

**An Overview**  
**on**  
**Implementation of**  
**Vocational Education**  
**in CBSE's Schools**

*A Report*

**Conference held**  
**on**  
**February 14-15, 1995**  
**at**  
**Central Board of Secondary Education**  
**Delhi**

ORGANISED BY



**CENTRAL BOARD OF SECONDARY EDUCATION**  
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## FOREWORD

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CBSE, Delhi is a pioneer Board to start the vocational courses way back from 1977 as per the policy of Govt. of India. Since then it has been making strenuous efforts in developing various courses under different sectors and their effective implementation through the schools. No doubt the Board has done tremendous work in the area of vocational education but it is still away from the national goal enunciated in NPE 1986. Hence, there is an urgent need for self evaluation. In order to get feedback from the schools and implementing agencies and to thrash out the issues the Board organised two-day conference on vocational education on 14-15 Feb. 1995. The conference dwelt upon various aspects such as suitability of the curriculum, training facilities in the schools, qualified teachers, industry and school relationship, on-job-training, textual material and the placement of the pass outs in different vocations. I hope that recommendations made by the different groups in this report will go a long way in solving the various problems/issues related to implementation of vocational education scheme. It is further expected that this conference will set the ball of VE rolling and the institutions and implementing agencies will strive hard to achieve the targets set for diverting the population to vocational stream at the +2 stage. I appreciate the efforts made by Director (Acad) and his team for organising the conference and bringing out this report.

Dated: 9.6.95

B.P. KHANDELWAL  
Chairman,  
CBSE, Delhi

## **PREFACE**

This document titled 'An Overview on Implementation of Vocational Education in CBSE's Schools—A Report' has evolved out of joint deliberations among the senior functionaries in MHRD, Govt. of India, Experts on Vocational Education from national agencies like NCERT, eminent educationists, planners and administrators from Central Institute of Vocational Education, Bhopal, Director of Education, Delhi Administration, and the implementing agencies like KVS, JNVS. These also included senior officials from Army Education Corp. Chairpersons of Course Committees of the Board in different disciplines of Vocational Education, principals and teachers. The joint deliberations were organised by CBSE to accelerate the pace of vocationalizing education in CBSE affiliated institution and ponder over all such issues which are hampering the growth of vocational education.

In this conference a thorough probe was made in regard to the concept and objectives of vocational education at the school stage, the fears and obsessions which are stymieing the natural progression and strategies that needed to be re-oriented. The conference came out with very far reaching suggestions and recommendations. The thinking which has gone into the deliberations is briefly recorded in this report. The Board would like to give yet another serious look to the entire courses and see as to how the vocational education could be given yet another spur.

This document would also be of immense use to all other concerned agencies and teachers connected with vocational education.

The contribution of the participants in this conference is gratefully acknowledged. I sincerely acknowledge the inspiration provided by the Chairman, CBSE, Prof. B.P. Khandelwal for making this conference a great success. I place on record the sincere help extended by Sh. H.R. Gupta, Joint Secretary (A) and Sh. C.D. Sharma, Education Officer (Vocational) in planning, organising and conducting this conference and bringing out this document.

Dated: 9.6.95

H. R. SHARMA  
Director (Acad.)  
CBSE, Delhi

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## INTRODUCTION

Secondary and higher secondary education are important terminal stages in the system of general education because it is at these points that options are exercised by the youth to enter the world of employment or to go for technical training or pursue higher education. Educationists and experts have consistently recommended that education at these stages should be given a vocational bias to link it with the world of work. The Kothari Commission (1964-1966) was of the view that for a majority of occupations, university degree were not necessary and these jobs could be competently performed by trained higher secondary students. This Commission felt that it should be possible to divert at least 50% of the students completing 10 years education to the vocational stream reducing the pressure on the universities and also preparing students for gainful employment.

Vocationalisation of education in the country was started in 1976 but vocational education at the higher secondary level got the right regular in the National Education Policy 1986. CBSE had introduced vocational stream in 1987 with the aim:

1. increasing productivity
2. making education employment oriented for individuals prosperity and
3. decrease the prevailing gap between the supply and demand of skilled manpower.

At present 35 courses in the form of package are being offered by CBSE. However the achievement is not very much encouraging in terms of enrolment, quality, set goals and requirements. To achieve the said goals the present conference had been organised so that an overview on implementation of vocational education as a whole may be assessed. The objectives of the conference were:

1. To design the required curriculum and instructional material under the vocational areas in which courses are to be offered.
2. To find out implementing strategies.
3. To find the modalities of qualified faculty to carry out the teaching of vocational courses- theory and practical both.
4. To find out the scheme of evaluation.
5. To find out the need of school industry linkages.

## GLIMPSES OF THE CONFERENCE



Shri Y.N. Chaturvedi, IAS  
Addl. Secretary of Education, MHRD  
with Prof. B.P. Khandelwal, Chairman, C.B.S.E.

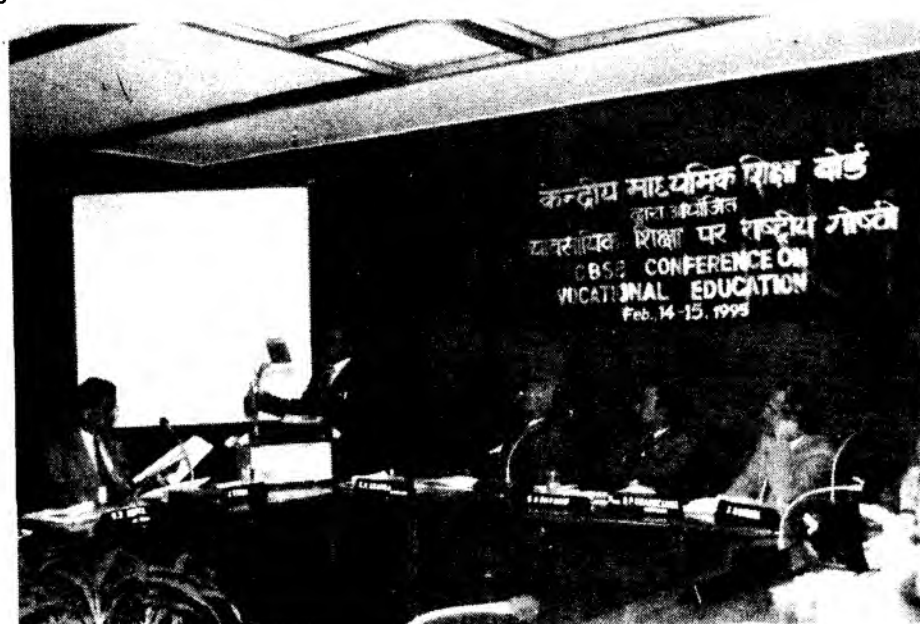


Conference in Progress

## GLIMPSES OF THE CONFERENCE



Shri G.S. Patnaik, IAS  
Director of Education, Govt. of Delhi  
Presiding at the session



Conference in action.



# 1. PROCEEDINGS

## 1.1 OPENING SESSION

At the outset, Prof. B.P. Khandelwal, Chairman, CBSE, extended a hearty welcome to all the delegates. In his opening remarks he said that there is an imperative need for preparing students for self employment and to create self confidence among them to enter into the world of work. The increasing population and unemployment has posed many challenges and it is because of mismatch between demand and supply that there is need for better utilisation of manpower and resources. The migration of population from rural to urban areas is a contributory factor for growth in slums from 2% in 1950 to 20% in 1991. In what way education should address to these dimensions is a moot question. Proper emphasis on development of skills from early childhood as enunciated in Gandhi's concept of Basic Education is the need of the day; competencies of head, heart and hand have to be harmonised. Vocational education stands for development of skilled personnel; increasing individual and national productivity and economic prosperity. Vocational education is an integral system in formal schooling in the United States of America. In Germany, there are strong linkages between industries and vocational institutions. He laid stress on effective, meaningful and purposeful vocational education in the CBSE schools. In this changing scenario CBSE has a great responsibility to shoulder. He invited all the members to come out with valuable suggestions for effective implementation of vocational education in CBSE schools and for introduction of such courses which are really need-based and provide scope for self employment.

### **Need of the Conference**

Prof. H.R. Sharma, Director (Academic) welcoming the members apprised the delegates about the need of the Conference. He informed the members that CBSE took lead in introducing vocational education way back in 1977-78 when the +2 scheme was introduced and it was one of the pioneering Boards which offered varied types of courses in different disciplines such as Commerce-based courses, Agriculture-based courses, Home Science-based courses, Health and Para Medical courses etc., keeping in view the requirements of different regions and resources available. It provided a very flexible scheme of studies providing scope for vertical mobility and self-employment. In 1989-90 efforts were also made to directly link these courses with the need of the industry. With this aim in view the public undertakings like Indian Railways, GIC of India, LIC of India were invited to identify their manpower need. The Board collaborated with these agencies in evolving courses which make students more employment-worthy. These courses have been widely acclaimed for their professional inputs. Though the Board made serious efforts in promoting vocational education, but somehow parents are not yet convinced of better future of their wards after completing the vocational courses and it is in view of this that the national

target of diversification of students to the extent of 10% by 1995 as laid down in the National Policy on Education remains yet to be achieved. The percentage of vocational stream students taking the Board's examination is around 4.54%. Last year (1993-94) the Board took up a programme for modernisation of vocational courses to make them more professional in nature. These extensive and modified courses/will come into operation from the next academic session of class XI i.e. 1995-96. In spite of the limited resources, of man and material at the disposal of the CBSE, efforts are being made to make the vocational stream popular among the CBSE affiliated schools. However unless at the national level proper industry and school linkages are built it may not be possible to achieve the targets set for diversification of population to vocational stream. He invited the delegates to give ponder over the issues and advise the Board as to how to give impetus to the implementation of vocational education in CBSE schools.

## **1.2 KEYNOTE ADDRESS BY SHRI C.K. MISRA**

Vocationalisation of education is an old and recurring policy theme globally. A careful study of the literature on vocational education gives an interesting revelation that different ideologies like pragmatism, socialism and populism attach great significance to it. John Dewey has emphasised that education which has no relevance to society is useless and hence life-oriented education is essential. Similarly the concept of poly-technical education visualised by Marx and other thinkers on socialism, lay great stress on vocational education and treat it as an integral part of education system. In developing countries populism has emphasised the need for employment oriented education. This leads to the conclusion that vocational education is important in socialistic countries as well as in countries having free economy, and also in those countries which are developing ones. Thus we find that vocationalisation of education is world wide phenomena. Now let us have a look on the situation in our own country. If we glance through the reports of various committees and commissions on education right from Wood Despatch of 1854 to the Kothari Commission of 1964-66, the Adisheshiya Report on +2 education, the Kulandswami Report (working group of vocationalisation), and also the National Policy on Education 1986 and Programme of Action, we find all have supported the idea of vocational education. We do not find a single committee or commission on education which has not supported the concept of vocationalisation of education. The reason is obvious. Our pass percentage in most of the Boards at +2 stage is around 50% to 60% generally. This means the rest of the 50% who do not pass they are not fit for education. There is another way of looking at it and that single track education provided in general stream is not fit for them. And therefore we have to think of alternative to general education system where these students can fit in. This clearly shows the justification for vocational education and also to diversify the higher secondary education. There cannot be same curriculum for two categories of clients one which would like to enter into world of work and the other going for higher education. There is another important

aspect emphasised in linking education with productivity, development and employment. This again supports the idea of vocationalisation of higher secondary education.

There are three models of imparting vocational education viz. Apprenticeship Model, Separate Institution Model and General School Model. Throughout the world these models are followed in one way or the other. We in our country have the three models. Here we are concerned with the model of having vocational education in the general school system. The national framework has visualised a collaborative model of vocational education programme unless there is complete collaboration in terms of curriculum construction, teaching, on the job training placement etc., school system alone can not deliver the goods. It has been very clearly visualised the +2 education will prepare crucial middle level of workers only. This model focuses on wage employment as well as self employment and the implementation of the scheme has to be done accordingly. There is need to understand clearly that introduction of vocational system in school is just not an addition of another academic stream. The identification of the courses has to be done on the basis of the demand of the manpower and self employment opportunities. The teaching has to be done with the help of full time as well as part time teachers. Almost 50% curriculum should consist of practical aspects of the vocational on the job training is an integral part of the course and its follow up in terms of placement is another dimension which has to be implemented carefully. When we take care of all these parameters it is only then we can be sure of making the scheme successful.

I hope this national seminar will discuss different aspects of curriculum design, Instructional materials, Teacher factor, evaluation, vertical mobility in great depth and suggest valuable recommendations to further strengthen and streamline the vocational courses run in CBSE affiliated schools.

### **1.3 SESSION-WISE REPORTING**

#### **1st Session: 14.2.95**

Two-Day conference on Vocational Education was held on 14-15 February, 1995 in the CBSE Headquarters at Preet Vihar, Delhi.

There were four sessions. Two sessions on 14.2.95 and two session on 15.2.95 were held. First session on 14.2.95 was chaired by Chairman, CBSE. In this session CBSE status paper on vocational education was presented by Sh. C.D. Sharma, EO(V). Another paper on curriculum Designing and Instructional Material was presented by Dr.P Raizada, Reader, NCERT followed by discussion.

Mr. Sharma mentioning the Indian Education Commission 1882 and other education commission's recommendations including National Education Policy 1986 and Programme of Action 1992 presented the status position of vocational Education in CBSE schools. There are

41 subjects/courses under the vocational scheme which are offered by the CBSE for its affiliated schools. The trend in the number of candidates opting vocational courses was also presented to the House. It was revealed that maximum number of the students offering vocational courses in 1994 examination of the Board pertaining to Commerce and Business group was 1538. Other courses are having less number of students. In comparison with the total registered students at the Sr.Sec. stage (Class XII) during the years 1990 to 1994 the percentage of vocational stream students was 3.85, 3.09, 4.0, 4.57, 4.64 respectively which shows only a slight increase in the number of students opting for vocational courses. Further he explained in detail the scheme of studies and about the restructuring and modernisation of vocational courses in the CBSE which will be offered to the schools from the academic session 1995-96 in class XI. GFC part I which is common to all the vocational courses has also been reviewed and updated and its weightage enhanced from 30% to 50%. This part has been made entrepreneur centred as per the guidelines of NCERT. Further single subject courses under the Commerce Business and Agriculture Group have been converted into self-contained package in tune with other packages under Health & Para Medical, Home Science based Courses etc. An elective paper which is optional titled 'Introduction to Computer Applications' has also been designed for the benefit of students under vocational stream. This paper may be offered by the schools in lieu of language II to enable the students to make use of the computer as a tool in their respective professional areas. Accordingly there would be 35 packages under different sectors.

Dr. Rao, Additional Secretary, UGC spoke on vertical mobility. He said that access to higher education should be restricted to those who are really bright. The increasing number of unemployed and unemployable graduates is causing concern. The country needs skilled manpower for industries and proper school-industry linkages will help reducing the problem of unemployment and contribute to a great extent in the national development. Short term bridge courses could also be developed in accordance with the needs of industries.

Dr. P. Raizada presented his paper on 'Curriculum Designing and Instructional Material.' In his paper he narrated the principles of curriculum designing under the caption how, why when, who, where and what. He spoke about concept of Vocational Education, National Pattern of Curriculum, and constraints in designing Curricula. He then highlighted on students and teachers need, modular approach, on-the-job training etc.

### **A (Transparency) No.1**

Under development of instructional material for vocational courses he highlighted its need, present position, definition etc. about instructional material. Also he gave some guidelines, and qualities of the vocational textbooks, a format for designing the workbook and proforma for identification of the instructional material, qualities of a Good Vocational Text-book, criterion for selection of courses and plan of action at the state level etc.

## 2nd Session 14.2.95

2nd session was chaired by Dr. JN Sharma. Dr. M Sengupta, Reader, NCERT presented his paper on 'Selection of Courses' and Availability of Teachers'. Dr. Sengupta informed the house in a very effective manner that rigorous implementation of vocational courses is possible if right decisions are taken on selection of courses on rational basis i.e. identification of needs, location of courses, selection of students. The decisions should be based on research, present, realities future needs and possibilities of collaboration. CBSE has introduced some innovations by taking several steps to make the programme viable, acceptable and forward looking, for example, various courses have been offered, curriculum renewed and revised. There is need at this crucial juncture to take stock of the situation for (a) consolidating the gains (b) making the process of Introduction more systematic and well planned (c) making the scheme more useful and attractive to specific clientele of CBSE Schools.

Further he stressed that much success of vocational courses depend on right choice of vocational courses. At the micro level it is necessary to make reasonable accurate system of available occupations, employment potential, emerging occupations, training needs and facilities. In selection of courses industry and service sectors should be associated. He gave some issues for discussion such as type of courses, role of principals in selection of courses, possibility of more sponsored courses etc. c (1-4)

Dr. M Sengupta also presented a paper on 'Availability of Teachers' for vocational education. He narrated that the role and function of vocational teachers have undergone transformation due to :

- 1) Compulsion of advance technology
- 2) Changes in pattern and competencies of work force.
- 3) Emphasis on self employment.

And therefore vocational teacher is visualised as a

Subject specialist - Counsellor  
Experienced practitioner- Evaluator  
Efficient communicator - Motivator for entrepreneurship  
Manager - Coordinator  
Curriculum & Instruction Material developer - Educator.

The competency profile of a teacher may be seen in two ways:

- 1) General/Occupational neutral
- 2) Occupation specific

He also elaborated some more qualities of a teacher under the national recommendations. At the end of his presentation he raised some issues related to vocational teaching i.e.

- 1) Vocational teacher and his status
- 2) Vocational teachers competencies
- 3) Concept of full time and part time teachers
- 4) Full time teachers and his qualifications
- 5) Part time teachers and his qualifications
- 6) Prescribing qualifications in respect of different vocational areas
- 7) Relaxation of qualification in special cases

He had emphasised also on In-service Training of teachers.

Mr. Kamal Taori from Khadi and Village Industries commission highlighted the need of cluster approach and invited CBSE and KVIC to come together and work out collaboration programmes in certain areas such as Bee-Keeping, Handmade paper, Dairying and Dairy products, Pottery etc.

### **3rd Session 15.2.95**

The 3rd session on 15.2.95 was chaired by Sh. G.S. Patnaik, Director of Education, Govt. of NCT Delhi. Two papers were presented in this session first paper on 'Vertical Mobility' was presented by Sh. R.N. Sharma, Dy. Director (Vocational Education) and 2nd paper was presented on 'School Industry Relations' by Ms. Preetpal Kaur, coordinator, Vocational Education, Chandigarh Admn. Chandigarh.

Mr. R.N.Sharma in his paper narrated that Vertical Mobility is available for technical courses in 1st year/2nd year of diploma courses in Polytechnics. The passouts of technical courses are also eligible for 1st year Engineering Degree Courses if pre-requisite conditions are fulfilled for the said course. Further he narrated the same type of vertical linkages available under Commerce, Home science, Health and Para Medical Courses etc. Elaborating the need for vertical mobility he emphasised that in respect of majority of the courses, facilities for mobility are yet to be created and it is very necessary that Universities and Board of Technical Education and other institutions should be involved in these exercise and statutory provision made in the admission criteria for providing lateral entry into diploma/degree/professional courses.

