



GOVERNMENT OF INDIA

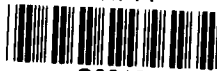
REPORT
OF THE
WORKING GROUP
ON
VOCATIONALISATION

MINISTRY OF EDUCATION & SOCIAL WELFARE
NEW DELHI
1978

ACKNOWLEDGEMENT

The members of the Working Group and the special invitees, in spite of their busy schedules, attended the meetings and made valuable contributions to the discussion on various issues connected with vocationalisation of education. The two Sub-Groups on Non-Rural and Rural Vocations worked hard to prepare the draft reports, the happy amalgam of which is the present report. The Chairman has pleasure in gratefully acknowledging the assistance given by every member of the group and thanking them. His appreciative thanks are specially due to Shri I. P. Anand, Shri R. N. Azad, the Chairmen of the Sub-Groups and Shri A. K. Mandal, Shri D. R. Dua, the Member-Secretaries of the Sub-Groups and Mrs. J. Anjani Dayanand, Member-Secretary of the Working Group and her other colleagues of the Ministry whose assistance was conspicuous throughout the deliberations.

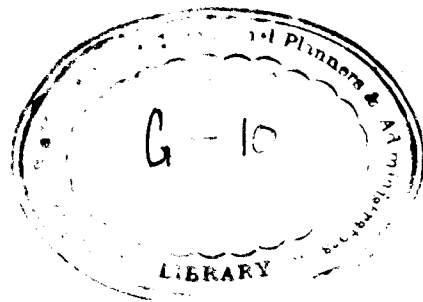
NIEPA



G0010

CONTENTS

CHAPTER	<i>Pages</i>
I Introduction	1
II Historical Background	2—4
III Existing Facilities and Present Position	5—9
IV Scheme of Implementation	10—19
V Financial Estimates	20—23
VI Summary of Recommendations	24—25
ANNEXURE	
I Composition of the Working Group	26—28
II Composition of the Sub-Group—Rural Sector	29—31
III Composition of the Sub-Group—Non-Rural Sector	32—33
IV Terms of Reference of the Sub-Groups	34
V Distribution of Technical and Vocational Education and Training Institutions and their sanctioned intake, enrolment and out-turn—Statement	35



CHAPTER I

INTRODUCTION

1.01 The Ministry of Education and Social Welfare (Department of Education) in consultation with the Planning Commission set up a Working Group on Vocationalisation of Education. The composition of the Working Group is given in Annexure I.

1.02 The terms of reference of the Working Group were as under :

- (a) to review the developments in the field;
- (b) to advise on the approach and priorities for the Sixth Plan;
- (c) to formulate concrete proposals indicating financial implications and structural arrangements; and
- (d) to apportion the areas of responsibility among the Centre, State and Voluntary Agencies.

1.03 In the First Meeting of the Working Group held on 12th October 1977, it was decided to constitute two Sub-Groups in the following Sectors :

- (i) Sub-Group on Vocationalisation of Education—Rural Sector.
- (ii) Sub-Group on Vocationalisation of Education—Non-Rural Sector.

The membership of the two Sub-Groups and their terms of reference are given in Annexures II, III and IV.

1.04 The Sub-Group on Rural Sector met on 8th and 19th November, 1977 and finalised its Report. The Sub-Group on Non-Rural Sector held their meetings on 14th and 23rd November, 1977 and finalised its Report.

1.05 The Reports of these Sub-Groups were considered by the Working Group in its Second Meeting held on 29th November, 1977.

CHAPTER II

HISTORICAL BACKGROUND

2.01 Education in our country was generally identified with liberal education and it was the Wood's Despatch (1854) which for the first time highlighted the need for introduction of occupational education for a sizeable segment of student population. But evidently this report did not make any noticeable impact until Hunter Commission was set up in 1882 to examine the problems of education as a whole especially of technical and vocational education. It recommended that at the high school stage there ought to be two distinctive streams first for preparing the students for entrance examination to the university courses and the second for practical occupations. These recommendations of the Hunter Commission, however, were not implemented. Thirty years later the Calcutta University Commission recommended that "the intermediate colleges must be regarded as fulfilling a double purpose. In the first place, it must provide training such as will qualify its students for admission to the university, in different faculties or in other institutions of higher or technological training. In the second place it must provide training suitable for students, who after completing the courses will proceed directly into various practical occupations. As the system develops we should expect to find an increasing number of students entering upon the intermediate courses solely with a view to preparing for various practical careers".

2.02 The Hartog Committee (1929) and Sapru Committee (1934) both emphasized the vital role of vocational education in the country's economic development. The Hartog Committee recommended diversified courses in the schools to enable the students to prepare for industrial and commercial careers at the end of middle school stage, as preparation to special instruction in technical and industrial schools. The Sapru Committee recommended 11 years of school education (5 years for primary, 3 years for lower secondary and 3 years for higher secondary) with vocational studies commencing after 11 years of education. The main purpose of the Sapru Committee was to find ways and means of solving unemployment problem through diversified courses at the secondary stage. But it too made little impact on the educational administration.

2.03 Again Wood-Abbot Commission (1936) examined certain problems of education, specifically the vocational problem, and it was on the basis of this Report that a net-work of polytechnics was created in the country. The duration of polytechnic courses was two or three years depending upon the courses offered in such institutions. These courses were offered in Engineering or Technical Schools. The Sargent Report (1944) restated more or less what the Sapru Committee had recommended. It further recommended that the first year of the intermediate should be transferred to the high school and the second year to the university and also to introduce two streams—(a) academic (b) technical with the objective "to provide good all round education combined with some preparation in the later stages for careers which pupils will pursue on leaving the schools".

2.04 The Radhakrishnan Commission (1948) recommended that in order to direct the students to vocations at the end of Class X, a large number of intermediate colleges should be opened. "The aim of these colleges would be to meet a variety of needs of our youngmen and women by giving a vocational bias to their courses by retaining at the same time their value in a system of general education as preparation for university courses". Here again the stress was on preparation for higher studies rather than making some of them terminal.

2.05 The Mudaliar Commission (1952) reiterated that "the secondary education is a complete unit by itself and not merely a preparatory stage, that at the end of this period the student should be in a position, if he wishes, to enter into responsibilities of life and take up some vocations". It also recommended diversification of the courses at the secondary stage. This resulted in the creation of multipurpose schools. Unfortunately, for various reasons including lack of proper

appreciation of the scheme, inadequate preparation in terms of infra-structure and teaching staff and over-emphasis on preparation for university courses, the multipurpose schools were reduced to shadows of what were intended to develop. Again in 1955, the All India Council of Technical Education was set up to advise the Union Government on all aspects of technical education at the diploma as well as degree levels. It was about the same time that a net-work of Industrial Training Institutes to train the base level industrial workers was started. To bridge the gap between the I.T.Is and Polytechnics, Junior or Technical schools were started with a view to continuing education with technical training for certain types of operational jobs in industries. This scheme also gradually suffered neglect and at present only 200 schools are in existence.

2.06 Some basic academic considerations again compelled the Government to appoint the Education Commission of 1964 under the Chairmanship of Dr. D. S. Kothari to re-examine the entire educational system of the country keeping in view the national goals, improvement of quality and standard of education. The Kothari Commission considered the undesirable effects of uncontrolled admissions to the universities on the one hand and the resulting unemployment problem of the graduates on the other. It came to the firm conclusion that for majority of the occupations which the university graduates seek, the university degrees are not necessary and those jobs can be competently performed by well trained higher secondary students. Therefore, the Commission suggested that at the higher secondary stage there need be two distinctive streams: one preparing students for advanced education in the universities and the professional colleges and the other preparing for a variety of occupations immediately after completion of vocational studies which fit them into those vocations. In keeping with this recommendation the Commission suggested that for college preparatory general education courses the duration may be two years and the duration of studies and training for the vocational stream may range from one to three years or more. Given the proper planning, cooperation, coordination and implementation of the scheme, the Commission felt, it should be possible to divert at least 50 per cent of the students who successfully complete 10 year education to the vocational stream thus reducing the pressure on the universities on the one hand and preparing the students for employment, including self-employment on the other. For a majority of vocational higher secondary students it would be a terminal stage in a sense although further educational facilities should be made available on a large scale so that those in jobs may benefit through part-time or evening studies.

2.07 The National Policy of Education Resolution (1968) agrees with these recommendations of the Education Commission on vocational education. To quote :

“There is need to increase facilities for technical and vocational education at secondary stage. Provisions of facilities for secondary and vocational education should conform particularly to requirements of the developing economy and real employment opportunities. Such linkage is necessary to make technical and vocational education at the secondary stage effectively terminal. The facilities for technical and vocational education should be suitably diversified to cover a large number of fields such as agriculture, industry, trade and commerce, medicine and public health, home management, arts and crafts and secretarial training.”

2.08 The Central Advisory Board of Education, which is the highest body concerned with educational policy in the country, has also been exercised about this problem. While deliberating at its 37th Session held in November 1974, the Board observed that the amount of Rs. 10 crores provided in the draft Central Plan for the introduction of vocational courses at the higher secondary stage was inadequate and recommended that the provision should be substantially increased. The Board also observed that the new courses should be started after taking into account the existing facilities to meet the demand for middle level persons in the concerned district/State. They also suggested that the National Council of Educational Research and Training may work out model curricula and syllabi for such courses and provide guidelines to the State Governments.

