary studies. Taking into consideration, however, the limitations and practicability of such a proposal and the usual rules that are in vogue in Indian Universities, it would be desirable to group the electives in appropriate combinations for guidance of students and schools.

The Conference recommended that the two stages namely classes XI and XII and classes IX & X (or VIII, IX & X) should be designated as Higher Secondary and Secondary respectively instead of Higher Secondary and Lower Secondary as seems to be the thinking in a few States.

The Conference further recommended that in the new classes IX and X the subject of Craft/Trade may also be designated as work experience with appropriate emphasis on productivity and efficiency.

The Conference urged that the new classes XI and XII should be treated to belong to school education. Among the reasons in favour of this recommendation it may be stated that (i) the need to strengthen the School Education in the country has been repeatedly emphasised by all Commissions and Committees; (ii) proper development and implementation of the scheme of vocationalization at Higher Secondary stage would be more effective in schools rather than in colleges; (iii) teaching this subject at the school stage will enable fuller utilisation of existing resources in the form of Craft teachers, laboratory etc. in schools; (iv) down-grading of the existing 11-year Higher Secondary Schools to 10 years Secondary Schools will only further weaken the school system; and (v) pupils at this stage are too young to take full advantage of the lecture method adopted in universities and colleges.

Resolution on Vocationalization of Higher Secondary Education

The Conference agreed that the main objective of vocationalization of Higher Secondary Education should be to prepare students for some vocation and thus to enable them to choose a course which is terminal in character.

The Conference also agreed that while provision should be made for change over from academic to the vocational stream and vice-versa, some control should be exercised on the movement of pupils from vocational stream to academic stream.

The Conference also supported the idea that the syllabuses in different subjects under the academic as well as the vocational stream should be divided into units.

The Conference appreciated the need of having different vocations and trades according to the requirements of the locality. The vocation should also be selected on the basis of surveys that may be considered to determine the appropriate work-opportunities.

Contd....

The duration of different courses should depend on the amount of knowledge and training to be given to the students to equip them fully to take either self employment or service after leaving the institution.

The Conference fully supported the proposal that the proposed vocationalization scheme should prima facie concentrate on non-engineering trades in order to avoid duplication with the on-going programmes of vocational education in institutions like I.T.Is., Polytechnic etc.

So far as the recruitment of teachers for the vocational stream was concerned the Conference was of the view that more than one avenue should be utilised at least in the beginning. Particular attention was laid on obtaining the services of experienced persons on part-time basis or otherwise from among those who are actually working in the establishments where the vocational students are likely to seek employment.

The Conference also recommended that the existing Multipurpose Schools, Post-Basic Schools, Technical High Schools and others belonging to this category should be reorganised to fall in line with the suggested courses under the vocational stream.

The Conference appreciated the need of adequate strengthening of the existing departments of Education in order to attend properly to the new issues pertaining to the scheme of vocationalization. To begin with, each department of education may create a Unit manned by suitably qualified personnel and in due course of time when the work justifies it a separate Directorate of Vocational Education may be set up in each State.

The Conference also supported the view that a Board of Higher Secondary and Vocational Education should be established in each State either by widening the scope of the existing Board of Secondary/School Education or by creating a new Board. In either case adequate representation should be given on the Board to organisations and agencies like departments of Agriculture, Industry, Training & Employment, Health, etc. so that fuller cooperation is ensured.

Government of India
Ministry of Education & Social Welfare
NATIONAL COMMITTEE ON 10+2+3 EDUCATIONAL STRUCTURE

Statement of Information

1. Name of State/Territory _____
2. Latest available information regarding educational institutions as in the following table:-

Type of institutions	No. of institutions	Enrolment in classes							Degree		
		VII	VIII	IX	X	XI	XII	PUC	I	II	III
a) High Schools											
b) Higher Sec. Schools											
c) Colleges with, Pre-University classes											
d) Intermediate or Senior Colleges											
e) Degree Colleges											
f) Universities											

3. Year to which the information in item No.2 relates _____

4. Cost per pupil per annum at the following stages (and not institutions) of education:-

- a) High School
- b) Higher Secondary
- c) Intermediate
- d) PUC
- e) Degree

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____

5. Relevant information regarding formal decision of the State Government to change over to the uniform structure of 10+2+3 and the date for its implementation. _____

Contd...

6. A brief report on the steps taken so far to implement the above decision.

7. A brief report on the preparatory measures and advance actions taken (or proposed to be taken) to introduce the new structure.

8. It is expected that only teachers with Post-graduate qualifications will man the new XI & XII classes. What advance action does your State propose to take so that adequate number of post-graduate teachers would be available at the appropriate time?