Ms. Preetpal Kaur narrated the experience of Chandigarh Admn. in regard to implementation of vocational education and success rate is 95% and above. Her experience of implementation of Vocational Education in the Chandigarh Administration was very positive.

Dr. Sundrayal laid emphasis on entrepreneurial skills and stressed on training programmes for teachers in this area. The delegates from Railways, Mr. Balasubramanian presented an overview of implementation of job-linked vocational course in Railway Commercial Working. He explained the efforts made by Ministry of Railways (Railway Board) in production of quality textual material, providing teaching faculty and other facilities in successful implementation of the project. Views were also presented on behalf of LIC/GIC.

#### **1.4 CLOSING SESSION**

Prof. B.P. Khandelwal, welcoming the Chief Guest, Shri Y.N. Chaturvedi, Additional Secretary, MHRD, Govt. of India, said that the Board is fortunate to have him on this occasion as he initiated the programme of vocational education for more than a decade and constantly guiding us in school education. His words of advice will be very valuable in giving direction to the VE in CBSE schools. Shri H.R. Sharma, Director (A) said that his presence is an honour to CBSE and Vocational Education. He has been a source of strength to CBSE for a very long time. He assured the Chief Guest that the Board will continue to play a significant role in promoting VE under his guidance. He emphasised the need for financial assistance in a big way from MHRD for development of Curricula, instructional material, to mass/teacher orientation and equipping the Schools with appropriate equipment, for effective propagation and implementation of the national policy with respect to vocational Education.

At the end, Shri Y.N. Chaturvedi, additional Secretary Ministry of Human Resource Development, Government of India gave a valedictory address and enlightened the participants with his valuable insight and rich experience in the field. He emphasised the need for starting life enrichment and income potential courses suiting to the needs of CBSE schools such as glazed pottery, ornamental plants, artistic tapestry, carpet weaving etc. He said that only such courses should be offered which are acceptable to the society and have scope for career growth. Shri H.R. Gupta extended a vote of thanks to the Chief Guests, Sister Agencies, Resource persons, participants and others for their cooperation on important issues and contribution towards making the vocational education more meaningful.

## 2. RECOMMENDATIONS

### 2.1 Recommendation of Group A

#### Curriculum and Instructional Material

- 1) Vocational Areas in which courses are to be offered must be identified after proper survey and should reflect the demands of the society both for wage employment as well as self employment.
- 2) The course structure should be such that would help in developing suitable competencies for wage and self employment including abilities for continuing education. Having this in view it is recommended that 70% of total instructional time may be given for vocational subjects and rest 30% for other subjects.
- 3) It may not be desirable to lay down rigid ratio between theory and practical for all types of vocational courses since the ratio to knowledge and skill will vary from course to course. However as far as possible practical should be given a minimum weightage of 50% of time for each vocational course. The course outline should be well designed giving greater detail along with weightage required for developing specific competencies amongst the students.
- 4) Development of curriculum should not be entirely left to academicians. Professionals from the industry who are competent and conversant with the area should invariably be involved in addition to educationists, practising teachers and curriculum experts.
- 5) It would be better if curriculum is designed on the basis of job analysis for all the three domains namely cognitive, Affective and Psychomotor. This will clearly give an idea about the depth and scope of the course and appropriate weightage may be attached to each aspect of the curriculum.
- 6) On the job training should be an integral part for all vocational courses and student must prepare a report depending on the training programme in the industry.
- 7) The curriculum should also indicate the infrastructure needed in terms of space, equipment, appliances tools, materials, labs, books etc.
- 8) List of collaborating institutions should also be provided.
- 9) Scheme of studies and scheme of evaluation/examination may be given class-wise.
- 10) The curriculum should be prepared in package form for each vocational areas.

#### Instructional Material

- 1) Instructional material such as textbooks, workbooks, question banks, reference books, teachers guide, sample question papers etc. must be developed on priority basis as these



are new areas of learning. Instructional materials are not readily **available hence** a list of reference books should also be prepared and given in advance.

- 2) Instructional material is an urgent need which should be provided in the beginning of the academic session.

## **MEMBERS**

1. Shri R N Saxena, Consultant
2. Dr. P Raizada, Reader, NCERT
3. Shri TK Balasubramanian, Consultant, Railway Board
4. Shri Virender Singh, Principal
5. Shri SM Bhatnagar, Education Officer, KVS
6. Dr. R K Goel, PGT
7. Shri C D Sharma, Education Officer, CBSE

### **2.2 Recommendation of Group B**

1. Each State should constitute a Standing Committee of professionals with representatives from teachers and CBSE to help, advice and guide the schools in proper implementation of vocational scheme. This Committee may have subcommittees to advice it on each vocational area.
2. CBSE in collaboration with NCERT/SCERT should evolve and conduct regular and systematic orientation programmes for vocational teachers for enhancing their competencies in pedagogy skills and also in their respective content areas.
3. Courses identified at present are highly urban biased. There is need to identify rural based vocations as well as for meeting the needs of the rural population.
4. UGC and CBSE should work in close collaboration while planning +3 vocational courses. This will help avoid duplications. As a matter of fact Universities should take over where the CBSE leaves.

UGC should also recommend all the Universities to provide suitable vertical mobility to vocational passouts.

The group feels that while framing the syllabus by UGC school sector should also be represented in the Curriculum Committees.

5. Each school should have provision for vocational guidance, counselling and placement services for vocational students.
6. The courses to be selected should be :
  1. Need based and local specific
  2. It should also be ensured that collaborative institutions are readily available nearby.

In selecting courses the principal should take into account the views of parents, Teachers and students about the need employment potential of the vocations and also consider the findings of the distinct vocational surveys conducted by the State.

7. Every School should be provided with publicity folders which shared, include among other things employment agencies in each vocation to be displayed at the time of admission for the benefit of parents and students.

A directory of CBSE, Vocational Courses along with or institutions etc. should also be developed and displayed by each school.

8. One school each should be well equipped with all infrastructural facilities to work as a guiding and training centre for teachers in each major vocational area per State.
9. Full-time teacher should be recruited/taken on deputation along with Part-time teachers. Laboratory Assistants should also be provided in courses where they are needed.
10. While doing OJT a vocational teacher should be deputed to stay with the students. This is particularly necessary in case of girls. However, the teacher should be treated on a duty during this period. Final certificate to be issued by the CBSE should also mention the competencies achieved and the name of the organization where OJT has been undertaken by the student.

#### **MEMBERS:**

1. Dr. J N Sharma, Consultant
2. Dr. M Sengupta, Reader, NCERT
3. Shri A Palanivel, Reader
4. Shri R P Tewari, Teacher Incharge, Vocational
5. Mrs. Shubra Gupta, PGT
6. Mrs. J Shanta, Principal
7. Mrs. Jitendra Sobti, Principal
8. Dr. SK Sundriyal, Sr. Faculty Member, EDP
9. Shri R K Verma, Teacher Incharge, Vocational
10. Mrs. Sugandh Sharma, Education Officer, CBSE

#### **2.3 Recommendation of Group C**

- 1) The vocational courses consist of three domains namely cognitive, effective and psychomotive. It is, therefore necessary to have a system of evaluation which can test knowledge and understanding, skills and personality trades of the children. A suitable evaluation scheme has to be developed for vocational courses. Knowledge and understanding may be tested through written test where skill and

personality trades, performance observations and other techniques may be utilised. However the evaluation of vocational courses should be continuous and comprehensive.

- 2) On-the-job-training should be evaluated jointly by the supervisor at the work place and the subject teacher.
- 3) The certificate issued by the Board should indicate the competency attached and the collaborative institutions where the on-the-job training/practical training was undergone.
- 4) Where school based practical is not possible, assessment of the practical skill should be done by an institution which is other than the one offering practical training.
- 5) Scheme of evaluation should take into account the competencies based instructional objectives. Clean guidelines regarding the conduct of practical examination should be formulated for each course. Here no guidelines made by NCERT, Health Sector and Technical Reports can be made use of.
- 6) Orientation course should be arranged in evaluation techniques for paper setters, vocational teacher and examiners.
- 7) Programme/performance record of each student should be maintained by the school on a regular continuous basis.
- 8) To enhance the credibility of the vocational passouts the question of certifying the equivalence in terms of other Courses/Diplomas offered by recognised institution and set by performing bodies may be examined by the state authorities concerned and Department of personnel.

### **School-industry Linkages**

- 1) Identification of collaborative institution should be very discrete.
- 2) The collaborative agency should preferably be selected in consultation with state authorities/Directorates of Health and Industries.
- 3) To attract candidates for vocational courses and the employers suitable modes of publicity through press, audio and video media should be made use of (Chandigarh model)
- 4) Survey of demand for employment should be undertaken as a pre-condition for introducing any vocational programme.

### **III Vertical mobility**

- 1) The main focus of vocational courses namely
  - (a) prepare the students for job and
  - (b) prepare for self employment should not be lost sight of. However opportunity should be given for career improvement and if need be bridge courses should be organised

for smooth transaction for 10+2 vocational courses to a higher professional course and the responsibility of holding courses should be taken by the institution offering higher courses.

- 2) +2 level of vocational qualification from CBSE/State Boards should be included as one of the eligibility criteria for admission into Higher Education/Professional courses in the same area.

**MEMBERS:**

1. Prof. P K Ghosh
2. Shri Suraj Prakash, Principal
3. Ms. Preetpal Kaur, Coordinator
4. Dr. J D Johnson, Principal
5. Shri J S Manjul, Consultant
6. Dr. S S Gauri, NVS
7. Mrs. Mehta, PGT
8. Shri H R Gupta, Jt. Secretary, CBSE

### 3. Status Papers & Reports

- CBSE
- Chandigarh Administration
- Navodaya Vidyalaya
- Railways
- PSSCIVE Bhopal
- KVIC

## 3.1 Status Report on Vocational Education in CBSE

*C.D. Sharma, Education Officer (Vocational) CBSE*

### **Introduction**

The Indian Education Commission (1882), the Review Committee (1929) and the Secondary Education Commission (1952) recommended diversification of the courses in the school system. The Education Commission (1964-66) noted the uncontrolled meaningless rush to universities, especially after independence, and the drafting of university students for a variety of occupations which do not require university education. The Commission suggested restructuring of education and recommended distinct streams of general and vocational education at the higher secondary stage to intercept the goal-less ascent of the youth and the educational ladder and divert them to a productive path. The National Policy of Education (1968) accepted the recommendations of the Education Commission. The Central Advisory Board of Education (CABE) at its 38th meeting held in November 1975 endorsed the Policy Resolution and resolved to adopt the 10+2+3 pattern of education and reiterated that 10+2 stage of education should be regarded not merely as college preparatory, but a period for preparing an increasingly large number of school leavers for different vocations in life. The vocational education programme at the higher secondary stage was initiated in 1976.

The National Policy of Education 1986 has stated that the introduction of systematic, well planned and rigorously implemented programmes of vocational education is crucial in the proposed educational reorganisation. These elements are meant to enhance individual employability, to reduce the mis-match between the demand and supply of skilled manpower and to provide an alternative for those pursuing higher education without particular interest or purpose.

The Programme of Action (Annexure 'C') document and the National Policy of Education 1986 has underlined the factors responsible for the slow progress of the programme and has recommended taking urgent steps to strengthen the vocational education system.

In conformity with the recommendations of CABE, the CBSE was one of the first School Education Board to start the 10+2 pattern in the country. It took a pioneering step in having a comprehensive look at the entire gamut of school education and designed curricula which were forward looking and revolutionizing in character.

The Board has been making constant efforts for the promotion of Vocational Education in its schools with a view to ensure adequate diversification at the +2 stage. It is expected that after successfully completing +2 stage vocational course, the student would have acquired relevant, appropriate and adequate technical knowledge with professional skill and competence in the relevant field of vocational education so that he is properly equipped to take up gainful employment in the concerned vocation and to allow vertical mobility. With this aim in

view special stress is being laid on Vocational Education at the +2 stage and Work Experience at the sec. stage.

2. **Work experience** : Work experience has been given a special position at the secondary stage. This is a compulsory area of study and three periods per week have been set apart for it. This is an area of internal assessment. As many as 29 different types of activities relating to various disciplines and field of work have been introduced which can be offered by the schools according to their regional requirements and resources. The CBSE was one of the first Boards to introduce the concept of Work Experience and Socially Useful Productive Work in its curriculum way back in 1974-75.

3. **Vocational courses at the +2 stage** : Keeping in view the requirements of different regions and resources available, the Board has provided more than 41 different types of Vocational Courses at the +2 stage belonging to the disciplines of Engineering, Agriculture, Commerce & Trade, Home Science, Para-Medical Courses, Insurance, Tourism industry and those belonging to the small and cottage industry sector. A list of these courses and the number of students who took the Board's exam in each of the subjects during the last five years is appended at Annexures 'A' and 'B' respectively.

4. **Trend in the number of candidates opting vocational courses** : The number of candidates appeared at the Board's examination during the last five years in each subject of vocational stream is given at Appendix 'B'. The figures indicate that the most popular courses under the Commerce and Business Group are Office Management and Secretarial Practice, Typewriting and Stenography. Similarly under Home Science Group 'Dress Designing and Making' is becoming more popular. There is an increase of 40% of students opting this course in 1994 examination. Under Health and Para Medical Group, 'Health Care & Beauty Culture' is opted by majority of the candidates. Hotel Management and Catering is another area in which the number of students is increasing. On the basis of the number of the students registered in the 1994 examination, the vocational courses may be categorised as follows :—

**I. Courses registered with 1000 and above students**

Office Management & Secretarial Practice	1538
Typewriting (English)	1466

**II. Courses registered with 500 and above students**

Stenography (English)	911
Life Insurance	583
General Insurance	553
Dress Designing & Making	502

**III. Courses registered with 300 and above students**

Healthcare and Beauty Culture	387
Railway Commercial Working	336

**V. Courses registered with 200 and above students**

Typewriting (Hindi)	288
Stenography (Hindi)	260
Accountancy and Auditing	248
Textile Designing (Print)	244

**V. Courses registered with 100 and above students**

Computer Studies	164
Banking	143
Marketing & Salesmanship	118
Hotel Management & Catering	114

**VI. Courses registered with 50 and above students**

Electronics	84
Horticulture	73
Auxiliary Nursing & Midwifery	61
Electrical Technology	53
Food Preparation & Nutrition	49

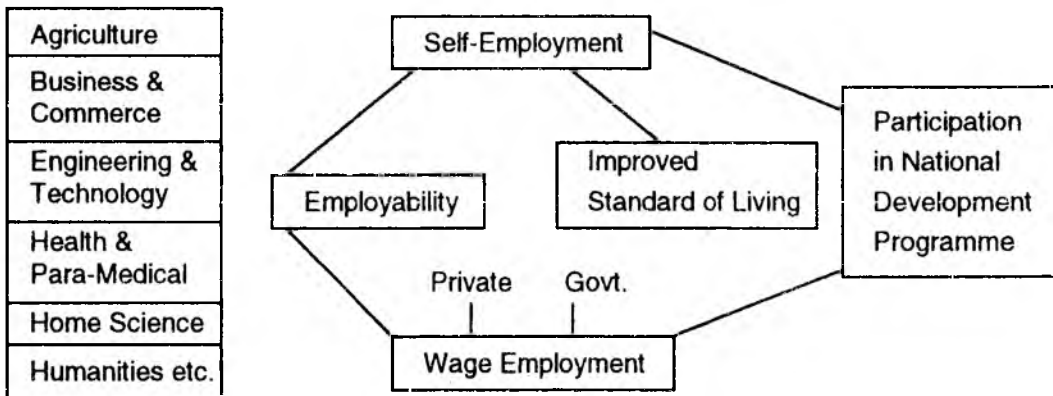
**VII. Courses registered with less than 50 students**

Medical Laboratory Technology	47
Structure and Fabrication Technology	43
Air Conditioning & Refrigeration Technology	38
Library Sciences	31
Textile (Weaving)	26
Automobiles	25
X-Ray Technician	24
Travel & Tourism	19
Purchasing and Store keeping	18
Marine Fishery	16
Ophthalmic Technology	11
Dairying	08
Bakery & Confectionery	02

In comparison with the total registered students for 1994 examination the percentage of vocational stream students is 4.64 which is higher than the previous years. If parents and students are assured of better future after completing the vocational courses the number of students in the vocational stream will automatically increase. It is a million dollar question as to how the vocational courses should be made popular so that students are attracted towards these courses. The need of the day is that there should be proper linkages of these courses with the industries and the courses should be structured in such a way that the students are either directly absorbed in the industry or they are able to set up their small establishment.



The philosophy of Vocational Education is illustrated by the following diagram :



5. **Scheme of Studies :** The learning areas under the Vocational stream include:

- I & II. Two Languages      Either at Core or Elective level as in case of the Academic Stream. However, a candidate of the vocational stream may replace one of the languages by an Elective from the Academic stream or by a subject as is given in the syllabus of the vocational course concerned.
- III.      General Foundation Course (GFC)      As given in the syllabus of the Vocational Course concerned.
- IV.      Physical and Health Education      As per the Academic stream.

**B. Elective Group**

- V-VII      Vocational Group (Equivalent to THREE Electives) as given in the Course structure.
- VIII.      Additional subject, opted, if any.

6. **Job Linked Vocational Courses :** In 1989-90 efforts were also made to directly link these courses with the needs of the industry. With this aim in view the public undertakings like Indian Railways, GIC of India, LIC of India were invited to identify their manpower needs, the Board collaborated with these agencies in evolving courses which make students more employment worthy. These courses have been widely acclaimed for their professional inputs.

In 1991-92 the CBSE in collaboration with the Ministry of Railways launched a job linked course in Railway Commercial in a few selected schools. Students who pass this course by securing at least 55% marks (45% in case of SCs/STs) in Railway Commercial as well as in aggregate of all the subjects of external examination are offered appointment as Commercial

Clerks, or Ticket Collectors in the railways, subject to medical examination as per the prescribed standards and other formalities which are required to be cleared before entry into Govt. service. Apart from bright promotion prospects in their respective categories the candidates appointed also have further avenues of advancement to higher grade posts.

Life Insurance and General Insurance Courses at the +2 stage were also linked with job opportunities and students after doing these courses were directly absorbed as Apprentices initially for one year after which they were taken as Probationary Assistants. Since these industries have reached the saturation point, the facility of job guarantee is not being extended to the pass-outs. However, for CBSE +2 passed candidates qualifying with the Life Insurance and General Insurance Vocational Subjects, the stipulation of minimum marks in the aggregating at the +21 exams would be waived. All candidates who have passed the XII standard examination of the Life Insurance/General Insurance Course would be eligible to appear for the recruitment test irrespective of the marks obtained. The students after doing these courses may also have other avenues of employment in these industries.