2.09 The Central Advisory Board of Education at its 38th meeting held in November 1975, while noting with satisfaction the adoption of the educational pattern of 10+2+3 by most of the

State Governments, deemed it necessary to stress the crucial importance of the 2 year stage between the school and university stages of education. It reiterated that this stage should be regarded not merely as college preparatory but as a period for preparing an increasingly larger number of school leavers for different vocations in life. The Board was also of the view that guidance and financial assistance by Central Government would enable State Governments to take quick and effective action in this direction and recommended the same.

2.10 The Conference of Ministers of Education of the States and Union Territories held at New Delhi in August, 1977 recommended that the new pattern (10+2) be implemented all over the country before the end of the Sixth Plan. It also urged reorganisation of higher secondary education, especially its vocationalisation, by providing for suitable internal restructuring and modification of content and by developing strong links between education and the various development departments such as industry and commerce, agriculture, health and community development.

CHAPTER III

EXISTING FACILITIES AND PRESENT POSITION

3.01 There were 4,225 institutions imparting technical and vocational education and training in all the States and Union Territories of India at the end of 1973. Out of these 3,455 were located in urban areas and 770 in rural areas. Only 920 institutions had complete hostel facilities and 747 of these were located in urban areas. About one-third of these institutions were exclusively meant for girls most of which were located in urban areas. Only 243 of them were actually in rural areas. The institutions for girls were mostly imparting training in nursing, industrial craft and trades. There were 25 women polytechnics and 4 women industrial training institutes.

3.02 The statewise analysis of these institutions shows their heavy concentration in the States of Maharashtra, Gujarat, Karnataka and Kerala. These States are also industrially more advanced.

3.03 The total enrolment in these institutions was 5,04,442. While 3,80,669 students were enrolled in technical courses offered by the polytechnics, the industrial training institutes and the junior technical schools, only 1,23,773 students were enrolled in other vocational courses. The break-up of this enrolment among boys and girls was 3,79,460 and 1,24,982 respectively. During the year 1972-73 the students who graduated from these institutions numbered 1,97,066. These vocational and training institutions offered a variety of courses having different durations and minimum admission qualifications. The total recurring expenditure during the academic year 1972-73 was about Rs. 560 million and per pupil expenditure was Rs. 1,048. A statement showing distribution of technical and vocational education and training institutions and their sanctioned intake, enrolment and out-turn is at Annexure V.

3.04 The growth of apprenticeship training facilities in the country shows that 201 industries have been specified for the Apprenticeship training schemes in 1973. The number of establishments which engaged apprentices as on 31st March, 1973 was 5,338. These establishments were providing apprenticeship training in 61 designated trades and the total number of apprentices undergoing training as on 31st March, 1973 was 56,753. They turned out during 1972-73, 14,002 trained apprentices.

Central Scheme for Vocationalisation of Higher Secondary Education

3.05 To ensure countrywide acceptance of the concept of vocationalisation and to assist the State Governments in establishing the relevance and importance of this concept to our socio-economic needs, the Government of India launched during 1977 a centrally sponsored scheme of vocationalisation of higher secondary education. The main objective of the scheme is to encourage the State Governments to initiate the vocationalisation of education at plus 2 stage and to expand and consolidate it on a regular basis as a State Scheme in the Sixth Plan. The scheme has the following main components :

- (i) District Vocational Surveys in 150 districts
- (ii) Introduction of vocational courses in 40 selected districts.

The central assistance will be provided for the following items :

- (i) Conduct of district vocational surveys;
- (ii) Appointment of District Vocational Education Officers;
- (iii) Purchase of equipment for vocational courses; and
- (iv) Salary of teachers for vocational courses.

The other allied expenses were to be met by the State Governments themselves. Rupees 2 crores were sanctioned for implementation of this scheme during the Fifth Five Year Plan. The scheme itself was cleared only towards the end of February, 1977 for implementation.

3.06 Till the end of financial year 1977-78, financial assistance has been released for the conduct of vocational surveys in 55 selected districts of Assam, Gujarat, Jammu and Kashmir, Karnataka, Madhya Pradesh, Maharashtra, Nagaland, Orissa, Rajasthan, Sikkim, Tamil Nadu and Tripura. Under the scheme vocational courses have been introduced in three districts of Karnataka and one district of Sikkim from the academic year 1977-78. To strengthen the efforts of the Government of West Bengal which has already introduced the vocational courses financial assistance under the scheme was released for the purchase of equipment only. The Government of Maharashtra has also decided to introduce vocational courses in 5 districts from the academic year 1978-79 under the scheme. Financial assistance for making preparatory work has been sanctioned. The other States have been requested to identify districts for conduct of surveys and apply for financial assistance under the central scheme. It has been decided to continue the scheme during the year 1978-79.

Position of Vocationalisation

3.07 No doubt several States/Union Territories have introduced programmes of vocationalisation, but most of them are experimenting on a pilot basis in their own way. It is too early to assess the impact and ultimate usefulness of this programme at this stage. However, a brief account of the working in some of the States may be of interest.

Delhi

3.08 The vocationalisation at plus 2 stage was introduced in Delhi during 1977-78. The Reddy Committee (1976), which was set up to examine the problems of vocationalisation in Delhi, recommended several vocational courses in 50 selected schools in Delhi with an intake capacity of 5,000 students. However, in actuality it was possible to provide for vocational streams only in 17 schools including the two technical higher secondary schools and to enrol only 707 students to various vocational courses. The break-up of the courses offered by different schools and the candidates is as follows :

S. No.	Name of Course	No. of schools in which provision made	Number of candidates
1.	Basic Electrical Technology	2	165
2.	Electronic Technology	2	142
3.	Air Conditioning & Refrigeration Technology	2	143
4.	Canteen Management	1	—
5.	Accountancy and Auditing	5	121
6.	Stenography	5	75
7.	Nutrition & Food Preservation	1	26
8.	Dress Making & Designing	2	15
9.	Textile & Design	2	20
Total			707

The poor response to vocational courses in Delhi is due to lack of understanding and appreciation of the significance and basic features of the scheme by the parents and children. There were also some administrative difficulties.

Karnataka

3.09 In Karnataka, it was estimated that out of about 40,000 students who passed the pre-university courses during 1976-77, only 3,000 could join the professional courses and as many as 36,000 sought admission to higher education in arts, science and commerce at the university. Keeping in view, the national goal of diverting 50% students to the vocational stream in a phased manner, the State Government introduced a programme of vocationalisation from the year 1977-78 under the central scheme of assistance to provide education with training in their chosen vocations for employment. Since employability is the corner-stone of this scheme, Government have associated potential employers with the programmes from the beginning. It will be the earnest endeavour of the State Government to create conditions for the easy absorption of successful candidates by employers.

3.10 During the academic year 1977-78, 13 institutions were selected, on a pilot basis, for the introduction of vocational courses, with a target to enrol 1,200 students in the districts of Dharwar, Bangalore and Dakshina Kannada. As many as 21 vocational courses have been introduced on the basis of their usefulness for both self-employment and employment in the private and public sectors.

3.11 The scheme has had a satisfactory start in Karnataka. The actual number of students offering to take up vocational courses exceeded the State Government's estimation resulting in refusal to enrol all the students desirous of joining the vocational courses. This shows that vocationalisation is acceptable to the population of Karnataka in general and the parents and students in particular. Since there is demand for skilled personnel in a large number of vocational fields, various other courses are being planned keeping in view the findings of the vocational surveys in the districts of Bangalore, Mysore, Raichur, Uttara Kannada, Hassan, Belgaum and Tumkur. The State Government proposes to introduce vocational courses in 44 institutions throughout the State during 1978-79.

West Bengal

3.12 The State of West Bengal introduced the new pattern of education from the year 1974. To provide admission to 1.5 lakhs students at plus 2 stage, they selected 1000 institutions for the general stream and 100 institutions for the vocational stream in 1976. The West Bengal Council of Higher Secondary Education conducted a preliminary survey entitled "Manpower Estimates for West Bengal". On the basis of this survey and after taking into account the facilities in the existing institutions, the Council selected five areas of vocations for introduction under the vocational stream. The number of institutions, vocation-wise is as under :

S. No.	Area of Vocation	No. of institution
1.	Agriculture	25
2.	Technical	32
3.	Trade and Commerce	26
4.	Industries (Textile)	6
5.	Para-medical	10

These institutions are located in all the 16 districts of the State. There are 2,300 students in the vocational stream at present. The first batch of students will come out in May, 1978. The courses have been so designed that 50% of instruction is common for academic and vocational streams and the other 50% is available for vocational practice. This permits the vocational student to cross over if he desires by taking the bridge courses provided under a separate group of subjects as offered to academic students.

3.13 The pattern followed by the State is thus different from that recommended in the NCERT's document "Higher Secondary Education and its Vocationalisation" as they had introduced the programme even before these recommendations were made. The curriculum designed by the State Council is not truly vocational and there seems to be no emphasis on making teaching of basic subjects relevant to vocations. The time allocated for vocational subjects is not in conformity with the prescribed norms. The Bridge Courses that have been provided seem to deliberately discourage a larger proportion of vocational students returning to academic stream as they have to study the complete syllabus meant for the students of general stream. This in itself may not be bad but change from one stream to the other is not easily possible.