9. Indicate in the following tables estimated cost exclusively for the introduction of new structure of education with reference to:

- i) Preparatory measures
- ii) Advance action and
- iii) Actual introduction

Table I

Non-Recurring

Item	1973-74	74-75	75-76	76-77	77-78	78-79	Total
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
(1) Land & building							
(2) Furniture							
(3) Laboratory equipment							
(4) Other equipment							
(5) Library literature							
(6) Others, if any (may be specified)							
Total:							

Contd.,,

Table II
Recurring

Item	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	Total
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
(1) Salary of Principals							
(2) Salary of Non-Teaching Staff							
(3) Scholarships							
(4) Other Recurring items (to be specified)							
Total:							
Less: Income from fees(-)							
Net Total:							

10. For introducing the new structure in your State what amendments, if any, are necessary with reference to any Act, Government resolution or other set of rules and regulations.

11. The Indian Education Commission (1964-66) visualized that 1/4th of the institutions should have 12-year course and the rest 10-year course. What would be the proportion of 12-year and 10-year institutions in your State on introduction of the new pattern?

12. If instead of extending the school stage of 12 years, your Govt. thinks of attaching the new XI & XII classes to colleges and/or establishing them as independent units, give reasons.

Contd...

13. Also please state the number of units comprising classes XI & XII which are to be attached to a) schools, b) colleges, c) established as independent institutions during each year till the end of the Fifth Plan.

a) _____
b) _____
c) _____

14. Whether any steps have been taken towards vocationalisation of higher secondary education in your State? If so, the particulars thereof. If any Committee has been appointed by the State, the progress or the findings thereof.

15. a) Duration of post-school professional courses

	Engg.	Medicine	Others
No. of years	_____	_____	_____

b) Do you have:

- i) Pre-Medical Yes/No
ii) Pre-Engineering Yes/No
iii) Other professional courses (Give names) Yes/No

c) With the introduction of new class XII, is there any proposal to abolish the pre-professional course, and

d) If you do not have any pre-professional course, do you propose to reduce the total duration for the first degree course for Engineering, Medical and other professional courses by one year?

16. Arrangements to be made for examining students at the end of classes X & XII.

Contd...

17. Any other problems/issues which you may think relevant in connection with the introduction of 10+2+3 educational structure in your State.

(Signature)

Place _____

Name _____

Date _____

Designation _____



N.B.: If you need more space for answering any of the points, you may attach separate sheets for those answers.

सत्यमेव जयते

Government of India
Ministry of Education and Social Welfare
NATIONAL COMMITTEE ON 10-2+3 EDUCATIONAL STRUCTURE

List of persons with whom discussions were held

1. Shri A.R.Badrinarayana Iyenger,
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Karnatak, Bangalore
2. Prof.Mrityunjay Banerjee,
Education Minister,
West Bengal, Calcutta
3. Shri Gordhandas Chokhawala,
Minister for Education & Social Welfare,
Gujarat, Ahmedabad
4. Dr.Navalkar V.R.Nedunchezian,
Minister of Education,
Tamil Nadu, Madras
5. Shri Radha Raman,
Chief Executive Councillor,
Delhi Administration,
Delhi
6. Dr.B.P.Pandya,
Deputy Minister of Education
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7. Shri I.J.Patel,
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8. Shri U.R.Mehta,
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9. Shri Ram Lal Parikh,
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Gujarat Vidyapeeth,
Ahmedabad
10. Shri J.B.Sandil,
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11. Shri R.S.Mehta,
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26. Shri H.N. Das Mohapatra,
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Former Education Secretary,
Government of Punjab,
Chandigarh
28. Shri Joginder Singh,
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29. Shri R. Sinha,
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Government of Bihar,
Patna
30. Shri S.R. Ramamurthi,
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31. Shri P.L. Chhabra,
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41. Dr.G.L.Bakshi,
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42. Shri Padam Saroop Bansal,
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43. Shri S.V.Chittibabu,
Director of School Education,
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44. Shri V.T.Titus,
Director of Collegiate Education,
Madras
45. Shri P.Sivalingam,
Director of Technical Education,
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46. P.N.R.Ratnakannan,
Director of Medical Education,
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47. Prof.P.S.Kalwachawala,
Ex-Director of Technical Education,
Ahmedabad
48. Shri S.P.Taneja,
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49. Shri L.Biswas,
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50. Shri K.Mohanram,
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51. Shri J.L.Rathod,
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69. Smt. C.N.Mangala,
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109. The Registrar,
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110. The Dean,
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(Higher Education),
Maharashtra State
116. Dr. (Smt.) Chitra Naik,
Director of Education,
Maharashtra State
117. Shri S. N. Singh,
President,
Vidharbha Federation of
Headmasters' Association
118. Shri V. G. Somalwar,
Headmaster,
Somalwar Higher Secondary School,
Nagpur
119. Shri K. C. Vyas,
President,
Bombay Headmasters Association,
Bombay
120. Shri V. S. Gokhale,
Headmaster,
Modern High School,
Poona
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122. Shri A. R. Gibbs,
Registrar,
Marathwada Agriculture University,
Parbhani
123. Shri M. H. Moledina,
Chairman,
Managing Board,
Moledina Schools, Poona

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