### **Schools offering Railway Commercial Working Vocational Course**

- |   |   |
|---|---|
| 1. K.M.S. Dr. Shirodkar High School<br>Junior College, Parel, Bombay-12.                | 6. Indian Educational Society's<br>English Medium School, Dadar,<br>Bombay-14.                    |
| 2. Hindi High School<br>Moira Street, Calcutta-17.                                      | 7. Bholananda National Vidyalaya,<br>56, Barrack Road Barrackpore,<br>24 Parganas,<br>West Bengal |
| 3. Govt. Co-educational Model School<br>Behind I.P. College, Ring Road<br>Delhi-110 054 | 8. Railway Junior College, Lallaguda<br>Secunderabad-500 017                                      |
| 4. N.E. Railway Senior Secondary School<br>Gorakhpur-273 012                            | 9. Faculty High School<br>North Guwahati,<br>Guwahati-780 031                                     |
| 5. SBOA School and Junior College<br>Anna Nagar Western Extension<br>Madras-600 101     |   |

### **Schools offering Life Insurance Vocational Course**

#### **BOMBAY (Maharashtra)**

- |  |  |
|--|--|
| 1. Jawahar Navodaya Vidyalaya<br>Amravati                  | 4. Seth DGT High School and<br>Jr. College of Commerce and Science<br>(Gokhale Education Society)<br>V.P. Road, Girgaum, Bombay-4. |
| 2. MES Boys School and Jr. College,<br>Sadashiv Peth, Pune |  |
| 3. Dhyanaonhdhana School, Thane                            |  |

CALCUTTA (West Bengal)

5. Kendriya Vidyalaya  
Salt Lake, Calcutta

DELHI (U.T.)

6. Govt. Co. Edn. Composite  
Model Sr. Secondary School  
Shankaracharya Marg  
Behind I.P. College, New Delhi
7. Govt. Composite Model  
Sr. Secondary School  
Paschim Vihar, New Delhi
8. Govt. Co. Edu. Sr. Sec. School  
Sector 12, R.K. Puram,  
New Delhi

HYDERABAD (Andhra Pradesh)

9. Kendriya Vidyalaya  
Picket, Hyderabad

MADRAS (Tamil Nadu)

10. Smt. Ramkuwar Devi Fomra,  
Vivekanand Vidyalaya & Jr. College  
Kumaram, Kundram, Chormepet  
Madras-600 006

CHANDIGARH

11. Govt. Girls Sr. Sec. School  
Sector 18 C, Chandigarh
12. Govt. of Model Sr. Sec. School  
Sector 35 D, Chandigarh

**Schools offering General Insurance Vocational Course**

MADRAS

1. P.S. Senior Sec. School  
15, Alarmel Mangapuram,  
Mylapore, Madras-600 004
2. Padma Seshadri Bala Bhawan  
Sr. Secondary School  
7, Lake First Main Road,  
Madras-600 035
3. Vijayants Sr. Secondary School  
H.V.F. Estate, Avadi, Madras-600 054

CHANDIGARH

1. Govt. Girls Sr. Secondary School  
Sector-18C, Chandigarh
2. Govt. Model Sr. Sec. School  
Sector 35D, Chandigarh

DELHI

1. Govt. Boys Sr. Secondary School  
Gulabi Bagh, Delhi
2. Govt. Girls Sr. Sc. School No. 2,  
Kidwai nagar, New Delhi - 23
3. Govt. Girls Sr. Sec. School No.1,  
B-Block, Janakpuri,  
New Delhi-110 058
4. Govt. Boys Sr. Sec. School  
Chander Nagar, Delhi
5. Govt. of Boys Sr. Sec. School,  
Qutub Road, Delhi

## BOMBAY

1. Indian Education Society  
Hindu Colony, Dedar,  
Bombay - 400 014
2. Sheth D.G.T. High School  
Jr. College of Commerce and Science  
V.P. Road, Girgaum, Bombay - 400 004

7. **Modernisation of Vocational Courses** : Since the last year i.e. 1993-94 the Board took up a programme for modernisation of Vocational courses which has already been implemented. These extensive and rationalized courses will come into operation from the next academic session of class XI i.e. 1995-96. The major change that have been made in the scheme are as follows:—

- (i) All the single paper courses under Commerce and Business Group and Agriculture Group have been converted into self contained packages consisting of three elective papers to make them practical oriented and to enhance employability of the pass outs.
- (ii) General Foundation Course is restructured and made entrepreneurship concerned. It consists of two parts. Part I carries 50 marks and is based on entrepreneurship, environmental education and rural development. This part is common to all the vocational packages. Part II which also carries 50 marks is specific and directly related to the vocation concerned.
- (iii) Total 8 weeks compulsory on-the-job-training has been incorporated in the scheme of studies. The suggested time is summer vacation after class XI, autumn break and winter break in class XII or as per the convenience of the collaborating agency.
- (iv) An elective paper on introduction to Computer Application has been provided to be offered in lieu of language II to enable the students to use computer as a tool in their respective area of vocation concerned.
- (v) All the elective papers under the vocational group are practical oriented. Accordingly the courses to be made effective from 1995-96 are as follows :

### A. **Job linked vocational courses**

Railway Commercial Working

### B. **Job oriented vocational courses**

#### I. Commerce based courses

1. Office Secretaryship
2. Stenography (English & Hindi)
3. Accounting & Auditing
4. Marketing & Salesmanship
5. Purchasing and Storekeeping
6. Banking

- II. Engineering based courses
  - 1. Electrical Technology
  - 2. Automobile Technology
  - 3. Structure & Fabrication Technology
  - 4. Air Conditioning & Refrigeration Technology
  - 5. Electronic Technology
  
- III. Agriculture based courses
  - 1. Dairying
  - 2. Horticulture
  - 3. Farm Machinery and Equipment
  - 4. Inland Fisheries and Agriculture
  - 5. Marine Fisheries, Brackish Water Aquaculture and Technology.
  
- IV. Health and Para Medical courses
  - 1. Health Care and Beauty Culture
  - 2. Ophthalmic Techniques
  - 3. Medical Laboratory Technology (MLT)
  - 4. Auxiliary Nursing and Midwifery (ANM)
  - 5. X-ray Technician
  - 6. Dental Mechanic
  - 7. Bio-Medical Technician
  
- V. Home Science based courses
  - 1. Food Service and Management
  - 2. Preservation of Fruits and Vegetables
  - 3. Institutional House keeping
  - 4. Fashion Design and Clothing construction
  - 5. Textile Design — Dyeing and Printing
  - 6. Textile Design — Weaving
  
- VI. Hotel and Tourism based courses
  - 1. Hotel Management & Catering Technology
  - 2. Tourism and Travel
  - 3. Bakery and Confectionery
  
- VII. Other Courses :
  - 1. Computer Applications
  - 2. Library and Information Science
  - 3. Life Insurance
  - 4. General Insurance

Annexure 'A'

## Existing Courses

The Board offers a number of Vocational Courses at the Senior School Stage. List of such Vocational Courses is given below :

**I. Commerce and Business Group**

1. Office Management and Secretarial Practice
2. Accountancy and Auditing
3. Typewriting (English)
4. Typewriting (Hindi)
5. Stenography (English)
6. Stenography (Hindi)
7. Marketing and Salesmanship
8. Purchasing and Store Keeping
9. Banking

**II. Engineering and Technology Group**

10. Electrical Technology
11. Electronic Technology
12. Automobile Technology
13. Structure and Fabrication Technology
14. Air Conditioning and Refrigeration Technology

**III. Agriculture Group**

15. Horticulture
16. Marine Fisheries
17. Dairying
18. Fisheries Science & Technology
19. Inland Fisheries
20. Farm Machinery and Equipment
21. Basic Programme in Fruits and Vegetables
22. Rural Development

**IV. Health and Para Medical Group**

23. Health Care and Beauty Culture
24. Ophthalmic Technology
25. Medical Laboratory Technology (MLT)

26. Auxilliary Nursing and Midwifery (ANM)
27. X-Ray Technician
28. Dental Mechanics
29. Bio-Medical Technician

**V. Home Science Group**

30. Nutrition and Food Preparation
31. Textiles and Designs - (Printing Group)
32. Textiles and Designs - (Weaving Group)
33. Dress Designing and Making

**VI. Hotel and Tourism Group**

34. Hotel Management and Catering Technology
35. Tourism and Travel
36. Bakery and Confectionery

**VII. Other Courses**

37. Computer Studies (Technology/Techniques)
38. Library Science
39. Railway Commercial Working
40. Life Insurance .
41. General Insurance

Annexure 'B'

**No. of Students Appeared in  
Vocational Subjects Year wise from 1990**

Name of the Subject Single Paper/Package	No. of Students				
	1990	1991	1992	1993	1994
<b>A. Commerce and Business Group</b>					
1. Office Mgmt. & Secretarial Prac.	968	901	1139	1333	1538
2. Typewriting (English)	1086	927	1009	1248	1466
3. Stenography (English)	606	490	618	753	911
4. Typewriting (Hindi)	169	123	191	200	288
5. Stenography (Hindi)	170	96	179	180	260
6. Accountancy and Auditing	296	171	154	314	248
7. Banking	85	88	94	121	143
8. Marketing & Salesmanship	64	63	104	66	118
9. Purchasing and Store keeping	—	20	15	15	18
<b>B. Engineering and Technology Group</b>					
1. Electronics	136	123	90	86	84
2. Electrical Technology	69	75	36	50	53
3. Strucutre and Fabrication Technology	5	39	20	16	43
4. Air Conditioning & Ref. Technology	32	33	43	29	38
5. Automobiles	19	18	32	27	25
<b>C. Home Science Group</b>					
1. Dress Design & Making	305	378	394	341	502
2. Textile Des. (Print)	125	199	174	224	244
3. Food Preparation & Nutrition	103	78	74	73	49
4. Textile (Weaving)	28	23	24	44	26
<b>D. Agriculture Group</b>					
1. Horticulture	82	80	109	98	73
2. Marine Fishery	—	—	—	19	16
3. Dairying	—	—	—	—	8
4. Fisheries Science & Technology	—	—	—	31	—



**E. Health & Para Medical Group**

1. Healthcare and Beauty Culture	246	285	288	296	387
2. Auxiliary Nursing & Midwifery (ANM)	—	—	17	42	61
3. Medical Laboratory Technology (MLT)	—	32	30	44	47
4. X-Ray Technician	—	—	—	22	24
5. Ophthalmic Technology	9	16	12	25	11

**F. Hotel Management & Catering Group**

1. Hotel Mgt. & Catering	—	24	34	58	114
2. Travel & Tourism	22	23	25	20	19
3. Bakery & Confectionery	—	—	—	11	2

**G. Other Courses**

1. Life Insurance	—	367	575	613	583
2. General Insurance	410	488	610	580	553
3. Railway Commercial Working	—	—	—	178	336
4. Computer Studies	111	145	96	208	164
5. Library Sciences	96	76	6	49	31

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Total	5242	5581	6212	7414	8475
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Total No. of Students registered	136066	136489	153492	162019	182332
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% of Vocational Students	3.85	3.9	4.0	4.57	4.64
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## 3.2 Present Status of Vocationalisation of Sec. Education in Chandigarh, 1994-95

Ms Preetpal Kaur, Coordinator, Vocational education

Chandigarh Administration introduced the scheme of Vocational Education in the year 1987-88.

### Vocational Courses Introduced Year Wise

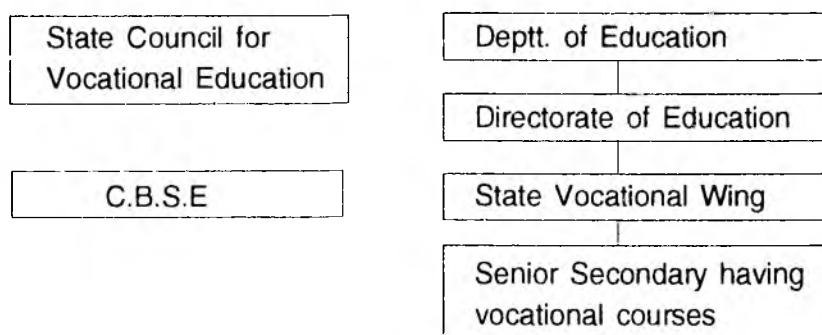
Academic Year	No. of courses introduced	Name of the vocational courses
1987-88	5	<ol style="list-style-type: none"> <li>1. Accountancy Auditing (S)</li> <li>2. English Stenography &amp; Secretarial Practice</li> <li>3. Basic Electronic Technology</li> <li>4. Dress Designing &amp; Making (in 2 urban schools)</li> <li>5. Nutrition &amp; Food Preparation</li> </ol>
1988-89	1	<ol style="list-style-type: none"> <li>1. General Insurance Course</li> </ol>
1989-90	10	<ol style="list-style-type: none"> <li>1. Life Insurance Course</li> <li>2. Medical Lab. Technology</li> <li>3. Ophthalmic Techniques</li> <li>4. Computer Science Technology</li> <li>5. Basic Electrical Technology</li> <li>6. Automobile Technology</li> <li>7. Refrigeration &amp; Air-conditioning</li> <li>8. Structure and Fab. Technology</li> <li>9. Dress Designing &amp; Making (in 2 rural schools)</li> <li>10. Textile Designing (Printing)</li> </ol>
1990-91	1	<ol style="list-style-type: none"> <li>1. Hotel Management &amp; Catering</li> </ol>
1991-92	6	<ol style="list-style-type: none"> <li>1. Banking</li> <li>2. X-Ray Technology</li> <li>3. Auxiliary Nurse Midwifery</li> <li>4. Hindi Stenography</li> <li>5. Health Care and Beauty Culture</li> <li>6. Bakery &amp; Confectionery</li> </ol>

1992-93	4		Health & Paramedical courses were to be introduced during these years. But the CBSE did not approve the proposal of introduction of following new courses:
1993-94			
1995-96			
		1.	MPHW/Physiotherapy
		2.	Physiotherapy
		3.	Bio-medical Technology
		4.	Dental Techniques
1994-95	2	1.	Dress Designing & Making
		2.	Textile Designing & Printing

At present there are 20 vocational courses in 12 different Govt. Sr. Sec. Schools. No. of students seeking admission to vocational courses is constantly increasing. Girls had been outnumbering boys in every course but every year the gap is shrinking and at present an equal number of boys and girls are undergoing training in these courses.

#### Management Structure:

Chandigarh is a single district Union Territory, therefore, all the three levels as suggested by Ministry of Human Resource Development have been compressed into one. The entire set up for providing academic as well as administrative support is as under:-



#### School Level

1. Vice Principals
2. Full-time lecturers
3. Part-time teachers
4. Workshop Attendants
5. Clerks

Each vocational section has two full-time teachers and two part-time teachers. Full-time teachers possess the qualifications laid for them on the basis of the guidelines received from

CBSE, NCERT and our neighbouring states. Qualified part-time teachers are taken either from the retired professionals/reowned workers/entrepreneurs or from the collaborating institutions. For job-oriented courses like GIC and LIC the faculty used to be provided by the respective organisation but w.e.f. 1992 the faculty has been withdrawn and we are finding great difficulty in finding appropriate teachers particularly for general insurance course.

### **Equipment**

For developing basic labs in schools necessary equipment has been supplied within the amount sanctioned under Centrally Sponsored Scheme by making allocation of funds as per the requirement of the course. For courses in which collaboration for practical training has been established the expenditure on equipment has been reduced to minimum and money thus saved has been utilised where heavy equipment had to be provided.

### **Curriculum**

The Schools are affiliated to Central Board of Secondary Education, Delhi, therefore, syllabi prepared by CBSE are adopted. However syllabi for 3 courses were locally designed under the guidance of Central Board of Secondary Education. Syllabi of courses which were scheduled to be introduced during 1992-93 and 1993-94 and 1994-95 are yet to be received from CBSE. Since these courses are usually short-lived, therefore any delay in their introduction is a setback to the programme. Different models of collaboration have been adopted for transacting this curriculum.

### **Development of Learning Materials**

Instructional material for six vocational courses has been locally developed and for 3 courses textual material developed through Ministry of Health is being used. For remaining courses the reference books suggested in the curriculum are followed. Textbooks for 12 courses are available out of 20 courses. For LIC and GIC, textbooks developed by the Board are used. Karnataka, Kerala and Maharashtra have also been approached for text books.

### **Modification of Recruitment Rules**

For recognition of 10+2 Vocational Qualification for recruitment purposes, a sub-committee of State Council of Vocational Education headed by Secretary Personnel is actively working on it, and hopefully vocational qualifications are likely to be incorporated in the recruitment rules of health and engineering department under Chandigarh Administration. All other Govt. departments have agreed in principle. Local Employment Exchange has started registering these students under Category 2.

### **Linkages for Upward Mobility**

In our endeavour to provide avenues for career development and professional growth to the graduates of vocational courses, steps have been taken to link these courses with higher professional and academic courses. The Punjab University has recognised 10+2 vocational

certificate for admission to graduate courses in humanities. For Commerce and Home Science the case is under consideration. For technical courses the Directorate of Technical Education has also been approached to admit these students to third semester of Diploma courses and also reserve some seats for them at the entry point. But success in respect to this issue seems to be a distant dream because Technical Education of Chandigarh is governed by Punjab Board of Technical Education.

Post Graduate Institute of Medical Education & Research recognises the passouts of Medical Laboratory Technology and X-Ray Technology courses for admission to their graduate courses. The students of Ophthalmic Techniques remain at a disadvantage because PGI does not run any Graduate course in Ophthalmic Techniques. AIIMS and Aligarh Eye Hospital having this facility has been approached many a time but nothing fruitful has come out as yet and we are still pursuing it. Products of Auxiliary Nursing Midwifery vocational course are accepted for admission to three year General Nursing course but for admission to Nursing degree course, 10+2 ANM course is not recognised.

### **Management Information System**

Principals incharge of the schools where vocational courses are being run and teachers of various vocational courses have been trained to handle Management Information System. Necessary proforma to fill this information have been printed and filled manually for onward transmission of this information.

### **Follow-up of the students**

The students who pass out of vocational stream are not left in lurch. Follow-up cards are devised to keep track of students. Every now and then employment information is mailed to the students. The employers are also kept informed of the type of manpower available with us.

The idea of setting up a cooperative society has been approved by administration and shortly students desirous for working in society will be enrolled. These cooperative societies will be used for :

1. Providing On the Job Training to existing students.
2. Preparatory for the passed out students desirous of setting up their own ventures.
3. Source of income for those who want to supplement their family income after passing 10+2.

### **State Council of Vocational Education**

State Council of Vocational Education was constituted in 1992 with Advisor to the Administrator, Chandigarh Administration as its Chairman with 26 official and non-official members. Majority of them are either heads of the various departments or technocrats. SCVE which generally meets once in a year operates through four sub-committees and a standing committee constituted for taking care of :

- i) amendment of recruitment rules in favour of Vocational passouts.
- ii) recognition of 10+2 vocational stream certificates for admission to higher academic and professional courses.
- iii) financial aspects.
- iv) collaboration with various sectors of economy.