Central Board of Secondary Education

3.14 According to the National Pattern of Education, Central Board of Secondary Education (CBSE) has provided two streams—academic and vocational at plus 2 stage. The vocational courses have been designed to be terminal in character, but at the same time vertical link is provided both with the courses of academic nature as well as vocational and technical nature. The courses have been designed for a duration of 2 years coinciding with the duration of academic courses in the transitional stage as it is difficult to locate the facilities in or out of school for the extended courses. The CBSE adopted the scheme of studies and the courses prepared by the NCERT. The course structure followed by them is as under :

Subject	Share of total time available
(a) A core course for all the students offering academic or vocational stream :	
(i) One Language	10% } 25%
(ii) General Study	15% }
(b) A vocational course :	
(i) Study of basic sciences or social sciences relevant to vocation	25% } 75%
(ii) Practical skills and occupational experience	50% }

A small number of schools affiliated to the Board have started vocational courses during 1977-78. The courses offered were as under :

Agricultural Vocations

1. Inland Fisheries
2. Agriculture

Commerce and Business Related Vocations

3. Office Management and Secretarial Practice
4. Stenography
5. Accountancy and Auditing

Engineering and Technical Vocations

6. Basic Electrical Technology
7. Electronic Technology
8. Air-Conditioning and Refrigeration Technology
9. Furniture making and designing

Vocations Related to Home Science

10. Nutrition and Food Preparation
11. Canteen Management

12. Dress Making and Designing
13. Textile and Designs

Miscellaneous

14. Photography

3.15 In most of the cases the enrolment in these courses was not satisfactory. However, courses relating to commerce and business related vocations, engineering and technical vocations are popular; but there are no students for courses like photography, canteen management, fisheries etc. though these fields have a good potential.

3.16 Some of the reasons for luke-warm response to the vocational courses are :

- (i) A great majority of the students wish to seek employment in organised sector; therefore, very few students like to take risk with the career unless one is sure that a particular course would lead him to a specified job.
- (ii) The climate for self-employment is still not encouraging so that the students with the type of training provided in the schools could feel themselves confident to risk a heavy investment:
- (iii) A heavy investment is needed by the school in terms of equipment and teachers which can be rendered useless by the changing demands of the employment market. This factor has discouraged several institutions to come forward for vocational courses; and
- (iv) Owing to geographical distances, particularly with reference to CBSE schools, it has not been possible to share the limited resources available. This has further increased the cost of investment.

3.17 In order to make courses more attractive, experience suggests that these courses need be designed at the grass-root level, particularly by the schools themselves. This is all the more necessary owing to the fact that the students who have to terminate their studies to enter main stream of life would settle by and large in the same area where they have grown up. Their employment market, therefore, lies in their own districts or the States. The courses, therefore, should be relevant to the local requirements and be acceptable to the industry, trade or any other organised sector in the area.

CHAPTER IV

SCHEME OF IMPLEMENTATION

Basic Principles

4.01 Vocationalisation of education is a major thrust in the reconstruction of present educational system. While it is recognised that modern education cannot sacrifice its liberal content totally, its principal aim should be to equip the youth with such manual skills founded on basic scientific principles as would be needed in today's society and with capacity to adapt to ever changing scientific and technological developments. The vocationalisation of education has to be looked from the point of view of the country's special needs and the goals set by the Government. Thus the new education envisages an appropriate blend of training in practical arts for the fulfilment of these goals, the requirements of employing agencies in terms of attitudes, competencies, skill excellence and adaptability to change. Education itself does not produce jobs but vocationalised education makes an individual more employable.

4.02 Our economy being a developing one, there must be an adequate supply of personnel for higher administrative and professional levels, as also unskilled and semi-skilled manpower for the lower levels. But there are also crucial middle level supervisory and other positions without which neither production can be increased nor services improved. Through vocationalisation of education we can prepare middle level manpower who would not merely be superior to skilled workers but who would work with their brains as well as their hands. They would interact with others to produce new goods and services, which may satisfy a long felt need of the Community.

4.03 The accent on self-employment is an index of anxiety that all those who qualify in vocational studies are unlikely to secure gainful jobs of their choice. Further vocational education at no stage can be a guarantee for jobs. Millions of jobs cannot be created year after year whatever be the growth rate. One of the chief aims of vocational education is to produce entrepreneurs with special emphasis on agriculture including agro-based and small and cottage industries who through adventurous efforts and abilities, become creators of jobs for themselves and also for others. But entrepreneurship and self-employment are not meant for all. There may be a small but a significant percentage, who will dare to embark upon their own enterprises. They require not only first class skill mastery but the art and science of management of money, machines and men. Specialised entrepreneurship courses must be offered by experts and experienced entrepreneurs or business managers. These will be the future captains of new industries, banks, medical practitioners on whom the society will depend for its needs and progress. Financial assistance, adequate training, apprenticeship in big concerns and continued interest in solving their problems at the initial stages should be provided until they succeed and this requires an imaginative investment policy and administrative set-up.

Occupational Survey

4.04 The demand for new skills arising out of various developmental programmes especially in the rural sector will have to be identified carefully to assess the manpower requirements through occupational surveys. The training schools and institutes providing training in large number of trades have not been able to supply all the skills and competencies required for the growing needs of the society.

4.05 The Survey should identify the emerging industrial, agricultural and commercial development trends to assess the employment opportunities responsive to these trends in the near future. The vocations in which there is shortage of trained personnel and those which offer scope for self-employment should also be identified. There are various traditional occupations existing

in rural semi-urban areas which require adoption of modern techniques to improve the quantity and quality of their production. These occupations may also be identified, so that suitable vocational courses are prepared.

4.06 The Survey should identify suitable schools, Government and private, where vocational streams can be located or which could be completely converted into vocational schools. The selection must keep in view the facts if the school can attract enough response to vocational stream, if it possesses adequate infrastructural facilities such as classrooms, library, laboratory, workshop and can command ability to muster cooperation from the local community and industrialists for on-the-job training and part-time instructors, if it enjoys a reputation for financial soundness, qualified teaching staff and an enlightened administration. The survey should clearly indicate the magnitude of additional inputs needed for successful implementation of the vocational courses.

4.07 The Survey should be conducted preferably by knowledgeable officers and research scholars. It is desirable to entrust the work to the Directorates of Employment and Training or to the Directorates of Technical Education which have required expertise. The Survey should not rely entirely on available records, but collect as much information as is possible through on-the-spot study, field work, discussions and interviews especially to determine the skill levels and types needed for various vocations. The Survey should provide fairly reliable facts and figures to identify vocations and should not take more than three to four months to complete.

4.08 It is recommended that all the three hundred fifty and odd districts should be surveyed within a period of four years in a phased manner. The present On-going Surveys cover about 50 districts and their reports will be available shortly. The remaining districts may be surveyed at the rate of about 100 per year.

4.09 Since the society is not static and various dynamic forces are at work, the changes in socio-economic structure are inevitable. It is, therefore, necessary to evaluate the situations through vocational surveys at regular intervals.

Schools for Vocational Studies

4.10 There are academic and sociological reasons to impart vocational training in the same school where general education is imparted to destroy the unhealthy mental barriers of status, means, intellectual abilities etc. among the students who are admitted to academic and vocational streams. It would also result in economising initial investment by making use of the existing facilities of classrooms, laboratories, library, play grounds, etc. The academic and vocational streams will be controlled by the Higher Secondary Boards and therefore, the question of recognition will present no special problems.

4.11 On the other hand there are equally weighty arguments for offering vocational courses in separate institutions. In such institutions there is a greater possibility that the academic as well as vocational teachers will devote all their attention to the students and better cohesion between theory and practice is likely to be achieved. If both the streams are located in the same school the students of one stream will necessarily work for longer hours than the other to acquire practical skills. The academic stream being essentially college preparatory it is necessary that duration of the course is rigidly for two year. On the other hand, the vocational courses will have to be conducted for varying durations and the instruction should follow modular system. Therefore, the evaluation system, the methods of instruction and duration of courses will have to be different. The Vocational Courses will have to be affiliated to the Councils of Vocational Education for purposes of National and State recognition. Naturally, the school administration will not be happy to be controlled by multiple agencies. The past experience in certain States of the Country where academic and vocational streams were conducted under one roof provides clear indications that psychological factors that were expected to diminish with time, instead, became more acute. Experience cannot be expected to be different for some years to come.

Therefore, even if any school has a capacity to run both the streams it is essential that the school has a separate wing or set-up to conduct the vocational courses. But the choice of such schools will have to be made very carefully and continuous supervision will have to be maintained.

4.12 To economise on the initial investment all industry-oriented courses should be added on to the existing polytechnics and ITIs. Some schools in the neighbourhood of industries could be attached to the industries with their cooperation and assistance. The para-medical courses should be provided in selected schools close to the hospitals and medical colleges. Vocational schools in commerce and home science will have to be equipped properly. The investment on them may not be prohibitive. The resources of the new defunct Junior Technical Schools and Multipurpose Schools lying unused should be fully harnessed and supplemented. As far as possible new facilities in selected schools on pilot basis should offer those vocational courses for which the existing institutions cannot provide adequate facilities and the demand for supply of new skills are evident.

4.13 Since adequate facilities for vocational education in rural areas are not available, all the new schools to provide vocational studies should be constructed in rural areas only and should be adequately equipped. It is recommended that at least 500 new schools may be constructed in a phased manner.

4.14 The Third All India Educational Survey indicates that during 1977-78, the enrolment in the X Standard in all the 9700 schools/colleges was about 28 lakhs. It might be expected that about 90% of these students have taken the examinations of whom 60% would pass and seek admissions to various institutions, academic and vocational. Assuming that about 2.5 lakhs will join the vocational institutions, there will be left about 12.8 lakhs of whom we propose to divert 3.5 lakhs to the vocational streams by providing adequate facilities in terms of space, equipment, library and well trained staff. This should be specially so for para-medical courses.