### **On the JOB Training:**

Different models of On the Job Training are prevalent which can be explained as under:-

- i) Work placed based On the Job Training 16
- ii) Institution/School based OJT. 04

On the Job Training is mandatory. It is evaluated by the supervisor at the work place. It is separately certified. Character certificate which is issued includes the performance of student on OJT.

### **Apprenticeship Training:**

14 courses are covered under Apprenticeship Act and about 60% of the passouts have been getting placement under this scheme.

### **Research & Development:**

Functional Research studies are also conducted for improving the performance of these courses. A longitudinal study on the basis of Board result was undertaken. The findings of the study reveal that :

- i) Pass percentage is fairly high.
  - ii) The failure is attributed to the poor performance in language/other subject.
  - iii) Success rate in Vocational Elective subjects is 95% and above.
- Placement position of the passouts is also not very unhappy. Students desirous of getting employment do get adequate opportunities. Specially the students of paramedical courses, Stenography, Electrical and Automobile Technology do not face any difficulty in this regard.
  - For popularising the courses and making the employers aware of our programme we bring out a magazine on Vocational Education through which we reach our beneficiaries. This attempt has been widely appreciated.
  - The courses are also published through the press and the print media has come forward in a big way to popularise the programme. Local dailies keep on highlighting the activities of this programme.
  - On the Spot competitions and exhibition-cum-sales are organised to introduce our students to their prospective employers.
  - Career Meets and Career Talks are regular feature of our programme. It has yielded high returns.
  - Prize distribution function exclusively for vocational stream students are held to enhance self esteem among the students.

- On the JOB Training spanning over a period of 2 and 4 weeks at the end of class XI and XII is conducted.
- Vocational Education Unit is now intending to run placement services, preparation in this regard is in progress; it is expected to be functional by next year.

## COMMENTS AND SUGGESTIONS

First of all we must appreciate the decision of the Board for converting all single paper vocational subjects into self-contained packages. It is also learnt that some of the courses have been reviewed and redesigned. I congratulate the Board on this account as well, as also request them to circulate the copies of the newly printed document.

We are proud to be associated with this Board which is known for its excellence. In our endeavour to keep its name and fame high, I would like to make certain submissions for consideration of the Board with the permission of the chair.

With regard to curriculum, considering the high rate of obsolescence, constant review and revision of each course to be taken at least once in five years is proposed.

- In view of the fast changing technological scenario as well as the expectations of employers the future education must be designed as a programme to provide students sufficiently equipped to enter and advance in technological work place. Before formulation of any course, we must decide whether the course content is to be designed for generic vocational preparation or for the job specific pre-employment vocational education or a mixed approach. There is a strong case for continuing with both the approaches. The recent global thinking tends to favour minimising the dichotomy between academic and vocational education by including more elements of one in other.
- Inclusion of entrepreneurship component in general foundation course is a welcome addition.
- The Board may also consider the possibility of introducing it as a subject field running parallel to other subjects.
- In view of the diverse nature of courses each vocational course may have a separate module on entrepreneurship suited to itself.
- Each curriculum should:
  - a) define the competency to be developed topic-wise
  - b) indicate the time/periods allocated.
  - c) weightage in terms of marks topic-wise.
  - c) project work.
  - e) sessional work.
  - f) qualifications of teaching and other staff.
  - g) laboratory requirement/equipment along with specifications.
  - h) statutory conditions, if any.
- To keep up with the traditions of being a pacesetter in introducing job-linked courses like General Insurance, Life Insurance Courses and Railways, possibility of association may also be explored with several other departments like Ministry of Information and

Broadcasting, Post & Telegraphs and Banking Industries etc. Such courses enhance the respectability of vocational education programme.

- Dialogue with the large industries and organisations having high employment potential can also be opened and develop tailor-made courses of two to three years duration in accordance with their requirement.
- The vocational courses being need-based are often short-lived, therefore the Board should be sufficiently equipped to come out with the syllabus and other textual material promptly as and when demand comes from its customers. Any delay on this account dilutes the programme.
- Vocational courses being area-specific should be developed in consultation with the employers and providers of that area from where the demand comes.
- Courses which fall under the purview of any Council should be got prepared under their guidance so that they may not remain indifferent to the changes taking place in education and other service sector. Instead of granting recognition to individual courses it may be desirable that recognition may be given to the Board to which the institutions are affiliated. Sometimes hesitation of the Board to deviate from its normal circular framework also hampers the introduction of a particular course. The Board may adopt a different model for job-specific or job-linked courses and another model for job-oriented where emphasis can be on generic preparation.

### **Evaluation:**

Evaluation procedures followed in respect of vocational stream need review, modifications and additions too. The students have to be evaluated for their achievements in the area of knowledge, understanding, vocational skill and personality traits, and it will be appropriate to use 'Criterion Reference' rather than the presently practised 'norm reference Criterion'. Guidelines for this purpose need to be developed for all the vocational fields. Scheme of evaluation should take into account the competencies based instructional objectives. The guidelines prepared by the Board for engineering based courses sometime back need to be reviewed. NCERT has done very good work in this area which can be made use of.

Prevailing remuneration rate to the practical examiners are low, it needs a substantial increase so that competent professionals from hospital and other collaborating institutions can be attracted. Evaluation of vocational practical training in a scheme which gives 67% weightage to practical training related theory only should not be treated to be at par with academic subjects in which practical component is just 20% to 30%. Experience of polytechnics, medical colleges and other professional institutions, which have proven record of producing quality technicians, health and paramedical professionals can be utilised for working out procedures for evaluating practical subjects under vocational stream. It is satisfying to see the changes made in the SSSE Certificate, it will be still better if the competency achieved can also be shown.

### **Apprenticeship Training**

For availing the apprenticeship facilities fully, nomenclature of some of the existing courses needs to be changed to coincide with the approved courses under the Apprenticeship Act.



## **Vertical Mobility**

For providing fair chances of vertical mobility Board may initiate a dialogue with AIU, IGNOU, UGC and AICTE to work out the kind of bridge courses which may be required for different vocational courses leading to entry into required higher or tertiary courses and work out their modus operandi.

## **Reservation of seats**

In order to provide equal opportunities to all the graduates and facilitate inter-state mobility, CBSE should take up with Government of India the possibility of introducing a centralised examination system. 20% of the seats in each health and paramedical course should be filled up through this process.

## **On Job Training (OJT)**

On the job training component needs to be given a better deal. As per the existing course design 6 weeks on the job training to be spread over two years is prescribed. In this regard it is proposed that this should be raised to three months which is also a statutory requirement of some of the Councils. It may be preferably be done after the annual examination at the end of Class 12th before the declaration of the annual result. As far my experience goes, holding of 4 weeks on the job training at the end of class XI and then in the autumn break two weeks does not serve much purpose because in class XI only basics are done. Sometimes it spoils the image of the vocational courses. On the job training should be evaluated jointly by the Board and the supervisor at the place of work. Certificates to this effect should also be issued by the Board.

Since the vocational courses cut across various fields of economic activities, therefore subject expert of these fields should be on the regular roll of the Board for providing academic support to this massive programme in which the Board is expected to provide new courses every year, develop textbooks, evolve evaluation techniques, prepare teacher guides, question banks, keep liaison with statutory bodies, identify institutions and organisations for collaborative arrangement, getting recognition of the courses for admission purposes, develop bridge courses, undertake research and development functions besides its other functions.

Regarding Central assistance Government of India may be approached to divert the funds allocated to states for curriculum, instructional material and textbook development to the State Boards of Education for undertaking these activities.

Representatives of state vocational education Units/Departments should be taken on the Advisory Board of Central Board of Secondary Education.

Affiliation bylaws also need to be revised to include the norms for affiliating a vocational course.

Copy of all the circulars/letters sent to schools may also be sent to the Education Department/ Directorate for their information.

I hope some suggestions if found useful by the Board would be considered to make the Vocational Programme more effective.

### 3.3 Status of Vocational Streams in Navodaya Vidyalayas

Dr. S.S. Gauri, Dy. Secretary, NVS

During the year 1991 two Navodaya Vidyalayas reached at Senior Secondary stage and in one of the Vidyalayas (JNV, Amravati) Life Insurance Vocational course was started. Initially LIC not only took the responsibility of assisting and doing this vocational course but also subsequently recruited the students who passed Class XII with the said course. The process of vocationalisation during 1991-92 was started by calculating the list of vocational courses suitable to the various districts, from the concerned Principals of the Vidyalayas. The Principals were asked to contact DMs/DCs/DEOs and submit a list of possible vocational courses keeping in view the self employment and our employment potential in the districts. Further based on the physical facilities available in the Navodaya Vidyalayas and also keeping in view the aptitude and the interests of the children during 1991-92, the vocational courses were started in 15 Vidyalayas. Since then the progress of the introduction of vocational streams in Navodaya Vidyalayas is given below :—

Year	No. of Vidyalayas
1990-91	1
1991-92	15
1992-93	28
1993-94	21
1994-95	15

In order to provide infrastructure facilities an amount of Rs. 15.00 lakhs during 1992-93 and Rs. 12.5 lakhs during 1993-94 was released to Vidyalayas where vocational streams were introduced. From the table given above, it is seen that the number of Vidyalayas opting for vocational courses have been on the decline. An informal study carried out to ascertain the reasons for the decline revealed the following :—

1. The feedback received from the students who took up vocational courses was not encouraging. Some of the students had difficulty in securing admission in University/ Higher Institute of Learning since vocational course made them ineligible for admission. For example, Director Technical Courses refused to recognise our technical courses for admission into diploma courses in Engineering since their requirement was only Physics, Chemistry and Mathematics at +2 stage. Shivaji University and Dr. Baba Saheb Ambedkar/ Marathwada University declined to recognise vocational courses in Electronic Technology equivalent to XII standard for admission.
2. Suitable teachers for imparting instructions for courses were not easily available. Our

Vidyalayas being located in remote areas, the problem became more acute. It was found that a single teacher was not able to teach the various subjects incorporated in a vocational stream. Therefore it became more difficult to continue a stream. Since the future of a vocational stream in a Vidyalaya became uncertain, it became difficult for the Samiti to appoint teachers on regular basis. This was experienced in Computer vocational course and Hotel Management course.

3. Prescribed textbooks for various vocational streams were not easily available which affected the teaching in Vidyalaya.
4. The cost of infrastructure for introducing vocational stream was found to be fairly high. For instance cost of infrastructure for Hotel Management was estimated through Principal, Hotel Manager, Bhopal, and it came to a huge sums which could not be invested for number of students opting in future years, is uncertain. Expert Cooks, Instructors could not be easily available for the course. Non-availability of infrastructural facilities also leads to unpopularity of a stream in a Vidyalaya.

In view of the above mentioned difficulties faced by Navodaya Vidyalayas, the chances of acceptance of a vocational stream can be enhanced provided specific decision on following issues are taken by the competent authorities:-

1. A proper linkage of the courses with the industry may have to be established so that students can be directly absorbed for employment.
2. Since majority of the students do not go for self employment, the rules for admission to colleges/Higher Institutes of learning for students who pass +2 with a vocational course may be revised and they should also be granted admission at par with other students.
3. The courses may be devised in such a manner that a single teacher should be able to impart instructions for a vocational stream.
4. The textbooks for each vocational stream should also be prepared in order to streamline the instructions on vocational courses.

It is felt that vocational courses may be modified in such a manner that not only the students are given a clear chance for vertical mobility in case they desire but also a direct link with the industries also be created so as to make the syllabus and contents more sensitive to the needs of Industry. For instance textile designing course is based largely on hand weaving whereas the textile industry is generating a great demand for students with a strong base in chemistry. This demand could be utilised for making appropriate vocational course.

### 3.4 Vocational Course — Railways' Pioneering Venture

T.K. Balasubramanian

1. Indian Railways are not only transporters of men and material but also are pioneers in the field of education as well. Provision of educational facilities, which started in a small way mainly to cater to the need of officials of the management of the erstwhile Company Railways, later got expanded to meet the needs of the railway employees working in far-flung areas, as a measure of staff welfare. Increasing demand for such facilities, as a result of growth in the population of railway family, provision of primary schools at such places, where they do not exist or considered insufficient, was made with the growth and expansion of the railway system. Later Railways arranged to provide Kendriya Vidyalayas in Railway premises, mainly to assist the families of transferable railways employees. To-date, Railways have provided over 600 schools, most of them being of the primary standard and 70 Kendriya Vidyalayas in Railway Colonies.
2. Another important milestone to improve service to the customers have been reached by the Railways, when they made a pioneering venture to introduce a Vocational Course, which is job-linked as well as job-oriented, in collaboration with the CBSE & NCERT. Thus, Railways are the first and foremost department of the Government of India to introduce a Vocational Course.
3. To give a little background leading to this maiden venture, the initiative was taken in 1989 by Shri M.N. Prasad, the then Chairman, Railway Board, who forwarded a paper entitled, "A new approach to improving the human element for Indian Railways" emphasising the need for inculcating a spirit of service, discipline and pride of profession among recruits to the Railway Service, particularly in non-technical public image categories.
4. After a great deal of deliberations and detailed examination, based on the experience of mainly the two public sector agencies viz., GIC and LIC in this field and taking abundant precautions at various stages, the Railway Board launched the scheme in the academic year 1991-92 in five selected centres in the country, as a pilot project and extended it to the four more selected centres in 1992-93 academic year. The job-linked course is known as "Vocational Course in Railway Commercial", introduced at plus-2 stage.
5. Students passing this course will be eligible for recruitment in Railway Service as "Commercial Clerks" (coaching/goods/booking) Ticket Collectors.
6. The objective of introducing the Vocational Course was two-fold. It is in line with the policy of the Government to introduce vocationalisation of high school education, make it job-oriented, de-link jobs with the degrees and provide an alternative to higher education. It is also a part of the manpower planning of the Railways by "catching them

young” and grooming them to become ideal Railway employees with a sense of dedication and discipline and sensitive to the needs of the customers, whom the Railways serve.

- 6.1 It is a new experiment, aimed at selecting suitable candidates at a younger and more impressionable age and inculcating the right ethos of service, as well as a greater sense of belongingness while at the same time equipping them with job relevant knowledge, as a part of the course curriculum.
7. The salient features of the scheme are as follows :-
  - 7.1 Only 9 schools—one school per Zonal Railway— are conducting the Course and all are selected by, and affiliated to CBSE.
  - 7.2 The schools have been chosen at the place of Zonal Railway headquarters to facilitate quick interaction, provide qualified and competent instructors, monitor the progress and extend assistance, where need be.
  - 7.3 Only 40 students are admitted in each academic year in each school.
  - 7.4 Admission to the Course is through an entrance examination conducted by the specified Railway Recruitment Boards.
  - 7.5 Students appearing in the Secondary School Examination of a recognised Board at the end of the current academic year, only are eligible to compete in the entrance examination.
  - 7.6 Students qualifying the entrance examination are offered admission to the Vocational Course, provided they pass the Secondary School examination with at least 50% marks in aggregate and subject to a medical examination. Whereas, students who secure above 70% in Secondary School exam opt for the course and secure more than 80% in the entrance examination who get finally selected.
  - 7.7 Students who are less than 18 years, as on 1st June of the year, in which the course commences are eligible for the entrance examination.
  - 7.8 A detailed schedule of dates etc., covering all aspects relating to the examination is prepared well in advance and acted upon by the Railway Administration.
  - 7.9 The examination is conducted on an all-India basis, on a specified date.
  - 7.10 Adequate publicity relating to the examination is given through various media, viz, spoken, written and visual, including in the Employment News and Rozgar Samachar.
  - 7.11 The examination consists of a written test of objective type, multi-choice question in General Knowledge, General English, General Arithmetic and General Intelligence/ Psychology and Aptitude, followed by personal interview.
  - 7.12 The Principals of the schools are associated by the Railway Recruitment Boards for the interviews of the candidates.
  - 7.13 Instructions exist to observe in the interviews the students general demeanour, innately polite and well brought up behaviour, good record of character, participation in nation-

building activities like scouting, social service etc.

- 7.14 One of the centres for the written examination is the school itself, where the Course has been introduced.
- 7.15 Students should select the school, wherein they wish to seek admission and take entrance examination conducted by the nominated Railway Recruitment Boards.
- 7.16 Students should make their own arrangements for studying in the school, where they get admitted and bear all expenses in connection with their education in that school, i.e., fees, boarding and lodging etc.
- 7.17 Railway Recruitment Boards advise the students of the fee structure in the school, for which they are being selected, while calling them for interview.
- 7.18 Students are not required to execute a bond to serve the Railways.
- 7.19 It will be heartening to note that over 2 lakh students all over India apply for the examination conducted by the Railway Recruitment Boards, of which about 80% of students are found eligible and 80% of such students actually appear for the examination, which works out in the ratio of 1 : 370 i.e., about 370 students compete for each seat in the Vocational Course.
- 7.20 The curriculum for the Course has been so designed that only one subject has been specially prepared to meet the requirement of Railways and the rest is common with the existing Course, i.e., only the subject "Railway Commercial Working" is relevant to Railways, leaving other subjects like English, Second Language or Business Studies, Economics and Accountancy.
- 7.21 There is no hindrance for those selected to continue their higher education, once they pass the Secondary School Examination and higher level linkage has been taken into account.
- 7.22 Under this programme we cover about 25% of the vacancies only, thus leaving enough scope to absorb departmental promotees, appointees on compassionate ground and other types of recruitment.
- 7.23 The curriculum and textbooks for Railway Commercial Working, both for classes XI and XII, and for General Foundation Course (part II) have been specifically prepared under the able guidance of NCERT and CBSE and are available with CBSE.
- 7.24 Faculty support to teach the subjects on Railway Commercial Working and General Foundation Course (part II) have been provided by the Railways.
- 7.25 The students are given on the job compulsory training for 3 weeks, at the end of Class XI, during the summer vacation in the local offices of Railways, so that they are exposed to the real life situations and are acclimatised to the real working environment in the respective positions.
- 7.26 Students who pass the Course by securing at least 55% marks in "Railway Commercial Working", as well as in the aggregate, are offered appointment as "Commercial Clerks"

or "Ticket Collectors", on Railways, on the basis of merit-cum-choice.

- 7.27 They are appointed in scale of pay Rs.975-1540/- plus other admissible allowances like DA, HRA, CCA etc., at the rates specified from time to time. They also become eligible for free travel on rail, bonus, free medical services, allotment of quarters etc.
- 7.28 Soon after their appointment, they are sent to undergo an "Induction Programme" of in-service training for a fortnight to have an overall view of the working of Railways, other than Commercial Department.
- 7.29 After completion of the Induction Programme, they are given further on-the-job training, as may be considered necessary, before they are posted to working post.
- 7.30 They have further avenues of advancement to higher grade posts, including supervisory levels and are eligible for appointment in officers' grade in Commercial Department of Railways, subject to their acquiring the prescribed educational qualifications and qualifying in the concerned selection.
- 7.31 The instructors deputed by Railways are selected after taking into consideration various factors, like their aptitude, devotion, experience and expertise, availability of time etc.
- 7.32 Apart from textbooks on "Railway Commercial Working" and "General Foundation Course (part II)" the Railways have provided to the School students, copies of all relevant reference books, work books, question banks etc.
- 7.33 Railways also conduct orientation programme/workshop for Instructors periodically.
- 7.34 With a view to providing permanent faculty, as a long term measure, the schools have been asked to nominate competent teachers, who are willing to undergo training in Railway Working and take up the teaching of these two subjects, during the summer vacation. They are provided with all requisite facilities by the Railways for this purpose.
- 7.35 Railway Administration have been instructed to keep vacancies reserved for absorption of candidates from this source, every year.
- 7.36 Reservation of seats for SC (6), ST(3) AND OBC (11) categories, as per rules, are made.
- 7.37 The Course is at present in English medium. However, teaching is imparted both in English and Hindi, as is found necessary. Textbooks on "Railway Commercial Working", both for classes XI and XII, have been translated into Hindi and limited number of copies have been made available to the schools concerned. Besides, students can answer questions in Hindi if they like, and the question papers are bilingual. Hindi version of the books will be published by CBSE soon.
- 7.38 Students who fail in class XI examination, may repeat the Course.
- 7.39 To thrash out all issues relating to the successful implementation of the Course, a Joint Meeting of Principals of the Schools, Chief Personnel Officers of the Zonal Railways and Chairman, Railway Recruitment Boards concerned, is conducted annually, by the Railway Board, to which the representatives of CBSE are also invited.
- 7.40 A "compendium" of instructions issued since inception of the scheme has been brought

out and it is updated from time to time, copies of which are made available to all concerned, for their information and guidance.

- 7.41 A Monitoring Committee, consisting of Adviser (Staff), Railway Board, Chairman/CBSE and other officials concerned of NCERT, CBSE and the Railway Board, have been constituted to monitor the progress of the scheme.
- 7.42 Chief Personnel Officers, with the assistance of Chief Commercial Managers of the Zonal Railways, have been made responsible for effective implementation of the scheme, by periodical visits and discussion with the Principals of the School concerned, with a view to extending full support to them and ensuring that the officials concerned take adequate interest and initiative in implementation of the scheme.
- 7.43 The students who undergo the Course in the selected schools are issued specially designed Identity Cards with the motto adopted for the scheme "Courtesy and Integrity above all."
- 7.44 In accordance with the instructions of CBSE, the textbooks for "Railway Commercial Working" and "General Foundation Course (part II)" are being reviewed and updated to enable them to bring out revised edition early.
- 7.45 As a measure of encouragement and incentive, the Railway Administration grant a First Class Complementary Cheque Pass to the students who top the class in the Board's examination, in this Course, in each school, accompanied by a guardian, to any place of their choice.
8. Of course, to achieve the desired success and fulfil the objectives, active assistance, cooperation and guidance of CBSE, NCERT, Department of Education, Government of India and other agencies, particularly of the Principals and Management of the schools concerned are sine qua non.
9. Railways have not had a smooth passage in implementing the scheme, and continue to face a number of problems from time to time from different quarters, but they always believe in the saying:

"It takes time and perseverance to do big things. It will not do, to be faint-hearted. One meets with failure occasionally, but one has yet to go on. Success does not come suddenly or without set-back."

Hence, satisfaction lies in the effort, not in the attainment. Full effort is full victory.
10. To conclude, I quote Mahatma Gandhiji, the Father of the Nation, who said, "All manner of changes are going to take place in our country and no one can say, what it will be like, a few years hence. But a person, who is trained, to do something that is worthwhile, is always a valued member of Society. Thou shalt earn thy bread by the sweat of thy brow."
11. Towards this goal, the Railways are steaming ahead and looking forward to a brighter future in this pioneering venture.



## 3.5 Role of PSSCIVE for the Development of Vocational Education in India

A. Palanivel, Reader, PSSCIVE (NCERT)

Pandit Shankarlal Sharma Central Institute of Vocational Education (PSSCIVE) Bhopal is a constituent of NCERT which is an autonomous organisation of the Government of India. The institute has been operationalised from 5th July 1993 at Bhopal. It is the National Apex Research and Development Organisation in the field of vocational education. The Psscive is headed by the Joint Director Dr. Arun K Mishra, who was formerly Professor and Head of the Department of Vocationalisation of Education, NCERT. The Institute has six Academic divisions.

- |                               |                           |
|-------------------------------|---------------------------|
| 1. Agriculture                | 2. Business and Commerce  |
| 3. Engineering and Technology | 4. Health and Paramedical |
| 5. Home Science               | 6. Humanities and others  |

The Institute organises the programmes in development, extension, research, training and evaluation to achieve the national objective of vocational education.

### **Functions and Activities of the Institute.**

The principal function of the Psscive is to provide R & D and technical support for the realisation of the national goal of vocational education in fulfilling the manpower requirement for national development and the social requirement of employment. The other functions include :

1. To advise and assist the MHRD, State Governments and Union Territory administrations on the implementation of vocational education programmes and WEPS in India.
2. To study and Monitor the educational requirements of the country as a whole in regard to preparing manpower for development.
3. To undertake, guide and co-ordinate curriculum development, training, research and monitoring and evaluation and to offer consultancy to state governments in the area of vocational education—both in formal and non-formal.
4. To ensure the uniformity of patterns in the context of national system of vocational education and to maintain quality and standards including those of teaching professionals at all levels.
5. To cater to the needs of research and other studies in the field of vocational education and other supportive areas.
6. To establish equivalence of certificates and to accredit vocational institutions keeping the quality parameters in views.
7. To look after the international aspects of vocational education and human resource development.

## Major Activities undertaken by PSSCIVE

1. developing and evaluation curricula and instructional materials
2. conducting orientation programmes for various types of functionaries such as principals, state officials survey workers, co-ordinators of curriculum and instructional material development programmes, co-ordinators of teacher training programmes.
3. evaluation of vocational education programmes for attainment of stipulated targets and maintenance of quality
4. supporting schools in adjoining areas of lab schools of CIVE
5. organising in-service Training courses on a regular basis for vocational teachers
6. providing consultancy to state govt. agencies, International organisations relating to vocational education programmes
7. conducting on-the spot study research programmes
8. conducting Inter-state field seminar programmes etc.

## MANAGEMENT STRUCTURE FOR VOCATIONAL EDUCATION:

In pursuance of the policy and programme, management infrastructure have been/are being set up under CSS at national, state, district and institution level for effectively carrying out four categories of functions required for implementing the VEP. Policy Formulation & Coordination, Development & Research, Administration & Supervision, and, Examination & Certification.

### Management Structure

Levels	Functions			
	Policy Formulations & Coordination	R&D	Admn. & Supervision	Exams & Certification
National	JCVE	PSSCIVE	Voc. Edn. Div. (Bureau of Sec. Edn) MHRD	CBSE
Regional State	SCVE	BOATs, RCEs SIVE	Directorate of Voc. edn.	State Boards / Voc. Boards.
District	District Voc.		District Voc. Edn Office	
Institution	Institutional Advisory Committee		Principal / Vice Principal	

## 2. CURRICULAR MODEL

### National Curriculum Design

The curriculum design as recommended at the national level by CIVE tends to develop desired level of competency in vocational graduates in their respective areas of specialisation and prepare them for employment, either self or wage.

In the nationally recommended curricular design each vocational course consists of three components: language(s), general foundation course (GFC), and, vocational theory and practice.

### NATIONAL CURRICULUM DESIGN

Area	Weightage in %
1. Language	15
2. General Foundation Course (GFC)	15
— Environmental Education & Rural Development	
— Entrepreneurship Development.	
3. Vocational Theory and Practice	70
Total	100

Language component of the curriculum aim to develop communication skill in the students to enable them to succeed in their vocations. It may be English and/or Regional Language. The decision is left to the implementing state/UT. The vocational needs demand the language(s) to be functional. In reality language(s) of the vocational stream is/are the same as that of the academic stream. The virtue of the common language component lies in the fact that it facilitates vertical mobility of vocational graduates in B.Com. and B.A. courses.

The GFC curriculum developed by CIVE is recommended as a compulsory component of all vocational courses at +2 stage. A vocational student to succeed must have a proper perception of the environment, its resources and potentiality, as well as growth. This perception will enable an aspirant to direct one's endeavour in right direction to enhance one's own growth as well as that of the country. A proper awareness and understanding of entrepreneurship is essential, because wage employment is limited. Only 10 per cent of manpower find absorption in wage employment. The rest will have to strive for self venture. This necessitates the development of each individual to become an entrepreneur. Thus Environment, sustainable development and entrepreneurship constitute the GFC curriculum. The implementing agencies, the Boards, are requested to switch over to this nationally recommended GFC curriculum.

The vocational theory and practical components are vocation specific which aims to develop needed vocational competencies for self or wage employment.

#### **Process of Development of Competency-based Curriculum**

The competency based vocational curriculum of CIVE is developed through the following stages by the working group members around 8 persons consisting of subject experts, employers and vocational teachers.

- |                      |                    |
|----------------------|--------------------|
| 1. Job Opportunities | 2. Job Description |
| 3. Job Analysis      | 4. Objectives      |

- |                               |  |
|-------------------------------|--|
| 5. Marking Scheme             | 6. Syllabus                                |
| 7. Inputs for the Course      | 8. Addresses for the procurement of inputs |
| 9. Collaborating institutions | 10. On-the-job training                    |
| 11. Teachers qualification    | 12. Reference Books                        |

**Curricular Transaction — A Collaborative Model**

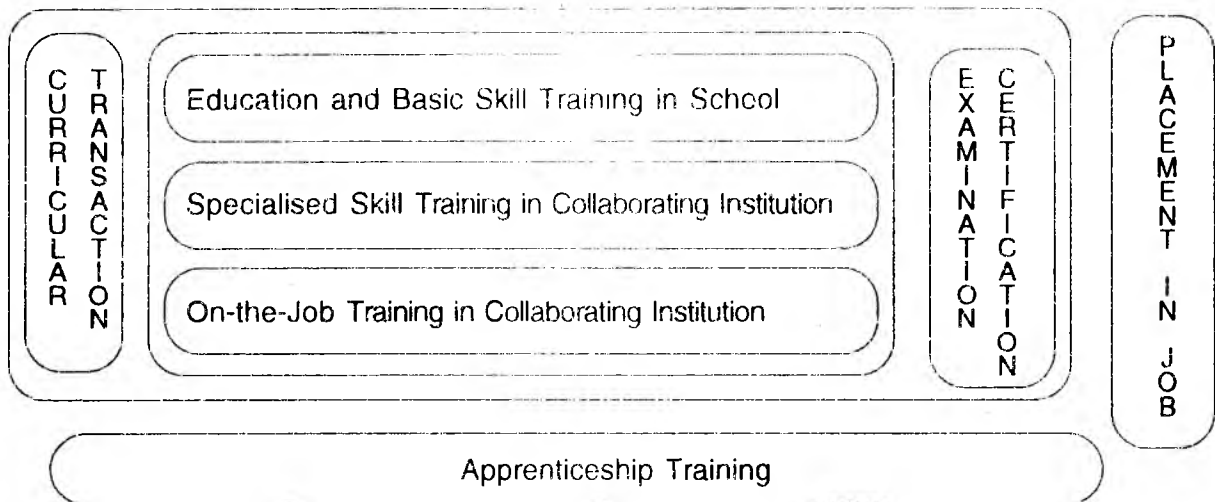
The VEP curriculum is transacted following a collaborative model for economical feasibility and optimum use of available infrastructural facilities in the already existing collaborating institutions.

The collaborating model of VEP under operation consists of :

- (a) basic skill training in the +2 institution,
- (b) specialised skill training in the collaborating institution(s);
- (c) On-the-job Training in the collaborating institution.

The Centrally Sponsored Scheme (CSS) makes provision of equipment grant to the school which suffices to impart basic skill training. For specialised skill training and on-the-job training must go to any collaborating institution(s).

**Operational Model of VEP**



**General Scheme of Comprehensive Evaluation**

The nature of vocational education and training programme is such that the existing external evaluation system alone cannot properly evaluate the attainment of vocational competencies by the students acquired during two years of exposure in curricular transaction organised at +2 institution, collaborative institution and on-the-job training (OJT). Evaluation has to be continuous and comprehensive comprising of both internal and external evaluation.

## GENERAL SCHEME OF COMPREHENSIVE EVALUATION

(in percent)

Component	Weightage	Internal Evaluation Institutional Periodic tests assignment	OJT	External Evaluation	Total
Language(s)	15			15	15
GFC	15	5		10	15
Vocational :					
— Theory	35	10		25	35
— Practice	35	10	10	15	35
Total	100	25	10	65	100

### Orientation Programmes for Key Functionaries

A significant contribution has been made through organisation of a series of orientation programmes of four days duration for key functionaries in the country with an aim to bring about clarity of conceptual framework, and assist in formulation and implementation of vocational education programmes in India. Through this process more than 500 key functionaries from different states were oriented directly in last year.

### Competency-based Curricula in Vocational Courses

Area	No. of Courses
01. AGRICULTURE	28
02. BUSINESS & COMMERCE	11
03. ENGINEERING & TECHNOLOGY	17
04. HEALTH & PARAMEDICAL	09
05. HOME SCIENCE	08
06. HUMANITIES & OTHERS	08
TOTAL	81

#### 01. Agriculture

- 0101 Agriculture Chemicals
- 0102 Crop Production
- 0103 Dairying
- 0104 Farm Mechanic
- 0105 Fish Processing Technology
- 0106 Horticulture
- 0107 Inland fisheries

- 0108 Plantation Crops & Management
- 0109 Plant Protection
- 0110 Poultry Production
- 0111 Seed Production Technology
- 0112 Sericulture
- 0113 Swine Production
- 0114 Vegetable Seed Production
- 0115 Floriculture Landscaping and Beekeeping
- 0116 Medicinal & Aromatic Plant Industry
- 0117 Sheep & Goat Husbandry
- 0118 Agro-based Food Industries (Food-based)
- 0119 Agro-based Food Industries (Animal-based)
- 0120 Agro-based Food Industries (Feed-based)
- 0121 Post Harvest Technology
- 0122 Fish Seed Production
- 0123 Fishing Technology
- 0124 Veterinary Pharmacist-cum-Artificial Insemination Assistant
- 0125 Repair & Maintenance of Power-driven Machinery
- 0126 Rural Construction Technology
- 0127 Veterinary Pharmacist-cum-Technician
- 0128 Dairy Technology

**02. Business & Commerce**

- 0201 Accountancy & Auditing
- 0202 Banking
- 0203 Cooperation
- 0204 Export-Import Practices & Documentation
- 0205 Insurance
- 0206 Marketing & Salesmanship
- 0207 Office Management
- 0208 Purchasing & Store-keeping
- 0209 Steno-typing
- 0210 Taxation Practices/Taxation Laws/Tax-Assistant
- 0211 Receptionist

**03. Engineering & Technology**

- 0301 Airconditioning & Refrigeration
- 0302 Audio Visual Technician
- 0303 Auto Engineering Technology

- 0304 Building Maintenance
- 0305 Clock & Watch Repair Technology
- 0306 Computer Techniques
- 0307 Electronics Technology
- 0308 Engineering Drawing & Drafting
- 0309 Lineman
- 0310 Maintenance & Repair of Electrical Domestic Appliances
- 0311 Mechanical Engineering Technology
- 0312 Printing & Book Binding Technology
- 0313 Repair & Maintenance of Radio and TV Receiver
- 0314 Repair, Maintenance & Rewinding of Electric Motor
- 0315 Rural Engineering Technology
- 0316 Plastic Technology
- 0317 Software Applications

**04. Health & Paramedical**

- 0401 Health/Sanitary Inspector
- 0402 Hospital Documentation & Record Keeping
- 0403 Hospital Housekeeping
- 0404 Multi Rehabilitation Worker
- 0405 Medical Laboratory Technician
- 0406 Ophthalmic Technician
- 0407 Physiotherapy and Occupational Therapy
- 0408 X-Ray Technician
- 0409 Health & Paramedical Curricula  
(Revised and Recognised with core and elective modular outlines)
- 0410 Repair and Maintenance of Biomedical Equipment (proposed)

**05. Home-Science**

- 0501 Bakery & Confectionery
- 0502 Catering & Restaurant Management
- 0503 Clothing for the Family
- 0504 Commercial Garment Designing & Making
- 0505 Food Preservation & Processing
- 0506 Institutional House-keeping
- 0507 Pre-school & Creche Management
- 0508 Textile Designing

**06. Humanities & Others**

- 0601 Interior Design
- 0602 Library & Information Science
- 0603 Photography
- 0604 Tourism & Travel Techniques
- 0605 Classical Dance - Kathak
- 0606 Instrumental Music -Tabla
- 0607 Commercial Art
- 0608 Hindustani Vocal Music

**07. General Foundation Course**

- 0701 General Foundation Course (GFC)

At present 20 courses are in the process of revision and development.