4.15 Keeping in view the existing facilities, it is estimated that 2,000 schools (including 500 new schools) would be required to provide vocational facilities during the next five years. The phasing may be as under :

Year	1978-79	1979-80	1980-81	1981-82	1982-83
No. of Schools	230	630	1030	1500	2000

Existing Facilities

4.16 Many of the existing technical and vocational schools have either reverted to academic instruction or deteriorated on account of neglect, inadequate supply of raw materials, and poor pay-scales to teachers. These institutions should be revitalised with appropriate inputs and attractive pay-scales for instructional staff. New vocational courses for which there is good demand should be added to these institutions and adequate facilities should be provided in them.

4.17 There are 327 polytechnics, which offer about 42 diploma courses in technical subjects and 13 in Commerce subjects. The durations of these diploma courses vary from two to three years. Some polytechnics also offer post diploma courses. About 80% of them offer traditional courses in civil, mechanical and electrical engineering. To make optimum use of the existing facilities, it is recommended that new courses in these major areas may be added to the polytechnics wherever necessary, strengthening the existing facilities if necessary.

4.18 There are 365 Industrial Training Institutes offering training in 53 trades mostly industry-oriented. Of them about a dozen require pass in 7th Standard and the rest pass in 10th Standard for admission. The durations of courses vary from 6 months to 2 years. Apprenticeship facilities with stipends are offered to those having courses of one year's duration or more. At present

103 trades are listed for apprenticeship, but many trades which have been designated do not have training facilities so far. It is, therefore, recommended that such courses may be identified for introduction in ITIs if the job potential is good for them.

4.19 Some high schools should be converted wholly into craft schools if there is good scope for employment and offer a variety of craft training. Besides, the existing facilities of the craft schools should also be expanded to accommodate new crafts as warranted by the vocational surveys. If the craft schools have deteriorated or have become defunct in the past it is on account of the non-availability of raw materials required for continuous work, inadequate physical facilities in terms of equipment and building space, poor scales of pay for the craft teachers and general apathy of the administration towards craft schools. If these institutions are to be revitalised it is necessary that these bottlenecks will have to be removed and steps taken to make the schools attractive. Since mostly the students from low income groups will be opting for these courses, adequate incentives in the form of scholarships should be offered to them. For the disposal of the finished products adequate marketing facilities will have to be created through cooperative ventures. All craft courses, as far as possible, should be so designed that they should lead to advance training in these disciplines through vocational higher secondary courses.

Teachers

4.20 The role of teachers is crucial in the scheme of implementation. It is the teacher who translates the scheme into action through well thought out instructional plan in the classrooms, laboratories, agricultural fields, workshops, hospitals, banks, cooperative stores, hotels, etc. There is perhaps sufficient expertise available in the basic subjects but very little in the new vocational subjects which may be selected for introduction. To prepare or train the adequate number of teachers requires time and the scheme cannot wait until then. On the other hand, half-baked or ill-trained teachers may destroy the whole scheme because of their poor understanding or incompetence. These are mutually irreconcilable aspects. For a vocational subject a teacher has to be one who has first class practical competence; he must also possess the comprehensive knowledge of scientific principles underlying the practicals. But a person who has a good background in theory only in our context will not be able to impart the practical skills. A compromise is needed at least in the initial stages. It is, therefore, necessary that a practitioner from the particular vocation is invited to participate in the instructional work and arrange for his training in instructional methods through short term courses—perhaps summer institutes. Simultaneously regular staff in certain areas may be appointed and trained. There is an advantage in having persons from the field to instruct the students. Not only the latest practices will be imparted and through his influence regular on-the-job training can be arranged but it may even ensure employment to the students ultimately resulting in a good collaborative arrangement.

4.21 Part-time teachers on suitable remunerations from the vocational fields should be employed. Many private agencies have training centres from which we can draft the instructors. Many retired defence service personnel with appropriate skills can also be appointed on short-term basis. But certain percentage of teaching complement must be appointed in each school on regular basis.

4.22 Periodical re-training of teachers, to keep them abreast of their knowledge in appropriate trades, should be arranged. The Technical Teacher Training Institutes, the Regional Colleges of Education, the Central Training Institutes and Small Scale Service Institutes should be involved in the teacher training programmes.

4.23 To ensure the success of this programme it is recommended that where vocational courses are imparted either the Head or deputy-head of the institution should possess vocational qualification.

Curriculum Preparation

4.24 A curriculum generally indicates the framework of aims and objectives of a course, the syllabus, instruction in the classroom, laboratory or workshop, teaching materials and evaluation. The main aim is to design appropriate curricula for vocational courses to attract a sizeable section of student population to vocational streams and to provide alternative avenues of training which prepare them for gainful vocations in their future careers.

4.25 The curriculum should be so designed as to develop skills of the levels and quality acceptable to the employing agencies; for, the test of effectiveness of the curriculum lies in the employability of the student. To integrate appropriate components of education and skill acquisition in the curricula, it is most desirable to bring together the experts from the employing agencies and academics and entrust them with the task. Preparing curricula centrally should be done away with. In preparing the curricula broadly the following is considered to be most appropriate :

1. Language	15%	of total instructional time
2. Basic subjects relevant to vocations	20%	
3. Vocational studies and Practice	65%	

4.26 Since a variety of courses of different durations are likely to be offered it will be highly advantageous to offer them in terms of well connected units or modules which are complete in themselves. A student may be permitted to receive instruction in as many modules as he desires to go through and on the completion of each module his performance shall be evaluated and certificate issued. For admission to any advanced courses later, completion of certain number of modules may be prescribed which he will be required to complete before seeking admission to a selected course.

4.27 Revision of curricula must be a continuous process to help identifying shortcomings and making modifications in the light of student and teacher performance.

Textbooks

4.28 As teachers, the good textbooks and teaching aids are indispensable prerequisites. Well illustrated books with good practical details without sacrificing the underlying scientific principles have to be ready before the courses are introduced.

4.29 The production of suitable textbooks for a large variety of vocations will be a formidable and time consuming job. It is, therefore, recommended that in the initial stages suitable publications may be procured from the countries where similar courses are conducted and be made available to teachers and students for consultations and study. Simultaneously, if publishers are encouraged to find knowledgeable authors who can write well illustrated books in clear and simple language with authentic practical details on the models of the foreign publications, keeping the local conditions in view, it will help solve our problems more expeditiously and also provide incentives to the publishers.

4.30 Simultaneously, Teacher guides based on the textbooks should be got prepared to help the teachers to modify their methods of instruction.

Courses for Rural Sector

4.31 At present the vocational schools are located mostly in the cities and towns and all the rural students who desire to benefit from vocational studies have no option but to move to urban centres. The courses invariably have urban leanings and a majority of the rural students seldom return to the villages after completion of their education as the urban set-up offers easier life, and several attractions. This is a great loss to the families who derive nothing out of their

sacrifice. To combat these problems imaginative steps will have to be taken not only to offer the type of education of their choice but also to create such conditions in their own surroundings which may provide them with a fairly decent living. If this could be achieved the problem of migration from rural to urban areas can be arrested.

4.32 The women population in rural areas have to be given even greater attention. In villages the family structure and age old practices are stronger than in towns and the system of education and training will have to eliminate the prejudices systematically and surely by offering congenial atmosphere in schools and opportunities of employment or self-employment. Social barriers are breaking down but not fast enough. The working group, therefore, feels that the solution to the rural problems would require much greater care and attention than the urban sector and it is the right time to tackle the problems without further delay.

4.33 Vocational Courses generally with agricultural bias should be introduced in rural areas. Vocationalisation of education may be linked with the new strategies for rural development and village uplift through various programmes like Small and Marginal Farmers Development, Integrated Tribal Development, Drought Prone Area Development, Community Area Development and Integrated Rural Development etc. These programmes will generate enormous opportunities for various types of skills and competencies and will broaden the scope of vocationalisation in rural sector. It is stated that 300 Blocks will become operational in 1978-79 and another 500 Blocks by 1979-80 and about 5000 Blocks by the end of the Sixth Plan. It is, therefore, necessary to generate the necessary skills, knowledge and competencies in their own neighbourhood. The future farmers are to be provided vocational training in scientific agriculture and upto-date production skills.

4.34 Courses on modern methods of crop production through mechanised farming, use of appropriate types of fertilizers, methods of irrigation etc. should be offered to those who are likely to benefit from such education and training and possess land holdings of 3 hectares and more. On the other hand vegetable and fruit culture and seed production may offer lucrative proposition to small and marginal farmers. Cash crops such as mulberry, areca, coffee, coconuts, spices etc. can be raised when good irrigation facilities and climatic conditions favour. These courses should provide the special knowledge and techniques required for such cultivation.

4.35 Courses of various durations on animal husbandry, dairying and dairy products, poultry farming etc. should be offered for gainful self-employment.

4.36 Courses on repairing and maintenance of farm machines like tractors, power tillers, pumping sets, plant protection equipment, threshers and others relevant to the rural needs should also be provided. These courses will provide opportunities for self-employment and wage employment in their own neighbourhood.

4.37 Cold storage of vegetable, milk processing, knitting and embroidery, designing and weaving of carpets, food preservation etc. will be equally attractive courses for girls.