**Vocational Courses Covered under the Apprentices Act 1961**

- |  |   |
|--|---|
| 1. Accountancy & Auditing                      | 23. Plantation Crops and Management                             |
| 2. Banking                                     | 24. Seed Production Technology                                  |
| 3. Marketing & Salesmanship                    | 25. Swine Production  |
| 4. Office Secretaryship Stenography            | 26. Vegetable Seed Production                                   |
| 5. Food Preservation                           | 27. Medicinal & Aromatic Plants Industry                        |
| 6. Poultry Farming                             | 28. Sheep & Goat Husbandry                                      |
| 7. Fisheries/Fish Processing                   | 29. Repair and Maintenance of<br>Power-driven Farm Machinery    |
| 8. Dairying                                    | 30. Veterinary Pharmacist-cum-Artificial<br>Insemination Asstt. |
| 9. Medical Laboratory<br>Technology/Assistants | 31. Agro-based Food Industries<br>(Animal-based)                |
| 10. Health Worker                              | 32. Agro-based Food Industries<br>(Crop-based)                  |
| 11. Nursing                                    | 33. Agro-based Food Industries<br>(Food-based)                  |
| 12. Child care & Nutrition                     | 34. Post Harvest Technology                                     |
| 13. Crop Cultivation/Production                | 35. Fish Seed Production  |
| 14. Sericulture                                | 36. Fishing Technology  |
| 15. Apiculture                                 | 37. Cooperation   |
| 16. Floriculture                               | 38. Export-Import Practices &<br>Documentation                  |
| 17. Plant Protection                           | 39. Insurance   |
| 18. Textile Designing                          |   |
| 19. Civil Construction/Maintenance             |   |
| 20. Mechanical Servicing                       |   |
| 21. Agriculture Chemicals                      |   |
| 22. Inland Fisheries                           |   |



- |   |   |
|---|---|
| 40. Purchasing & Store Keeping                                | 50. Multi Rehabilitation Worker               |
| 41. Taxation Practices/Taxation<br>Laws/Tax-Assistant         | 51. Catering & Restaurant Management          |
| 42. Audio-Visual Technician                                   | 52. Institutional Housekeeping                |
| 43. Maintenance & Repair of Electrical<br>Domestic Appliances | 53. Pre-School and Creche Management          |
| 44. Health Sanitary Inspector                                 | 54. Commercial Garments Designing &<br>Making |
| 45. Hospital Documentation                                    | 55. Interior Design                           |
| 46. Hospital House Keeping                                    | 56. Library & Information Science             |
| 47. Ophthalmic Technician                                     | 57. Tourism & Travel Techniques               |
| 48. Physiotherapy and Occupational<br>Therapy                 | 58. Instrumental Music (Percussion Tabla)     |
| 49. X-Ray Technician  | 59. Classical Dance (Kathak)                  |
|   | 60. Indian Music (Hindustani Vocal Music)     |

### **Instructional Material in WE & SUPW**

#### **(a) Exemplar Instructional Material for Work Experience**

	<u>Rs. P.</u>
01 Basic Skills In Carpentry (Classes VI)	07.20
02 Basic Office Practice (Classes IX-X)	08.75
03 Basic Book Keeping (Classes IX-X)	10.70
04 Care of the Household (Classes IX-X)	05.75
05 Community Work and Social Service	04.00
06 Creative Painting (Class VII-VIII)	03.70
07 Electric at Work (Classes IX-X)	05.90
08 Electricity Technology (Classes IX-X)	05.70
09 General Horticulture (Class IX-X)	10.20
10 Introduction of House-wiring (Classes IX-X)	10.65
11 Introduction of Plumbing (Classes IX-X)	05.05
12 Leather Work (Classes VI/VII/VIII)	03.20
13 Meals for the Family-Volume I (Classes IX-X)	06.25
14 Milk and Milk Products (Classes IX-X)	07.45
15 Milk Production and Handling (Classes IX-X)	07.50
16 Photography (Class IX)	04.80
17 Plant Protection (Classes IX-X)	06.05
18 Repair and Maintenance of Household Electrical Appliances	10.95
19 Scooter and Motorcycle Repair and Maintenance (Class IX)	07.90
20 Sheet Metal Work (Classes VII/VIII)	03.25
21 Woodcraft (Class IX)	06.05
22 Textile Care and Design	04.85

23	Tree Rearing Social and Agro-forestry	10.00
24	Dhatu Chaddar Karya (Hindi)(VII-VIII)	04.00
25	Kastha Kala (Class IX)	08.50
26	Gharelu Wiring (Class IX-X)	11.00
27	Photography (Hindi)(Class IX)	06.50
28	Photography (Class X)	05.50
29	Photography (Hindi)(Class X)	09.50

**(b) Instructional Material in SUPW**

01	SUPW-Sample Curriculum Unit	(Unpriced)
02	SUPW-Sample Implementing of Programme	(Unpriced)
03	SUPW-Source Book, Volumes I,II,III and IV(Unpriced)	(Unpriced)
04	SUPW-A Supplement	(Unpriced)
05	SUPW-Source Book, Volumes I-IV (Hindi version)	(Unpriced)

<b>06. Steno-Typing and Secretaryship</b>	1	Teachers Guide in Office Practice-Typewriting	<b>Office</b> 06.10
	2.	Question Bank in Office-Practice	12.00
<b>07. Banking</b>	1.	Teachers Guide in Banking I	05.00
	2.	Teachers Guide in Banking II	07.60
<b>08. Accountancy &amp; Auditing</b>	1	Teachers Guide in Accountancy-I	09.50
	2	Teachers Guide in Accountancy-II	13.50
<b>09. Auto Engineering Technology</b>	1	Laboratory Manual for Automobile Servicing	12.50
	2	Question Bank in Auto Engineering Technology (Cyclostyled)	
<b>10. Domestic Appliances Repairer</b>		<i>Instrumental-cum-Practical Manual</i>	
	1	Vol I	15.00
	2	Vol II	09.00
	3	Vol III	08.00
	4	Vol IV	17.00
	5	Vol V	16.00
<b>11. Lineman</b>		<i>Instrumental-cum-Practical Manual</i>	
	1	Elements of Electrical Technology-Vol I	07.75
	2	Lineman Practice-Vol I	11.75
	3	Basic Materials & Related Workshop-Vol I	04.50

	4	Elements of Electrical Technology-Vol II	08.00
	5	Basic Materials-Vol II	04.50
	6	Electrical Wiring Estimating & Costing	22.50
	7	Lineman Practice-Vol II	11.00
<b>12. Electronics</b>	1	Practical Manual on Electronics	25.00
<b>13. Repair, Maintenance &amp; Rewinding of Electric Motors</b>	1	Elements of Electrical Technology	(In press)
	2	Electrical Motors	(In press)
	3	Materials & Workshop Practice	(In press)
	4	Motor Winding Practice	(In press)
	5	Motor Maintenance & Repair	(In press)
	6	Motor Control & Testing	(In press)
<b>14. Medical Laboratory Technician</b>		<i>Medical Laboratory Techniques for Routine Domestic Tests</i>	
	1	Vol I Laboratory Services in the Health Delivery System in India	(Under Prepara)
	2	Vol II Basic Medical Sciences for Technicians	
		(i) Anatomy	04.00
		(ii) Physiology	04.00
	3	Vol III Laboratory Setu-up & Procedure	06.35
	4	Vol IV Clinical Pathology	04.55
	5	Vol V Parasitology & Mycology	(In press)
	6	Vol VI Haematology	(In press)
	7	Vol VII Clinical Bio-Chemistry	11.05
	8	Vol VIII Histotechnology	06.00
	9	Vol IX Microbiology	13.50
10	Vol X Serology	03.50	
11	Vol XI Blood Bank Operation	06.00	
12	Evaluation of Vocational Competencies of MLT Students (Cyclostyled)		
<b>15. Multipurpose Basic Health Worker-Male</b>		<i>Supplementary Readers</i>	
	1	Public Health Entomology	08.40
	2	Communicable Diseases	11.50
	3	Microbiology	
<b>16 General Foundation Course (GFC)</b>		<i>Textbooks</i>	
	1	Entrepreneurship Development	(Under Preparation)
	2	Environment & Development (A Textbook for EE & RD)	(Under Preparation)

## 3.6 Human Resource Development : Vocational Education and Training in KVI Sector

Kamal Taori, Chairman, KVIS

The Khadi and Village Industry Commission is a statutory body created by an Act of Parliament in 1956 and as amended by the Act No. 12 of 1987. Till the amendment, it has under its purview 26 villages Industries besides Khadi. In the year 1987-88 Govt. of India as per recommendations of the Khadi and V.I. Review Committee amended the KVIC Act which ushered in considerable expansion of the scope of village industries that would be eligible for KVIC finance and coverage, so that rural industrialisation would get impetus. Under the new Act any industry located in a rural area, village or town with a population of 10,000 and below and per capita investment of Rs.15,000/- or less on plant and Machinery is a village Industry. However there is a persistent demand for increasing the ceiling limit to 50,000.

Consequent upon the amendment of the KVIC Act, 70 new villages Industries have been added making a total of 96 Industries and broadly classified in to 7 groups namely 1) Mineral Based Industry 2) Forest based Industry 3) Agro Based and Food Industry 4) Polymer and chemical Based Industry 5) Engineering and Non-Conventional Energy 6) Textile Industry 7) Service Industry.

### **FUNCTIONS AND ACTIVITIES OF KVIC :-**

The functions of KVIC are generally to plan, promote and assist in the implementation of programme for the development of Khadi and Village Industries. To achieve this, it undertakes.

- a) Financing of eligible agencies.
- b) Training of persons employed or desirous of seeking employment in KVI Sector.
- c) Building reserve of raw material and implements and supplying them at such rates as may be decided.
- d) R & D in KVI Sector.
- e) Promoting sales and marketing of KVI Products.
- f) Promotion and encouragement of Co-operative efforts among persons engaged in KVI field etc.

The activities of Khadi and V.I. Commission had been undertaken through more than 3000 co-operative societies and 30 state Khadi and V.I. Boards. The state KVI Board work through about 30,000 Co-operatives and covered 6,00,000 individual artisans. So far KVIC covered more than 2.3 lakhs Village in the country.

### **DIRECTORATE OF TRAINING :-**

The trained manpower with requisite skills and technique is necessary for the successful

implementation of programmes undertaken by any organisation. With the expansion of Khadi and V.I. activities in India, particularly after independence the need was felt to create necessary manpower who will work in the rural areas and promote the activities of rural based industries besides Khadi for achievement of self sufficiency. With these objectives in view the Directorate of Training was created in 1955. The functions of the Directorate are generally as under :-

1. To plan and organise Training Programmes.
2. To design training courses with reference to field requirements and frame syllabi and make modifications/improvements with the active collaboration of concerned principals.
3. To review the existing syllabi and make modifications/ improvements as necessary from time to time.
4. To plan manpower requirements at the time of State Budget.
5. To conduct examinations combined with inspection.
6. To arrange preparation of Textbooks and reading materials.
7. To prepare annual budget, conduct inspection of Training Centres and provide timely guidance.
8. To arrange supply of improved implements to the training centres to upgrade the skills of artisans under training.
9. To submit proposals for opening of new training centres after necessary feasibility study conducted by State Director/Training Directorate.

#### **NEW TRENDS :-**

Till the recent past, the activities of Training Directorate was confined mainly to impart training in Khadi. Respective Industry Directorates were managing training of their respective Industries. Training activities were tailored as per requirement of various Khadi and V.I. Institutions engaged in the field. The Concept of individual entrepreneurship was absent. On the basis of the recommendations of KVIRC, the training activities of KVIC have been brought under one umbrella of Directorate of Training which resulted in effective and uniform control on different training programmes. It also helped in better monitoring and reduction of over all cost on training.

After unified command the concept of training has undergone a sea change. Apart from fulfilling the manpower requirements of the KVI Institutions, emphasis is being given on creating entrepreneurs/self employment opportunities. The training programmes were suitably modified on short term basis looking to the needs of the entrepreneurs. Income generation of the training centres have come up by way of charging tuition fees, L.C.P.C. and by margin over sales of the product under PMT (Production, Marketing, Training) concept with the idea to utilise idle period of machine and manpower. The training centres have been advised to make liaison with various agencies/Dept. of Governments and other voluntary agencies for providing more and more employment opportunities to educated and unemployed persons. Vocational education programme are also being visualised for school drop-outs for their livelihood.

## **BRIEF RECOMMENDATION OF THE HIGH POWER COMMITTEE :-**

With a view to accelerate the speed of KVI activities in the country and thereby creating employment avenues and eradication of poverty, the Govt of India decided to redefine the role of KVIC, for the purpose a High Power Committee under the Chairmanship of Prime Minister and Shri A.K. Anthony as working Chairman was constituted and the committee submitted its recommendations in the year 1994. The main points of the said recommendations with regard to training are as follows :

1. The Committee recommends that during the remaining period of the Eighth Plan 17.53 Lakh additional jobs should be created in village industries sector. To achieve this target KVIC will have to strengthen its organisation for supply of inputs, marketing and training. Financial institutions will have to provide additional requirement of credit.
2. KVIC Sector will not be able to bear the entire burden of training of artisans in village industries sector in the country. There is need for education departments in the States to include KVI trades in their vocational training programmes.
3. Certificates issued by KVIC should be recognised by the Central Government and State Governments and other bodies and should be treated at par with diploma and certificates issued by I.T.I.s, polytechnics and similar institutions.
4. Looking to the likely demand for training, particularly, in village industries programmes KVIC should come up with participatory funding scheme for starting large number of training centres. KVIC should tap financial resources from other organisations also.
5. While there are central level institutes for small scale industries, rural development and agriculture, there is no national level training centre in KVI sector. The training centre at Nasik should be converted into an autonomous institution for development of rural entrepreneurship. KVIC's multi-disciplinary and functional training centre should be properly staffed and necessary infrastructure should be provided.
6. There is no need to bring artisans to cities for imparting training. In the course of time the number of educated unemployed youth in rural areas has increased substantially. They should be encouraged to take advantage of self employment scheme.
7. KVIC should give proper attention for development and transfer of appropriate technology, improved tools, equipment and machines developed through KVIC's own efforts or through other S & T organisations should be made available to the artisans.

## **PRESENT POSITION AND SWOT ANALYSIS OF DIRECTORATE OF TRAINING**

From the above analysis, it can be clearly said that the role of Directorate of Training as visualised in the fifties has undergone a change in the nineties. The need is to open up and overcome the challenge rather than working with limitations and be dependent. The demand of the day is to create entrepreneurs rather than karyakartas and tap untapped resources from different organisations instead of depending on more grants. Thus with all these changes

occurred and the expectations being so high, it is pertinent to make a "SWOT" analysis of this Directorate considering the present needs.

**STRENGTH :-**

1. The Directorate of Training is having a total number of 61 deptt. and non-deptt. training centres throughout the country imparting training in many industries equipped with full fledged infrastructure facilities.
2. The technologies adopted by the training centres are of low cost and simple in nature which are easily transferable to the unemployed and educated youths.
3. Persons with requisite technical skills and knowledge of local language are posted at the training centres.

**WEAKNESS :-**

1. Comparing with the increase of training programmes in manifold, most of the training centres does not have sufficient staffs.
2. Within the last two years number of new industries have come under the fold of KVIC and with this new additions in training programme, we have to equip our staff with the technologies of new village industries. So far a little has been materialised due to financial constraints.
3. Since most of the training centres have been established some 30 years back, the infrastructure has become old and it requires renovation, repairs and replacements. In some of the places, because of non-availability/under capacity of hostel facilities the Directorate of Training is unable to start training in new industries or to increase the capacity of a particular training programme.
4. As per the decision of the unified command the Directorate of Training is expected to monitor plan and co-ordinate the training programme and formulate the syllabi etc. However, the staffs posted for conducting village industries belong to their respective V.I. cadre and some times due to lack of co-ordination a programme used to suffer. A separate "Training Cadre" is a necessary considering the smooth conduct of the Training programmes.
5. Till recent past we are not opened up and our training programme is mostly confined to cater the needs of the Khadi & Village Industries—institutions only. Due to this nonholistic approach we remain isolated from other like minded organisations and so also a reputation of our own and lack of publicity.
6. Our certificates are not yet been recognised by vocational education department of Central Govt as well as state Govts.
7. Till now the training programme are mainly confined in imparting technical skills and

knowledge and limited stress has been given on upgrading the managerial, financial, motivational skills, work culture and efficient communication skills of the staffs and officers of KVIC.

#### **OPPORTUNITIES :-**

1. It is observed that many Government and non-Government organisations are providing funds for organising training programmes for their sponsored candidates. With the necessary infrastructure and man-power available for conducting training programme, we have to tap the resources of those organisations and make our training centres self reliant.
2. Our training programme are mainly confined to impart technical training in various industries. With little modifications in our training programmes by including managerial training, EDP etc., We can increase the standard of our training programme. By this, instead of paying stipend we can charge fee from the trainees. Further many short term/ Refresher training by charging fees may be organised for the entrepreneurs.
3. It is observed that more and more institutions/entrepreneurs are coming to establish units in V.I. sectors and majority of them are not conversant with the procedure for establishment of unit, formalities involved, techniques of production, finding suitable marketing avenues and crisis management. Thus in most of the cases, it is found that though provided with necessary finance and technical details they are not in a position to start their units. Even if the unit has been started, it faces a premature closure for lack of proper guidance as to how an unit can run successfully. The training centres being established in each and every part of India and being provided with necessary manpower with adequate technical and managerial knowledge can act as a consultancy organisation for newly developed institutions under KVI fold and the young and emerging entrepreneurs undertaking KVI activities. A small fee may be charged for providing consultancy which will help for income generation of the training centres as well as improving the morale of the staffs.
4. Almost all the training centres are provided with adequate manpower and machines for the training purpose and it is observed that they remained idle during the non-training period. During these periods, production activities can be undertaken for internal Resource generation of the training centres as well as developing a model profitable unit which will inspire the trainees to undertake those activities.

#### **THREATS :-**

1. Training is not an end in itself but the beginning of the process by an individual/institutions to establish a unit. Training can be meaningful if suitable follow-up action such as financial and managerial support, consultancy etc., is provided to a person. Thus it should follow as a package and only providing training can not serve the purpose. Thus, the Training centres as well as the sponsoring institutions should hand over necessary package to the



trained candidates for making the training meaningful and effective.

2. The training programmes to be more effective, must be flexible and the duration, contents, methods etc., should vary from training centre to training centre depending on local condition, knowledge and ability of the trainees etc. Any rigidity on the part of the trainers and training centre will defeat the very spirit of providing training.
3. It is found that most of the institutions sponsored the trainees without being sanctioned with the programme. Similar is the case of individual entrepreneurs also. They never used to go for details, lacking in commitment and ability. No proper selection of industry and other related factors which requested in the lack of interest on the part of a trainee after a few days of undergoing training. Thus the selection of right person for training purpose is necessary.

### **WHY MARKETING OF TRAINING CENTRES/PROGRAMMES :-**

1. As discussed earlier, financial constraints is one of the main reason for which we are not in a position to expand our training programme. The conducting of training programme through the training centres by Directorate of Training fully depends on the grant received from KVIC. Due to the financial constraints on the part of the Government as well as KVIC, they are not in a position to provide adequate financial support for training purpose. Time has come that the training centres have to mobilise their own resources for continuation of training centres. They have to adopt a realistic approach of achieving self sufficiency rather than be dependent on grants and running charity based programmes.
2. Due to liberalisation policy adopted by government in economy and industry, there is every possibility that more and more industries will come up. Now it is time for the training centres to open up and provide avenues to the interested educated and uneducated unemployed youths and not necessarily only to the institutions. It will help the training centres in two ways i.e. more and more entrepreneurs will come up and the income generation of the training programmes have been substantially increased. It will also help to establish a reputation of their own like polytechnic, ITI's etc.
3. Many a government and non-government organisation have been providing financial assistance for organising training for their sponsored candidates under different schemes. Further, the concept of EDP has started in a big way in India and necessary financial assistance for organising the said training have been provided by many organisations mainly by financial institutions. We have to tap the resources of their organisations for organising the training programme and for achieving self sufficiency.

### **INITIATIVE TAKEN**

#### **1) Opening up training programmes :-**

Till the recent past the training programme of the KVIC training centres was continued only for

imparting training to the candidates of KVI institutions. No outsider without sponsorship of the institutions was eligible for admission in KVI training centres. It was felt that years after years we are creating more and more Karyakartas and supervisors instead of creating entrepreneurs. Even many of these trained personnel were without any work in the relevant field due to the inability of the institutions to get them engaged. Thus it was decided to open the training programme to all motivated prospective entrepreneurs who will start the units after completion of training. It helps in eradication of unemployment in a big way as well as to establish a reputation of our own as well as the training programmes.