Courses for Urban Sector

4.38 Most of the industries, business enterprises, administrative offices, higher educational institutions and health organisations are located in cities and towns, and the living patterns are essentially dictated by the activities in them. The middle-level employment opportunities will be mostly in the industries, public works departments, offices, hospitals, business centres, banks, educational institutions and many social service organisations. For most of the engineering and technological jobs adequate training facilities are available in the polytechnics and industrial training institutes.

4.39 Trade and commerce offer a fertile field for a variety of jobs and require minimum financial inputs. When the plan targets for the export reach 10 thousand crores, as it is expected to reach

in a year or two, middle level services such as stenographers, office assistants, accountants, import-export assistants etc. will be needed in large numbers. The demand cannot be met with the present institutional training facilities. Good Commercial Schools will then have to be started at the higher secondary stage as an advance preparation.

4.40 Textile printing, garment making, knitting, banking and confectionery and cosmetics are areas quite fertile and offer vast scope for self-employment. Handicrafts have good export potential. Khadi and Gramudyog Commission has big plans for expanding its activities which are expected to throw up large employment potential. For all these vocations facilities will have to be created.

4.41 There are about 618 para-medical schools of which 526 train nurses and 24 pharmacists. The total intake per year is about 5200 whereas the country needs 25,000 every year. For every doctor it is said 5 para-medical assistants are needed. The requirement for Multi-purpose-health workers during the next five years is expected to touch 5 lakhs and ophthalmic technicians 50,000. Besides, much of the hospital equipment is reported to be lying idle because of lack of repair and servicing facilities. It is also likely that 32 medical colleges out of 106 will be elevated to post-graduate level and each college will have to raise its own para-medical staff. In view of the large shortage in para-medical forces, especially in rural sector, creation of new facilities should be given priority. Since para-medical courses cannot be conducted in every vocational school, it is recommended that a certain number of new schools should be developed in the neighbourhoods of medical colleges and hospitals and offer suitable courses by utilising the services of the qualified staff and on-the-job training facilities available there. This will help to meet the needs of these institutions and also the requirements of the society.

4.42 Repair, maintenance of common domestic appliances such as electrical gadgets, refrigerators, scooters, motorcycles etc. have very good self-employment potential. Adequate training facilities are worth creating in big cities like Delhi, Calcutta, Bombay, Madras, Bangalore, Hyderabad and Kanpur.

Skills for Small Scale Industries

4.43 A variety of other occupations which have bright job opportunities but for which no training facilities available are likely to increase with the development of small scale, tiny and cottage industries. Ancillary industries around big manufacturing centres will also spring up. The existing instructional facilities will hardly be able to cope up the demand for new skills especially in non-industrial areas. Therefore, adequate facilities will have to be provided.

Retraining

4.44 In view of the revolutionary changes in science and technology and the contemplated social transformation, the training in narrow job specifications or in over specialised employment in other areas might become obsolescent with changing pattern of production. It is therefore recommended that the vocational courses should be designed with good knowledge in basic subjects so as to help the student adapt to changing developments or easily undergo retraining in an allied skill.

Vertical Mobility

4.45 The vocationalisation of education at +2 stage should be so structured as to make it both terminal and continuing. The aspirations of the students for superior positions on the employment ladder cannot be ignored and this can be done when the system permits him to secure further qualifications for vertical and horizontal mobility whenever they desire or opportunities occur.

4.46 While most of the students of the Vocational Courses will enter into the world of work either through self-employment or by taking up a job, for those who wish to continue and improve

their qualifications, there should be a provision for allowing them admission in technical and professional institutions in specialised areas of their interests. Similarly universities should not close the doors for those who wish to pursue further studies by suitably offering package courses in different subjects.

Flexibility of duration of studies

4.47 The Vocational Courses should have flexibility in the duration of training appropriate to the expected levels of competencies, skill proficiency, as any rigid pattern of two or three years duration may tend towards perpetuation of the existing straight jacket system.

Further Educational facilities

4.48 Learning is a continuous process, therefore, part-time, on-the-job vocational and technical training should be made available for those who have entered employment and wish to improve their professional competence through further education. Such courses may be of varying duration and may include part-time courses, correspondence courses, sandwich courses, etc.

4.49 The industries mostly have developed on the imported technologies and know-how. These industries demand higher level skills to cope with the operation of sophisticated machinery and equipment. It is likely that as the present industrial practices go obsolete and more advanced techniques are adopted and newer machinery installed, the workers and supervisory staff also need up-dating their skills and knowledge. Therefore, advanced specialised training facilities have to be planned. Besides, those engaged in farming and agro-based industries, small entrepreneurs and those working in small scale and cottage industries, para-medical technicians, secretarial staff and the like may desire to improve their professional status through further education. It is very necessary, therefore, to plan in specialised advanced diploma courses whose standards are equivalent to university degrees. These advanced courses must be distinctly different from the traditional university courses and be indicative of the levels of specialisation. Even if these diplomas are awarded in the traditional colleges they must bear the stamp of professional excellence and acceptance.

Socially Useful Productive Work

4.50 The Education Commission in its wisdom felt that in modern world whose activities are so comprehensively and completely controlled by the fantastic developments in science and technology, every child must be equipped to meet the challenges it will have to face in its life span and for such a preparation the first ten-year education should be general for all the students and include comprehensive studies in elementary science, mathematics, social sciences and humanities. Socially useful productive work should be integrated with the general education to equip the students with certain elementary skills that will enable them to take care of simple functions such as repair and maintenance of domestic appliances and vehicles, care of garments, raising vegetables, rendering social services etc. These not only are productive in a sense but inspire self-confidence and self-dependence among the children. The student may also gain some special proficiency in a particular skill. Since a segment of students drop out at the end of ten-year schooling the elementary exploratory experiences in general would hardly be sufficient to help him to enter life. This opinion is held by some educationists. In a way this may however, serve as pre-vocational training for those who may opt for vocational studies later.

4.51 An important factor that controls and promotes the pre-vocational training is the availability of means of training for a variety of student interests, aptitudes and inclinations. In this the practice of socialist countries can be profitably emulated. Creative work centres can be established in chosen localities with facilities and equipment which the schools cannot provide for on-the-job practice or production of goods. They can be kept open for long hours of the day for all students, say, of age-group 14 to 16. The finished products prepared by the students, if of good quality, can be sold and the sale proceeds may be able to bring revenue to

meet the raw-material cost and also some earning to the students. But this assumes that well-qualified training personnel are available and the creative work centres are equipped with a variety of equipment.

Apprenticeship

4.52 Apprenticeship facilities shall be extended to all the students who complete education in vocational streams if they desire to benefit from such training.

Guidance and Counselling

4.53 To help the students to make judicious selection of vocational courses, it is desirable to provide guidance and counselling for careers and courses to the students.

Recruitment Policy

4.54 While the largest proportion of job-opportunities relate to middle level employment it has been observed that advertisement concerning 80% of such jobs prescribe a university degree as an essential qualification irrespective of the job-requirements. What is needed in most of these positions is adequate skill and proficiency to perform duties efficiently and not a university degree. This could be secured through suitable vocational education/training without the university education. In view of this there is full justification that employment policy of the Government as well as public undertakings should be so revised that wherever vocationally qualified persons are available they should be preferred to graduates and they should be entitled to the pay scales and promotional avenues available to the graduates, so long as the jobs performed are the same or similar. They should also be given opportunities for superior positions when they improve their qualifications through correspondence or evening courses or block time training. Such a recruitment policy will provide the greatest incentive to the really intelligent students to join the vocational streams especially those coming from low income groups and would go a long way in creating a favourable reaction among the students and more so among their parents. This factor alone in due course will make vocational institutions more popular than academic institutions.

National Council of Vocational Education

4.55 At present different Vocational Courses are controlled by different Ministries and organisations, statutory or otherwise, having professional control over certain vocations. The Indian Council of Agricultural Research is responsible for agricultural education at university and polytechnic levels; the All India Council for Technical Education at the Centre and the State Boards of Technical Education in the States control Polytechnic education while the Industrial Training Institutes are controlled by the Directorates of Employment and Training in the Ministry of Labour; all the para-medical schools are under the control of statutory councils, such as the Nursing Council, the Pharmacy Council and Dental Council. Since all these organisations are functioning independently there is no co-ordination or cooperation. There is replication of efforts and financial investment. Each of these organisations is functioning in isolation safeguarding its interests jealously even though each is offering education and training for middle level jobs. To avoid the wastage of resources and to bring cooperation and co-ordination among various agencies there must be an Apex Body in a Department of the Government. All other existing statutory and autonomous bodies controlling vocational education should be affiliated to it. As recommended by the All India Council of Technical Education and endorsed by C.A.B.E., National Council of Vocational Education should be set up at the Centre with corresponding State Councils in all States. All the agencies imparting vocational education in the fields of para-medical, agriculture and technical etc. shall be affiliated to the State Councils of Vocational Education in the States and to the National Council at the national level. The constitution, membership and its functions have to be worked out in clear terms. These councils should ensure, quality and standard of vocational education, co-ordination and cooperation among all agencies which are at present offering vocational education and those connected with employment.

Strengthening of Education Department

4.56 Vocationalisation of education falls under the purview of school education although the programmes in vocational streams may extend beyond two years of study at the higher secondary stage. The responsibility of planning, co-ordination, monitoring and evaluation of the programmes, therefore, naturally belongs to the Department of the Government which is dealing with the school education at the higher secondary stage. Naturally, the experiment being new and of considerable magnitude with the attendant complexities, it should be headed by very senior officer of the Ministry, not in any case lower than that of a Bureau-Head, who will be supported by adequate competent staff and other facilities. The Bureau of School Education will be responsible for ensuring proper implementation of the policies laid down and the schemes set by the NCVE through the appropriate State Government Bodies. The Bureau will also be responsible for ensuring provision of infrastructural facilities, appointment of competent instructional staff—full time and part time—purchase of equipment, periodical inspection of schools etc. Most importantly the Bureau will co-ordinate the work of the different Ministries insofar as the vocational programmes are concerned and will work out the guiding principles for implementation of the scheme efficiently and economically, scheme of execution, control and monitoring. The Bureau will also ensure, through the SCVEs, arrangement of apprenticeship, conduct of district or regional vocational surveys and collaborative on-the-job training facilities during institutional programmes through cooperation of local agencies.

Obligation of Government and Private Sector

4.57 The Government have a great obligation to the present and future generations in offering a system of education relevant to the vital needs of the nation and the urgent requirements of the masses. Political will, enlightened and imaginative administration and daring to learn from mistakes committed in the past and the present, a will to identify the causes of failure and to find solutions are the major tasks before the Government. However, this huge task, cannot be accomplished without the willing cooperation of all concerned. The country should encourage private voluntary organisations and also the patriotic individuals to participate in this national venture by offering incentives to start new schools and allowing certain autonomy to run them. Incentives may also be provided by allowing certain Tax exemptions in lieu of Training facilities provided to the students of vocational stream.

4.58 Investment in vocational education is an investment for the future generation. The country should find necessary resources to make this investment lest the coming generations should hold the present one responsible for all their miseries and problems. The task is no doubt stupendous; yet a courageous beginning founded upon sound practical principles is needed. The Working Group feels unable to offer a better scheme in the present context other than the one proposed in this report.

CHAPTER V

FINANCIAL ESTIMATES

5.01 The financial estimates involved in the implementation of the programme of vocationalisation of education have been calculated on the basis of norms laid down in the centrally sponsored Scheme of Vocationalisation of Higher Secondary Education or those recommended by NCERT. However, as this programme has been launched recently it is difficult to frame precise financial estimates.

District Vocational Surveys

5.02 The occupational Survey is an essential prerequisite of the programme. It is felt that a sum of Rs. 10,000 per district will be sufficient. Thus the financial requirements would be as under :

(Rs. in lakhs)					
Year	1978-79	1979-80	1980-81	1981-82	1982-83
No. of Districts	50	100	100	82	—
Amount	5.00	10.00	10.00	8.20	—
					Total—33.20

Number of Schools to be selected

5.03 The whole scheme will have to be implemented in a phased manner depending upon the survey data. To start with, during 1978-79, it is proposed to start vocational studies in 200 schools and to introduce 4 courses in each school with an enrolment of 25 each, so that total enrolment is 20,000. About 2,000 students have already enrolled themselves during the current year and they will be reaching twelfth class during 1978-79. The number of schools and enrolment during the Plan period would be as under :

Year	1978-79	1979-80	1980-81	1981-82	1982-83
Number of schools	230*	630	1030	1500	2000
New Enrolment	23,000	63,000	1,03,000	1,50,000	2,00,000
Total enrolment	25,000	86,000	1,66,000	2,53,000	3,50,000

*includes 30 started during 1977-78.

5.04 Assuming that at least 4 courses are instituted as stated above in each school and they are in one or two major areas of vocations, we may have to invest about Rs. 1,000 per student to meet the salaries of instructional staff and an additional Rs. 250 per student for raw material. Thus we require Rs. 1,250 per student per year. Therefore, the recurring expenditure will be as under :

(Rs. in lakhs)					
Year	1978-79	1979-80	1980-81	1981-82	1982-83
Amount	312.5	1075	2075	3162.5	4375
					Total—11,000

5.05 It is also necessary to make provision for contingent expenditure at about Rs. 10,000 per year per school to meet the cost of stationery, examination, printing, transport facilities for students for on-the-job training etc. The recurring expenditure on this will be :

(Rs. in lakhs)					
Year	1978-79	1979-80	1980-81	1981-82	1982-83
Amount	23	63	103	150	200
					Total—539

5.06 Since it is also proposed to equip the Polytechnics, ITIs, Para-medical Schools with additional equipment for laboratories and workshops, provision has to be made according to some reasonable norms even though some vocational courses do not need costly equipment and some other may require costly equipment. It is felt that the reasonable average estimate would be Rs. 60,000 per school (Rs. 15,000 per course). In addition to this a sum of Rs. 15,000 per school will be required for the library. In estimating equipment and library cost it is presumed that during the first four years the schools have to be equipped with the required facilities and during the last year some provision has to be made for adding to the equipment and library for the purpose of improvement, up-dating and replacement. An amount of Rs. 2500 per course for library and equipment has been provided. The expenditure for these items will be :

(Rs. in lakhs)					
Year	1978-79	1979-80	1980-81	1981-82	1982-83
Equipment	120	240	240	282	300
Library	30	60	60	70.5	75
Replacement & up-dating	—	—	—	—	23
					Total—1500.5

New Schools

5.07 In addition to making use of all available facilities and supplementing facilities in 1500 schools, at least 500 new schools may have to be constructed and adequately equipped. Some of these schools should be constructed in the neighbourhood of hospitals for para-medical courses, others for home science, dress making and courses in distributive services. Among these 150 schools must be allotted for para-medical courses. Whenever it is felt necessary hostel facilities should also be provided. On an average for constructing functional buildings an allocation of Rs. 1.5 lakh per school and an equal amount for the hostel is necessary. For equipment and library a sum of Rs. 1.75 lakh per school would be necessary. As Rs. 0.75 lakh has already been provided for this purpose *vide* para 5.06, an additional amount of Rs. one lakh per new school will be required. Thus non-recurring expenditure for these schools would be :

(Rs. in lakhs)					
Year	1978-79	1979-80	1980-81	1981-82	1982-83
No. of schools	30	100	150	150	70
Amount	120	400	600	600	280
					Total—2000

Curriculum Development and Teachers' Training

5.08 Curriculum development is an essential ingredient of the whole scheme and the States will have to be supplied with financial support for the purpose. It is, therefore, decided to provide an ad-hoc amount of Rs. 2 lakhs per year per State and Rs. 6 lakhs per year for all the Union

Territories. For teacher training through short-term programmes of periods up to 1 month and at Rs. 1,000, per teacher the figures have been worked. In arriving at the figures, it is assumed that some percentage of teachers already will have had adequate training. The expenditure on these items will be :

(Rs. in lakhs)					
Year	1978-79	1979-80	1980-81	1981-82	1982-83
(i) Curriculum Development	50	50	50	50	50
(ii) Teachers' Training	8	24	32	36	20
				Total	(i) 250 (ii) 120
				G. Total	370

Creative Work Centres

5.09 It has been recommended that good creative work centres should be created in district headquarters to encourage hobbies and inventiveness in as many places as is possible. We may allow Rs. 1 lakh per centre for building an equal amount for equipment and tools and an additional raw material grant of Rs. 100 per student. It is expected that students themselves will bring the necessary materials and take the finished products with them. Whenever the raw material is supplied to them, the products would be the property of the centre, which can be sold and the proceeds can be utilised for purchase of additional raw material. The centres require the staff at the rate of one superintendent, 4 technicians (two for each shift), 4 workshop assistants (two for each shift), 2 clerks and 3 watchmen. This would require Rs. 80,000 per year per centre. It is presumed that about 100 students will take advantage of the facilities in the Centre in two shifts. It is desired to open 300 such creative work centres during the plan period in a phased manner. The recurring and non-recurring expenditure on the establishment of these centres will be :

(Rs. in lakhs)					
Year	1978-79	1979-80	1980-81	1981-82	1982-83
(i) Building equipment (non-recurring)	40	80	120	160	200
(ii) Salary of staff (recurring)	16	48	96	160	240
(iii) Raw material (recurring)	2	6	12	20	30
				Total	(i) 600 (ii) 560 (iii) 70
				G. Total	1230

Strengthening of Education Department

5.10 It is difficult to visualise the quantum of expenditure on strengthening of the Education Department. However, an ad-hoc amount of Rs. 25 lakhs may be earmarked for this purpose.