## **2) Charging fee for training purposes :-**

Previously the personnel undergoing training in different KVI programmes and sponsored by organisations used to given stipend, T.A., D.A. and other financial benefits by the Khadi and V.I. Commission. Now the policy has been changed and instead of paying stipend we used to charge fees from the open market trainees and the payment of stipend to the sponsored candidates of the institutions has been need based. Even in some training programme like plastic, payment of stipend has totally been stopped and fee is to be charged from the trainees. It helps in reducing the expenditure of the training centres and income generation by way of the fees collected.

## **3) PMT (Production, Marketing and Training) :-**

Continuous programme is not going on at the training centre and so it has been decided to utilise that idle period of machine and man power for production purpose. The production work will be undertaken by the training centres and these products will be marketed by the training centres in open market. The margin earned over that will be the income of the training centres. Thus the training centre will act as an ideal production and marketing centres which will boost the morale of the training as well as the newly developed entrepreneurs and also help the income generation of the training centres.

## **4) Linkages with other organisations :-**

As discussed, many government and non-government organisations are ready to provide finance for imparting training to their sponsored candidates. To name a few, the Scheduled Caste/ Scheduled Tribe Development Corporation, Women Corporation, Backward Development Corporation etc. are the pioneering Agencies. What is needed a co-ordinated approach and linkages with those agencies for tapping up their resources and the maximum utilisation of our infrastructure. Most of the training centres have already initiated work in this regard and results are very much encouraging. Last year at least eleven sponsored programmes financed by different organisations and under different schemes have been organised by the training centres.

## **5) L.C.P.C. :-**

To guide and providing necessary consultancy for running up the units to the newly developed institutions and the first generation entrepreneur, it has been decided that all the training centres

will have the facility for providing the same with low cost. For the purpose, every training centres will have a panel of experts in different industries consists of retired personnel and in-service technicians. As and when required by the institutions/entrepreneurs, they will contact the nearby training centres and the training centres will help in providing the same. Thus, the training centres will act as an intermediary between the experts and the needy institutions/entrepreneurs.

## **6) Infrastructure Development :-**

To expand the training programme in new vivacious industries and to develop the infrastructure of the training centres, the Ministry of Industry, Govt. of India allotted Rs.1.5 crore last year.

## **PROMISING AVENUES AND INITIATIVE NEEDED**

### **1) Self supporting system for project formulation :-**

The Entrepreneurship Development Programme has already been started by many training centres and it is proposed to have this programme to be conducted in all our training centres. However, for setting up units after training one has to visualise all merits and demerits involved. This includes selection of product, selection of site, establishment of infrastructure, production, managerial, financial and marketing guidance etc. At the initial stage, we have to equip the entrepreneurs with all these activities and develop confidence in them which means back up support. Thus, every training centre should have a "project formulation and system analysis wing" which can play a catalytic role as a friend, philosopher and guide for the entrepreneurs. It will help entrepreneurs in all the process from setting up the unit to marketing of the product. Thus the training centre with act as a consultancy organisation also.

### **2. Expansion of training programme and centres :-**

It is understood that even after developing the infrastructure of existing training centres they will not be in a position to cater the needs of the total requirement of KVI Sector and also the demands of the prospective entrepreneurs in the rural sector. It is suggested that some peripatetic or institutionalised training centres should be opened to cater the needs of those people. This will help to some extent to bridge the gap of demand and supply for training purpose. Further it will help the rural prospective entrepreneurs to undergo training in the localised atmosphere and with less expenditure. It will also help to popularise the organisation among the masses.

### **3) Bank Finance :-**

One of the principal objective of the commission is to promote non-farm employment in the rural areas and there by reduce the pressure of population on land and agriculture. But the flow of funds to the sector has not been commensurate with the total requirement. As a result the activities have suffered. It is understand that due to resource crunch, it was not possible to adequately increase the budgetary support to this sector from the government. But the surprising fact is that even after completing technical training and adequately equipped with other related knowledge the banks are not providing necessary financial assistance to the prospective

entrepreneurs. Although the Government has taken up the matter with NABARD etc. to find out the ways to channelise the bank credit, nothing concrete has materialised so far. The reason for poor flow of institutional finance are so many. Rural entrepreneurs have poor resource endowment and their productivity and income are low. Their working capital needs are not fully appreciated because banks consider mainly net incremental income and repaying capacity. They are not endowed with business acumen and are not aware of different schemes and their terms and conditions. Their accounting procedures are more production oriented than market oriented. It has been suggested that financial institutions should be directed to channelise the flow of credit to rural entrepreneurs. This will ensure the setting up the units by the trained person and training will also be truly meaningful.

#### **4) Developing linkages with other organisations :-**

As stated there are many government and non-government organisations in the country who are providing financial support for organising training programmes for their sponsored candidates. The government is also formulating many self employment schemes like PMRY, JRY, TRYSEM etc., for the educated and uneducated unemployed rural and urban youths. Linkages can be developed for tapping their resources for training purpose.

##### **a) Linkages of Women's Welfare Commission :**

Government of India has many programmes for Social and Economic upliftment of women in India. Perhaps apart from agriculture KVI Sector is the only field where mostly women from rural area are employed. Further in India women literacy is very low and they cannot be engaged in high technical field in industries. Further they cannot go beyond their surroundings and villages to work outside. A plan could be worked out with Women Welfare Commission to develop some schemes which can be jointly implemented through out the country.

##### **b) SC/ST Corporation :-**

The KVIC has formulated some schemes in collaboration with the corporation but still it is not fully exploited and more resourceful for benefit of the Scheduled Caste and Scheduled Tribe people working in the rural area. KVIC can establish more vital linkage in respect of trainings and other development scheme.

##### **c) Linkages with international organisations :-**

There is enough scope for adopting appropriate technology to enhance the profitability of unit and opening of avenues for employment of un-educated and educated unemployed youth in India, various developed nations in Europe and other international organisations can be of help for transfer of this appropriate technology.

##### **d) Guide :-**

Development of Cottage/Village/Tiny Industries suffers often from lack of careful and critical consideration of important factors such as availability of skills/technical competence, commercial

vailability etc. New entrepreneurs tend to get into business/enterprises which are perceived as lucrative even when they do not have expertise in the specific field. These rural entrepreneurs require support in certain critical areas. Often the newly established enterprises in the rural areas find growth and even survival difficult because they are unable to tune their production and service activities to meet on existing or emerging demand. This in turn is owing to the fact that they do not have access to market information or consultancy services for product diversification, process, improvement etc.

The Khadi and V.I. Commission has already initiated action in this regard under the guidance of S.F.A.C. Ministry of Agriculture. Meetings has been held and it has been agreed that the KVIC training centres will act as nodal agencies having a pool of experts in various Village Industries, particularly agrobased. As and when demand to offer necessary consultancy to institutions will be made, they will provide the same with reasonable charges, a part of which will be kept as commission for nodal agencies. If implemented successfully the training centres will be benefited in both ways i.e. Income Generation and enhancing the reputation of the training centres.

e) Gram Swadesh Yojana :-

Recently Maharashtra Government has started Gram Swadesh Yojana by which the village will be self sufficient. At the initial stage, they have selected few villages and plan to develop those villages by creating self employment opportunities through adoption of local technology and processing of locally available raw materials in an eco-friendly manner. Enough money for implementation of the scheme has been provided. The Khadi and V.I. Commission having necessary skilled man power and expertise in creating self employment opportunities by utilising local raw materials can tie-up with Maharashtra Government and tap the resources and so also providing employment to the rural masses.

f) Data-Bank :-

Khadi and V.I. Commission has made experiment on numbers of low cost, simple eco-friendly adaptive technology for common man. A united bank on the same may be kept at each and every training centre and these data's can be utilised as a resource material for selling in Indian market as well as in other countries.

g) Bio-gas scheme :-

In India, most of the rural populace used wood as fuel which cause maximum damage to environment. A bio-gas system may play boon to them, a training centres's may play a massive role to propagate such scheme by offering following benefits.

## B I O - G A S P L A N T

Cooking gas, Rich manure, Light, Power, Tube well

## HUMAN RESOURCE DEVELOPMENT

The change is needed in the training directorate to look over not only imparting of technical training but also the staff/officers development by improving their technical and managerial skills and upgradation of knowledge, settlement of trained manpower, redeployment and entrepreneur approach of rural target groups and post training activities which has to be constantly monitored.

### Vocational Education

Providing self-employment opportunities is an important measure for reducing the unemployment problem in rural sector. In this context, vocational education plays an important role for equipping the rural people to take up self employment. The Khadi and V.I. Commission having necessary expertise and net work of training centres can well make liaison with vocational education programme.

The KVIC is having 96 industries including service industries and in each group number of training programme is run by the different training centres which are either directly related to self employment or daily wage employment. The details of course infrastructure and its curriculum may be worked out with the Directorate of Vocational education and training and other institutions engaged/implementing the schemes such as **Central Board of Secondary Education** to induct various training programme in different stages of education. Some of the courses are suitable to S.S.C. level and some of them are at the stage of 10+2 level. This will be beneficial to our organisation in two forms (1) To enhance reputation of our courses run by different training centres. (2) Provide automatic recognition of reserved courses through H.R.D. Ministry. The major area under which KVIC and above said agencies may initiate action are,

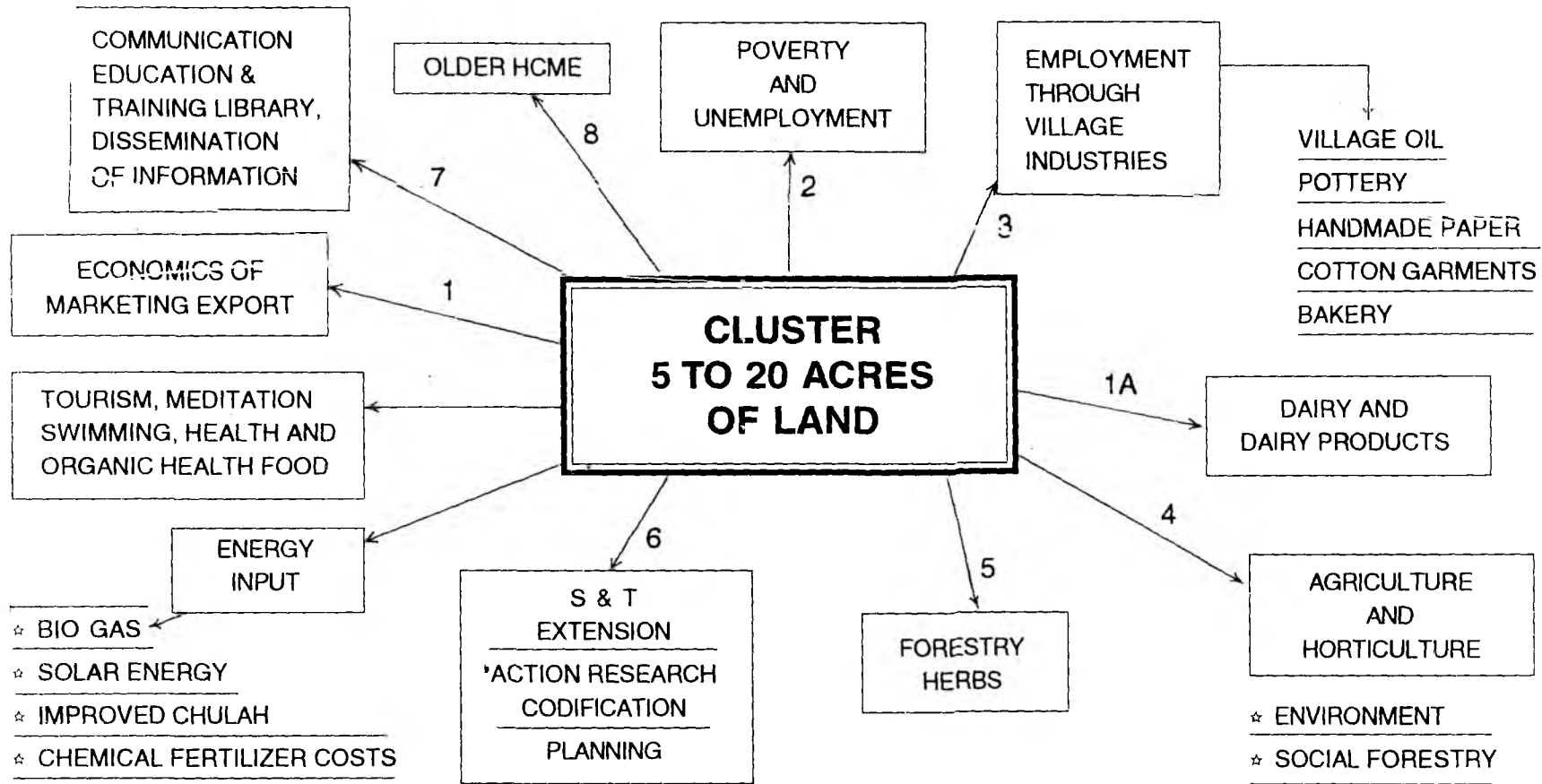
- 1) Curriculum Design.
- 2) Instruction Material.
- 3) Evaluation (theory and practical).
- 4) Availability of teachers.
- 5) Selection of courses - job linked and self employment.
- 6) School-industry linkages.
- 7) Vertical mobility.
- 8) Strengthening of CBSE for effective implementation - assistance under centrally sponsored scheme.

(1) The design of curriculum for the courses run by the training directorate may be modified. This organisation is already having curriculum along with instruction material. The same instruction material and curriculum may be modified and re-designed as per suitability of the organisation.

In some of the courses that patent curriculum is not available which will be gathered and may form in a booklet.

Regarding evaluation and availability of teachers, as KVIC is already running these courses with experienced teachers and full flow of practical and theoretical facilities may be interlinked and be extended to those organisations.

## CLUSTER APPROACH FOR DEVELOPMENT



SELF-SUPPORTING INTEGRATED RURAL DEVELOPMENT

"HAVE FRUITS—NOT ROOTS"

## PROBLEMS OF VOCATIONALISATION

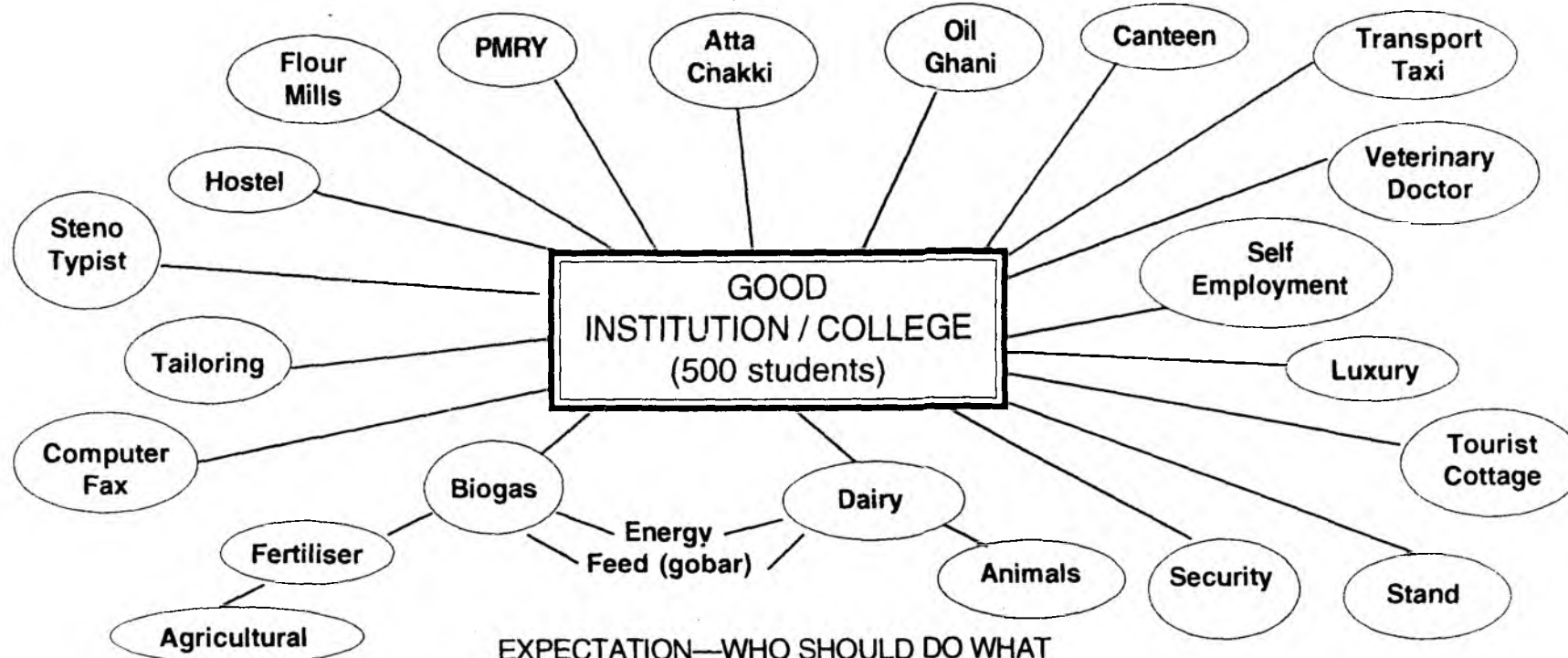
Vocationalisation of Education has to encounter a number of problems before it becomes a reality. The most outstanding of these are :

- Lack of physical facilities and equipment for providing actual training.
- Lack of resource persons.
- Paucity of funds.
- Social apathy to vocational education at the school stage.
- Negative social attitudes towards mechanical and purely technical jobs.

In view of these problems systematic efforts have to be made to evolve strategies for vocationalisation of education.