Abstract of Financial Outlay of Plan Period 1978-83

	(Rs. in lakhs)
I <i>Vocational Surveys (Non-recurring)</i>	33.20
II <i>Schools (Developed and Converted)</i>	
(i) Salary of instructional staff & raw materials etc. (Recurring)	11,000
(ii) Contingent (Recurring)	539
(iii) Equipment (Non-recurring)	1,182
(iv) Library (Non-recurring)	295.5
(v) Replacement of Equipment (Recurring)	23
	} 13039.50
III <i>New Schools (Additional Requirements)</i>	
(i) Buildings (Non-recurring)	750
(ii) Hostels (Non-recurring)	750
(iii) Additional Equipment & Library (Non-recurring)	500
	} 2000.00
IV <i>Curriculum Development (Recurring)</i>	250.00
V <i>Teachers' Training (Non-recurring)</i>	120.00
VI <i>Creative Work Centres</i>	
(i) Building & Equipment (non-recurring)	600
(ii) Salary of instructors (recurring)	560
(iii) Raw material (recurring)	70
	} 1230.00
VII <i>Strengthening of Education Department</i>	25.00
	Total 16697.70
	(Say about 167 crores)

CHAPTER VI

SUMMARY OF RECOMMENDATIONS

- 6.01** To identify the vocations having good employment potential, to locate good schools where the new vocational courses can be introduced and to assess the local assistance for on-the-job training, vocational surveys should be conducted, in a phased manner before introducing Vocational Courses and only those courses which have good employment potential should be started. [4·04 to 4·08]
- 6.02** Such vocational surveys should be conducted at regular intervals to evaluate the on-going vocational programmes, to suggest modifications or improvement of curricula and recommend new vocations for which courses have to be designed. [4·09]
- 6.03** During the next 5 years, vocational facilities should be provided in a minimum of 2000 schools/colleges in a phased manner of which 500 should be new ones. [4·15]
- 6.04** Since almost all the Vocational/Technical institutions are located in the urban or semi-urban centres, the new schools for vocational studies should be constructed in the rural areas and they should be well-equipped. [4·13]
- 6.05** All the existing Technical and Vocational schools at the *secondary stage* should be revitalized by providing appropriate inputs and new courses should be added to ensure optimum use of the existing facilities. [4·12, 4·16, 4·17 & 4·19]
- 6.06** Adequate incentives in the form of scholarships should be offered to the students of vocational streams at the secondary stage. [4·19]
- 6.07** Adequate number of vocational teachers should be appointed and trained both on regular and part-time basis on suitable remunerations. Periodical in-service training should also be arranged for the regular staff for updating their knowledge and skills. [4·20, 4·21 & 4·22]
- 6.08** In all vocational schools/colleges where vocational studies are offered, either the Head of the School/College or the Deputy Head should possess vocational qualifications in at least one major vocation, to look after the proper implementation. [4·23]
- 6.09** Preparation of curricula centrally should be done away with. Curriculum Committees consisting of professional experts, future employers and academics should be set up for each region and should be entrusted with the task of preparing curricula relevant to the region or the district. The accent should be more on preparing students for self-employment than wage employment. [4·25]
- 6.10** All vocational courses should be offered in terms of well connected, self-contained units or modules and the students' achievement should be evaluated at the completion of each module. A Certificate of completion of the module satisfactorily should be issued to the student. [4·26]
- 6.11** Good textbooks, teaching aids and teacher guides have to be ready before the vocational courses are launched. At the initial stages, foreign publications should be procured and made available. Local authors and publishers should be encouraged to produce suitable books in simple language and with adequate practical details. [4·28, 4·29 & 4·30]
- 6.12** The programme of vocationalisation in rural areas should be linked with various programmes of rural development. [4·03, 4·31 to 4·37 & 4·43]
- 6.13** In the urban sector, more stress should be laid on the courses in the areas of commerce and trade, textiles, para-medical, electrical and other technical subjects. [4·03, 4·38 to 4·43]
- 6.14** Vocational courses should be designed to inculcate the capacity to combine intellectual knowledge with skill training in the selected vocations. [4·43]

6.15 Opportunities for vertical and horizontal mobility for vocationally qualified students should be provided in ample measure to encourage a sizeable section of students to pursue vocational studies. Specialised courses in the lines of occupations should be offered in professional institutions to help students claim superior positions of employment. [4·45 & 4·46]

6.16 There should be flexibility in the duration of vocational courses according to the needs of students, the required levels of competency and proficiency. Rigidity of duration of courses is hardly conducive to the vocational courses and may tend to become disincentive to the aspiring students. [4·47]

6.17 For up-dating and improving skills and knowledge, advanced specialised courses of varying durations should be planned through part-time, correspondence, sandwich and short time intensive courses. [4·48 & 4·49]

6.18 Socially Useful Productive Work should be integrated with general education in the academic stream to equip all the students with certain elementary skills. [4·50]

6.19 Creative Work Centres/Hobby Centres should be established in the centrally located situations to encourage creative faculties of the youngsters and to promote productive impulses. [4·51]

6.20 Apprenticeship facilities should be extended to all the students who complete vocational courses so that good on-the-job training is available for further improvement of competencies. [4·52]

6.21 Steps should be taken to provide guidance and counselling facilities for careers and courses to all the students. [4·53]

6.22 The recruitment policy of the Governments and public sector undertakings should be revised and job requirements should replace the academic qualifications as *essential qualifications* for selection. Where graduates and vocationally qualified persons appear for tests/interviews, other things being equal or nearly equal, preference should be given to vocationally qualified persons. [4·54]

6.23 The National Council of Vocational Education and State Councils of Vocational Education should be set up without delay and their spheres of action, composition and functions to be performed should be defined. These Councils should ensure, quality and standard of vocational education, co-ordination and cooperation among all agencies which are at present offering vocational education and those connected with employment. [4·55]

6.24 Since Vocationalisation of Education falls into the purview of 12 year school education, it is necessary that it remains under the administrative control of a Senior Officer, at least of the rank of a Bureau Head, whose staff should be adequately strengthened to enable the Bureau Head to discharge his responsibilities effectively and expeditiously. He shall be responsible for implementing all the decisions of the N.C.V.E. [4.56]

6.25 The private organisations and individuals should be encouraged to participate in the programme by providing incentives to start new schools and ensure autonomy to run them. Incentives may also be provided by allowing certain tax exemptions in lieu of training facilities provided to the students of vocational streams. [4.57]

Working Group on Vocationalisation—Composition of

1. **Shri P. Sabanayagam** *Chairman*
Secretary to the Government of India
Ministry of Education & Social Welfare
New Delhi.
2. **Dr. Ajit Mazumdar** *Member*
Secretary
Planning Commission
Yojna Bhavan
New Delhi.
3. **Shri K. P. A. Menon** *Member*
Additional Secretary
Department of Rural Development
Ministry of Agriculture & Irrigation
Krishi Bhavan
New Delhi.
4. **Dr. Shib K. Mitra** *Member*
Director
National Council of Educational Research & Training
New Delhi.
5. **Dr. M. S. Swaminathan** *Member*
Director-General
Indian Council of Agricultural Research &
Secretary to the Government of India
Ministry of Agriculture & Irrigation
Krishi Bhavan
New Delhi.
6. **Shri S. Loveraj** *Member*
Director General of Employment & Training
Shram Shakti Bhavan
New Delhi.
7. **Dr. P. P. Goel** *Member*
Director-General of Health Services
Nirman Bhavan
New Delhi.
8. **Dr. S. N. Saraf** *Member*
Chief (Education)
Planning Commission
Yojna Bhavan
New Delhi.
9. **Shri J. N. Tewari** *Member*
Chief Executive Officer
Khadi and Village Industries Commission
Gramodaya 3, Irla Road
Vile Parle (West)
Bombay-400056.

10. Shri P. R. Nayak *Member*
 Commissioner for Education &
 Secretary to the Government of Karnataka
 Department of Education & Youth Services
 Vidhana Soudha
 Bangalore.
11. Dr. R. P. Singhal *Member*
 Chairman
 Central Board of Secondary Education
 17-B Indraprastha Estate
 New Delhi-110002.
12. Dr. (Smt.) Rajammal P. Devadas *Member*
 Director
 Sri Avinashilingam Home Science College for Women
 Coimbatore-641011.
13. Dr. C. R. Mitra *Member*
 Director
 Birla Institute of Technology & Science
 Pilani-333031.
14. Dr. G. S. Laddha *Member*
 Director
 Algappa Chettiar College of Technology Buildings
 Guindy, Tamil Nadu
 Madras-25.
15. Prof. Rais Ahmed *Member*
 Department of Physics
 Aligarh Muslim University
 Aligarh. (U. P.)
16. Shri S. L. Kirloskar *Member*
 Chairman
 Kirloskar Oil Engines Ltd.
 Pune-411003.
17. Shri I. K. Gupta *Member*
 Chairman & Managing Director
 Indian Telephone Industries Ltd.
 Dooravani Nagar
 Bangalore-560016.
18. Shri B. P. Poddar *Member*
 President of Indian Chambers of Commerce & Industry
 Federation House
 Tansen Marg
 New Delhi-110001.
19. Shri Narendra Kalantri *Member*
 Hony. Secretary
 Federation of Associations of Small Industries of India
 107, Aminabad
 Lucknow. (U. P.)

20. Prof. P. S. Mani Sundaram
Principal
Regional Engineering College
Tiruchirapalli-15. *Member*
21. Shri Inder Malhotra
Journalist
Times of India
Bombay-400001. *Member*
22. Smt. J. Anjani Dayanand
Joint Secretary to the Government of India
Department of Education
Ministry of Education & Social Welfare
New Delhi. *Member-Secretary*
- Special Invitees**
23. Shri I. P. Anand
Thaper House
New Delhi.
24. Shri R. N. Azad
Joint Secretary
Department of Rural Development
New Delhi.
25. Prof. C. V. Govinda Rao
Head, Vocationalisation of Education Unit
National Council of Educational Research and Training
New Delhi.

**Working Group on Vocationalisation—Sub-Group on Vocationalisation of Education—
Rural Sector**

- | | | |
|----|---|-----------------|
| 1. | Shri R. N. Azad
Joint Secretary
Department of Rural Development
Ministry of Agriculture & Irrigation
Krishi Bhavan
New Delhi-110001. | <i>Chairman</i> |
| 2. | Dr. O. P. Gautam
Deputy Director General (Education)
Indian Council of Agricultural Research
Krishi Bhavan
New Delhi-110001. | <i>Member</i> |
| 3. | Shri C. R. Krishnamurthi
Joint Secretary (K)
Department of Health
Ministry of Health & Family Welfare
Nirman Bhavan
New Delhi-110011. | <i>Member</i> |
| 4. | Shri B. N. Guha Biswas
Additional Director of Training
Directorate General of Employment and Training
Ministry of Labour
Shram Shakti Bhavan
New Delhi-110001. | <i>Member</i> |
| 5. | Shri I. C. Puri
Development Commissioner
Small Scale Industries
Ministry of Industry
Nirman Bhavan
New Delhi-110011. | <i>Member</i> |
| 6. | Shri Narendra Kalantri
Hon. Secretary
Federation of Associations of Small Industries of India
107, Aminabad
Lucknow. (U.P.) | <i>Member</i> |
| 7. | Shri J. N. Tewari
Chief Executive Officer
Khadi and Village Industries Commission
Irla Road, Vile Parle (West)
Bombay. | <i>Member</i> |
| 8. | Shri K. G. Badlani
Managing Director
Rural Electrification Corporation Ltd.
D.D.A. Bldg., Nehru Palace
New Delhi. | <i>Member</i> |

9. Prof. (Miss) Malathi Bolar *Member*
 Director
 Institute of Applied Manpower Research
 I. P. Estate
 New Delhi-110002.
10. Shri V. K. Shunglu *Member*
 Director (IF)
 Department of Banking
 Ministry of Finance
 Jeewan Deep Building
 Parliament Street
 New Delhi-110001.
11. Shri P. R. Nayak *Member*
 Commissioner for Education &
 Secretary to the Government of Karnataka
 Department of Education & Youth Services
 Bangalore.
12. Dr. R. P. Singhal *Member*
 Chairman
 Central Board of Secondary Education
 17-B Indraprastha Estate
 New Delhi-110002.
13. Dr. Y. K. Alagh *Member*
 Adviser
 Perspective Planning Division
 Planning Commission
 Yojna Bhavan
 New Delhi-110001.
14. Shri S. E. Joseph *Member*
 Chief (Village & Small Industries)
 Planning Commission
 Yojna Bhavan
 New Delhi-110001.
15. Dr. D. N. Nandekar *Member*
 Additional Manpower Officer
 Government of Maharashtra
 Mantralaya Annexe
 Bombay.
16. Shri R. N. Kapur *Member*
 Principal
 Allahabad Polytechnic
 Allahabad.
17. Shri Inder Prakash Anand *Member*
 Thaper House
 124, Janpath
 New Delhi-110001.
18. Prof. A. K. Mathur *Member*
 Centre for Study of Regional Development
 Jawaharlal Nehru University
 New Delhi.

19. **Shri D. R. Dua**
Technical Officer
Department of School Education
National Council of Educational Research and Training
New Delhi.

Member-Secretary

Special Invitees

20. **Shri Devendra Kumar**
Director
Centre of Science for Villages
Wardha.
21. **Dr. (Smt.) Rajammal P. Devadas**
Director
Sri Avinashilingam Home Science College for Women
Coimbatore-641011.
22. **Shri N. Perumal**
Joint Director (ET)
Director of Extension
Shastri Bhavan
New Delhi.
23. **Dr. J. B. Singh**
Joint Director (Ext)
Director of Extension
Shastri Bhavan
New Delhi.

**Working Group on Vocationalisation—Sub-Group on Vocationalisation of Education—
Non-Rural Sector**

- | | | |
|----|---|-----------------|
| 1. | Shri Inder Prakash Anand
Thaper House
124, Janpath
New Delhi-110001. | <i>Chairman</i> |
| 2. | Shri C. R. Krishnamurthi
Joint Secretary (K)
Department of Health
Ministry of Health & Family Welfare
Nirman Bhavan
New Delhi-110011. | <i>Member</i> |
| 3. | Shri B. N. Guha Biswas
Additional Director of Training
Directorate General of Employment and Training
Ministry of Labour
Shram Shakti Bhavan
New Delhi-110001. | <i>Member</i> |
| 4. | Shri I. C. Puri
Development Commissioner
Small Scale Industries
Ministry of Industry
Nirman Bhavan
New Delhi-110011. | <i>Member</i> |
| 5. | Prof. Rais Ahmed
Department of Physics
Aligarh Muslim University
Aligarh. (U.P.). | <i>Member</i> |
| 6. | Shri Narendra Kalantri
Hon. Secretary
Federation of Associations of Small Industries of India
107, Aminabad
Lucknow. | <i>Member</i> |
| 7. | Shri Inder Malhotra
Times of India
Dadabhai Naroji Street
Bombay. | <i>Member</i> |
| 8. | Prof. (Miss) Malathi Bolar
Director
Institute of Applied Manpower Research
I. P. Estate
New Delhi-110002. | <i>Member</i> |

9. Shri V. K. Shunglu *Member*
 Director (IF)
 Deptt. of Banking, Ministry of Finance
 Jeewan Deep Buldg., Parliament Street
 New Delhi-110001.
10. Shri P. R. Nayak *Member*
 Commissioner for Education and
 Secretary to the Government of Karnataka
 Department of Education & Youth Services
 Bangalore.
11. Dr. R. P. Singhal *Member*
 Chairman
 Central Board of Secondary Education
 17-B Indraprastha Estate
 New Delhi-110002.
12. Dr. Y. K. Alagh *Member*
 Adviser
 Perspective Planning Division
 Planning Commission, Yojna Bhavan
 New Delhi-110001.
13. Shri S. E. Joseph *Member*
 Chief (Village & Small Industries)
 Planning Commission
 New Delhi.
14. Dr. D. N. Nandekar *Member*
 Additional Manpower Officer
 Department of Planning
 Government of Maharashtra
 Bombay.
15. Prof. C. V. Govinda Rao *Member*
 Head, Vocationalisation of Education Unit
 National Council of Educational Research and Training
 New Delhi.
16. Prof. P. L. Malhotra *Member*
 Principal
 College of Vocational Studies
 7, Doctors Lane, Gole Market
 New Delhi-110001.
17. Prof. A. K. Mathur *Member*
 Centre for Study of Regional Development
 Jawaharlal Nehru University
 New Delhi.
18. Shri A. K. Mandal *Member-Secretary*
 Deputy Educational Adviser (S)
 Department of Education
 Ministry of Education & Social Welfare
 New Delhi.

Working Group on Vocationalisation

Sub-Groups

Rural Sector & Non-Rural Sector

The Terms of Reference

- (i) to identify broadly the opportunities for students leaving school at different levels, viz. secondary and higher secondary in Rural/Non-Rural Sector, as a result of the plan strategy and programmes of development;
- (ii) to specify the outlines of appropriate institutional and non-institutional programmes for imparting these skills;
- (iii) to suggest ways and means for utilising existing facilities to take care of these programmes; and
- (iv) to advise on the need for and extent of providing new facilities, if necessary, for training the school leavers for immediate employment.

**Distribution of Technical and Vocational Education and Training Institutions
and their Sanctioned Intake, Enrolment and Out-turn as on 31-12-1973**

Sl. No.	Type of Institution	No. of Institution			Sanctioned In take			Enrolment			Out-turn		
		Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
1.	Polytechnic	295	32	327	46,460	3,628	50,088	5,008	7,494	1,02,502	15,836	883	16,719
2.	Industrial Training Institute	329	36	365	1,44,482	10,569	1,55,051	1,29,606	9,148	1,38,754	59,920	4,436	64,356
3.	Junior Technical School	216	50	266	16,418	3,174	19,592	38,024	7,285	45,309	4,950	755	5,705
4.	Craft & Handicraft School	293	177	470	11,303	4,030	15,333	13,402	4,273	17,675	6,986	2,884	9,870
5.	Industrial and Technical school	1,131	263	1,394	67,640	9,605	77,245	66,410	10,019	76,429	33,568	4,957	38,525
6.	Agricultural School	48	57	105	2,560	3,004	5,564	3,092	3,450	6,542	2,158	2,624	4,782
7.	Forestry School	17	20	37	1,019	1,160	2,179	1,151	1,049	2,200	1,088	1,181	2,269
8.	Veterinary & Animal Husbandry School	17	4	21	988	415	1,403	1,366	450	1,816	1,396	446	1,842
9.	Nursing & A.N.M. & Health Visitors' School	504	22	526	21,595	434	22,029	33,465	905	34,370	13,184	370	13,554
10.	Pharmacy School	23	1	24	1,210	200	1,410	1,633	378	2,011	444	196	640
11.	Other Para-medical School	63	5	68	3,332	245	3,577	3,811	248	4,059	3,132	196	3,328
12.	School for Training in Cooperation	68	5	73	8,741	720	9,461	9,274	762	10,036	7,632	419	8,051
13.	Commercial Training School	61	2	63	11,859	170	12,029	11,793	128	11,921	4,437	107	4,544
14.	School for Village Level Officers	58	39	97	6,780	6,471	13,251	7,262	5,445	12,707	4,777	3,570	8,347
15.	Fishery School	25	26	51	1,118	959	2,077	1,729	2,571	4,300	1,286	500	1,786
16.	School for Music, Dance, Drama etc.	179	15	194	10,581	1,174	11,755	17,878	1,574	19,452	4,890	450	5,340
17.	School for Drawing & Painting	53	9	62	4,231	341	4,572	6,224	517	6,741	2,063	316	2,379
18.	Other Schools	75	7	82	4,153	296	4,449	7,239	379	7,618	4,899	130	5,029
TOTAL		3,455	770	4,225	3,64,470	46,595	4,11,065	4,48,367	56,075	5,04,442	1,72,646	24,420	1,97,066

Source : Third All India Educational Survey— IAMR Report No. 4/1975-All India.