DEVELOPING ENTREPRENEURSHIP FOR CONSTRUCTIVE 'SELF-HELP' THROUGH NGO'S  
IN WARDHA DISTRICT ON GANDHIJI, VINOBAJI AND DR. KUMARAPPASI'S LINE



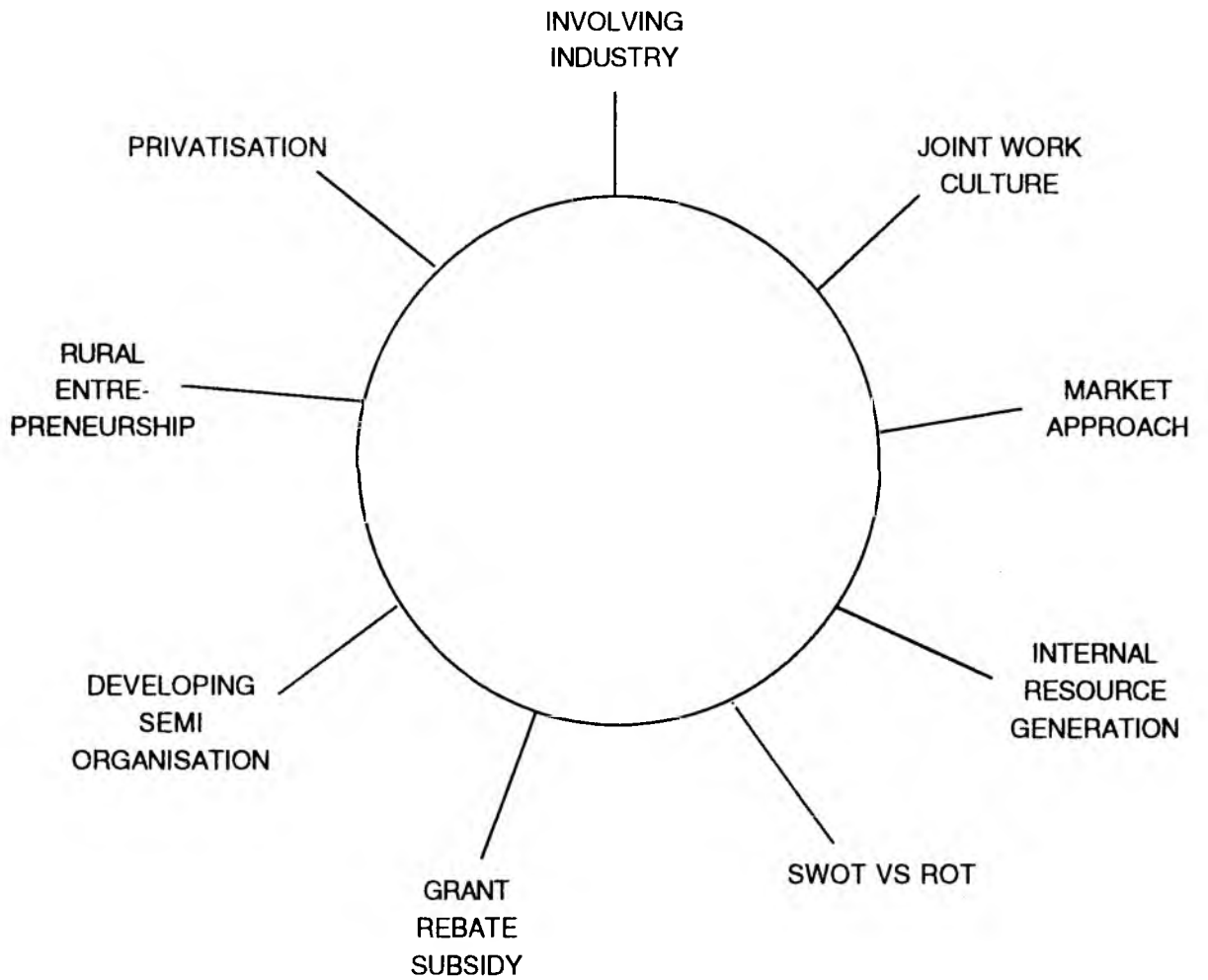
EXPECTATION—WHO SHOULD DO WHAT

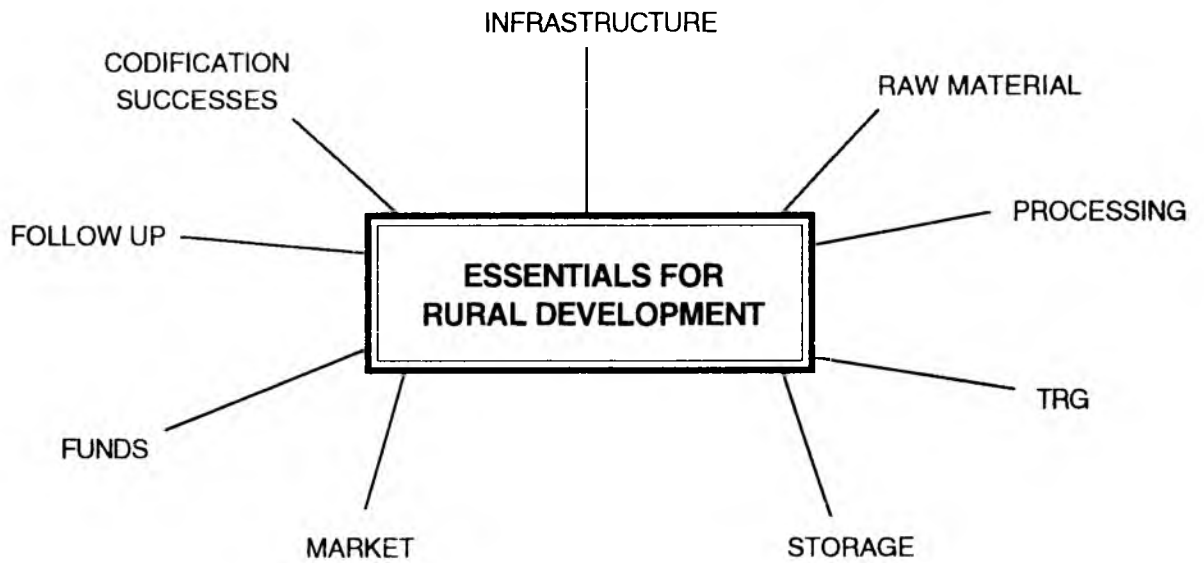
KVIC / KVIB	G.M.D.I.C.	D.R.D.A.	INSTITUTION / N.G.O.s	SC/ST CORPORATION	INSTITUTION GRAMS
<ul style="list-style-type: none"> <li>• Identification of Good Institutions</li> <li>• J.B.C.R. / PCPI / HMP Leather / CANDB / Biogas and Project Making</li> </ul>	<ul style="list-style-type: none"> <li>• Loan</li> <li>• Project making</li> <li>• Financing</li> <li>• Clearance from various state govt agencies</li> <li>• Training</li> </ul>		<ul style="list-style-type: none"> <li>• Mother role</li> <li>• Marketing fully or partially</li> <li>• Training</li> <li>• Moitorying</li> <li>• General Organisation Supervision</li> </ul>	<ul style="list-style-type: none"> <li>• Funding</li> <li>• Training</li> <li>• Distribution of funds</li> </ul>	<p>(Village) College act as an umbrella and will co-ordinate the shown programme under the scheme / finance of :</p> <ul style="list-style-type: none"> <li>• IRDP</li> <li>• SC/ST money scheme</li> <li>• Seed money scheme</li> <li>• Women development organisations</li> </ul>

*The aim of vocational education should not be as much to make the student job-worthy as to equip him with skills necessary for self-employment through a modest entrepreneurship. This is particularly necessary because job-orientation can be a fickle mistress and may leave one high and dry, inspite of his accomplishment, because of lack of opportunities.*

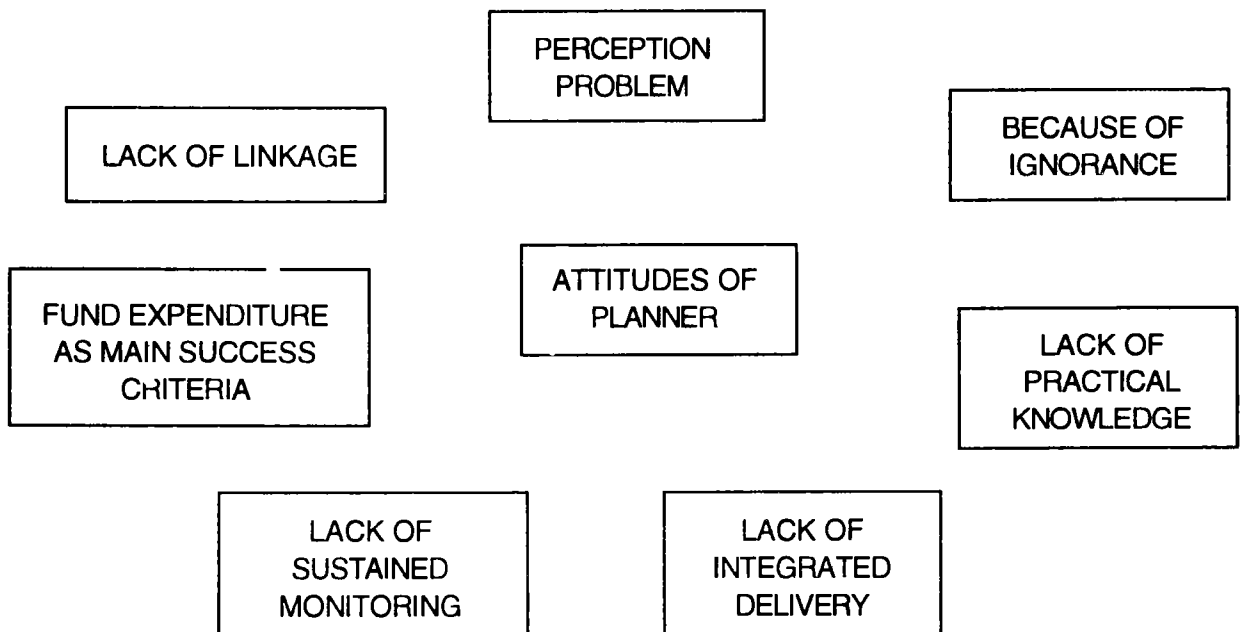
**Dr. Madhuri Shah**

# FUTURE ACTION PLAN





## CHART





## 4. ACADEMIC PAPERS

- Designing of Curriculum in Vocational Education.
- Evaluation of Students' Progress in Vocational Education.
- Selection of Vocational Courses.
- Availability of Teachers.
- Vertical Mobility +2 Vocational Graduates under the Vocational Education Programme.

## 4.1 Designing Curricula in Vocational Education

Dr. Prabhakar Raizada, Ex. Fa. NCERT, New Delhi

### INTRODUCTION

The first requisite for successful vocational education programme is a scientifically constructed course of study. Although a course of study is necessary for all instructional areas, it is of even greater significance in situations where **manipulative processes** are involved. Further more manipulative operations require a certain sequential order of performance. Therefore, teachable content must have a logical and methodological manner of presentation. Without good instructional organisation, learning is likely to be haphazard and ineffective. In fact 50% of good teaching is careful planning.

The duration of courses may vary from one to three years but a majority of them are courses of two years duration. According to the national recommendation 70% of the total instructional time should be devoted for teaching vocational subject. The rest would be allocated to the study of languages and the general foundation course. The component of on-the-job training is also visualised as an integral part of curriculum. The vocational courses are grouped under six major areas—namely, **Agriculture, Business and Commerce, Engineering and Technology, Health and Para-Medical, Home Science, Humanities and Miscellaneous.**

A curriculum is an orderly arrangement of integrated subjects, activities and experiences which students pursue for the attainment of specific goals. Curriculum includes all the learning experiences which children and youth have under the direction of the school. Every thing done in the school adds up to the total curriculum.

Therefore, there should be a planned effort to identify elements of curricular planning—community, industry, examination body, administration, teacher, students, instructional material, evaluation techniques and equipment, etc. The community, the industry, the administration and the subject specialists identify the aims and objectives on the basis of task analysis. The educational administrators, the subject specialists and teachers translate these aims into a course of study. The teachers design and provide learning experiences to the students. Formally or informally all the parties are to be involved in curriculum development process.

### CURRICULUM DESIGN PROCESS

There are three stages in curriculum development design stage, development stage and evaluation stage. The components of a course of study include a number of points, such as (1) an introductory statement, (2) scope of the vocation, (3) duties and tasks, (4) task analysis, (5) course objectives, (6) subject areas, (7) study and evaluation scheme, (8) course content and syllabus, (9) list of books, (10) space, equipment and material requirement, (11) staff requirement and (12) establishment for collaborative arrangements.

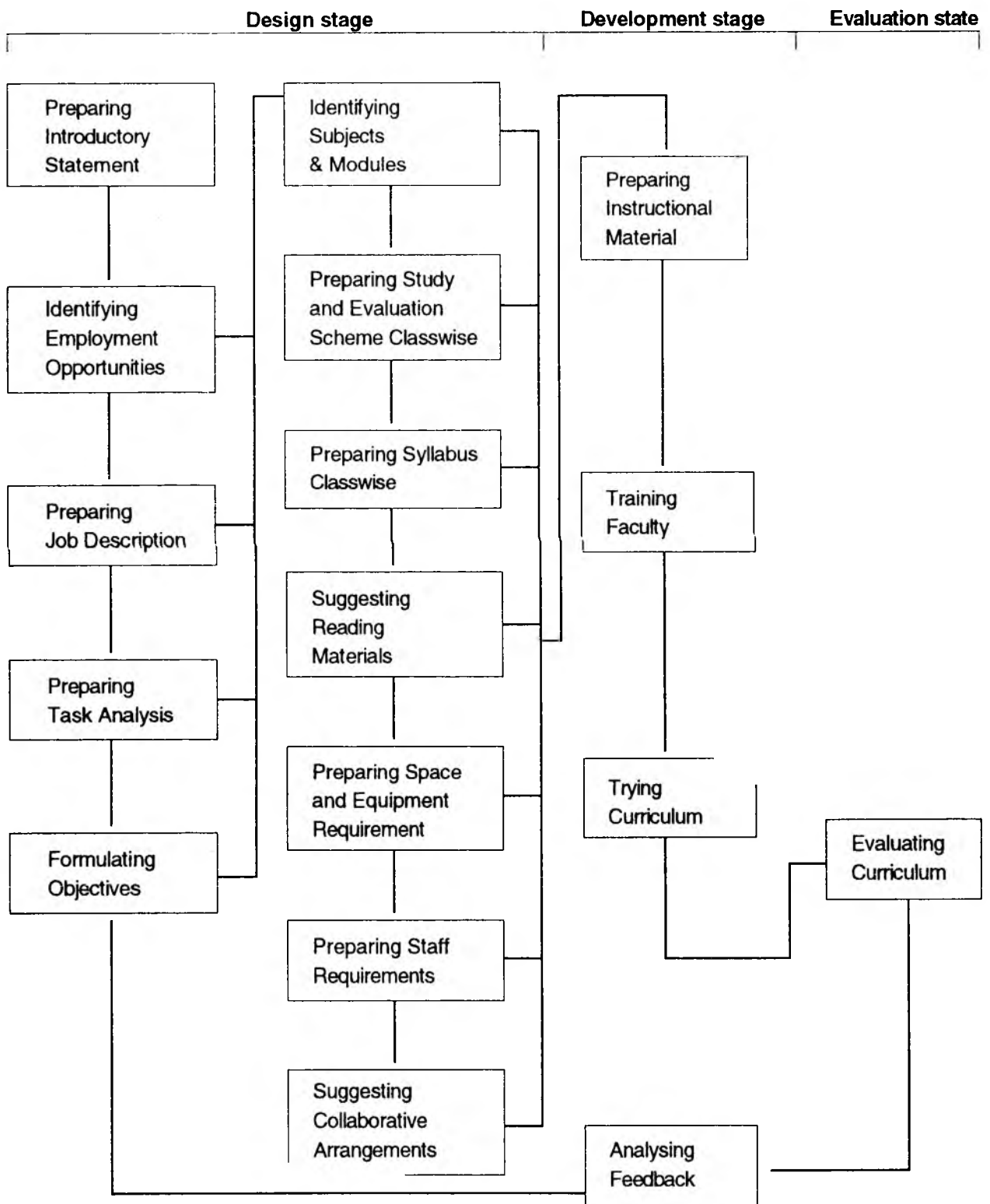


Fig. Schematic representation of the various stages in Curriculum Development



The development stage includes three steps— (1) preparing instructional material, (2) training faculty and (3) trying curriculum. The evaluation stage is concerned with critical examination of the curriculum in terms of objectives for which these courses were designed.

In the design stage, the important points may be discussed in detail.

1. General Introductory statement for a course : The introduction statement should be expressed in terms of general importance and prospects of the course and the admission requirements if any of the course.
2. Job opportunities : List of openings or avenues which are available under wage employment or self-employment after completing the course should be prepared.
3. Job Description : The jobs listed under 2 above should be described in terms of frequently performed duties and tasks.
4. Task Analysis: The task described in para 3 should be analysed in terms of knowledge, skill and personality traits in the following proforma:

Tasks	Knowledge	Skills	Personality Traits
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5. Specific Objectives: The specific objectives are to be derived from task analysis and should specify the competencies to be developed in the students in the area of knowledge, skills and personality traits. Each objective should be expressed on the basis of observable changes in pupil behaviour.
6. Subject Areas: The subjects to be taught are identified on the basis of specific objectives and competencies. The subject-matter is to be divided into a number of smaller segments called core and elective modules, each of which covers a specific body of knowledge and skill, is self contained and can be learned independently of other segments. The core modules are common in a particular vocational stream and elective modules are specifically designed to cover a specific vocational course.
7. Study and Evaluation Scheme : The syllabus structure should be given year-wise in a tabular form with subjects, number of papers, periods per week theory and practice, examination scheme theory and practice and total. The course content should be essentially based on job analysis. It should facilitate the realisation of objectives formulated for the course. The theory and practice should be closely linked with each other. On-the-job training should be organised after first year examination for a period of four weeks in any relevant organisation collaborating institutions. The students will be evaluated by vocational teacher and competent authority of the enterprise/organisation. A systematic plan of action should be prepared well in advance in consultation with collaborating agency. The examination scheme should include 600 marks for 6 papers and 100 marks for OJT.

8. **Course content and Syllabus:** As mentioned above the subject-matter and practicals should be derived from task analysis—knowledge column for theory and skill column for practicals. There should not be any exception to these guidelines. There are 3 theory papers and 3 practical papers in each class theory and practice in classes XI and XII. Time allocation should also be done after assessing the time-need of each unit.
9. **Suggested Reading Materials :** A comprehensive list of books and reading materials should be provided mentioning title, author, publisher, year of publication, price, etc.
10. **Space, Equipment and Materials:** The requirement should be worked out for a class of 20 students. Special requirement like typewriting lab or dummy bank, its layout etc., list of equipments and consumables are to be worked out in detail. The space may be in the form of workshop, lecture hall, store room and staff room.
11. **Staff Requirement:** The academic staff requirement is as follows:  
**For Full-time Teacher/Lecturer:** There will be one full-time teacher for each class having masters degree in the subject concerned or graduate degree with minimum of two years experience. For paramedical and technical courses the minimum qualification should be graduate.  
**For Part-time Teacher/Lecturer:** The different aspects of the jobs of any vocation necessitate education from different socialists in their specific professional fields. These specialists should be utilised to act as part-time teacher for available durations as per requirement (one part-time teacher at a time per class). The minimum qualification should be graduate with 5 years experience.
12. **Establishments for collaborative Arrangements:** For conducting practicals or for organising OJT, or for placing students for wage employment or for involving experts a comprehensive list should be prepared. The agencies should be approached by the principal and vocational teacher concerned.

(For examples see Appendices A, B, C, D, E, F, G, & H)

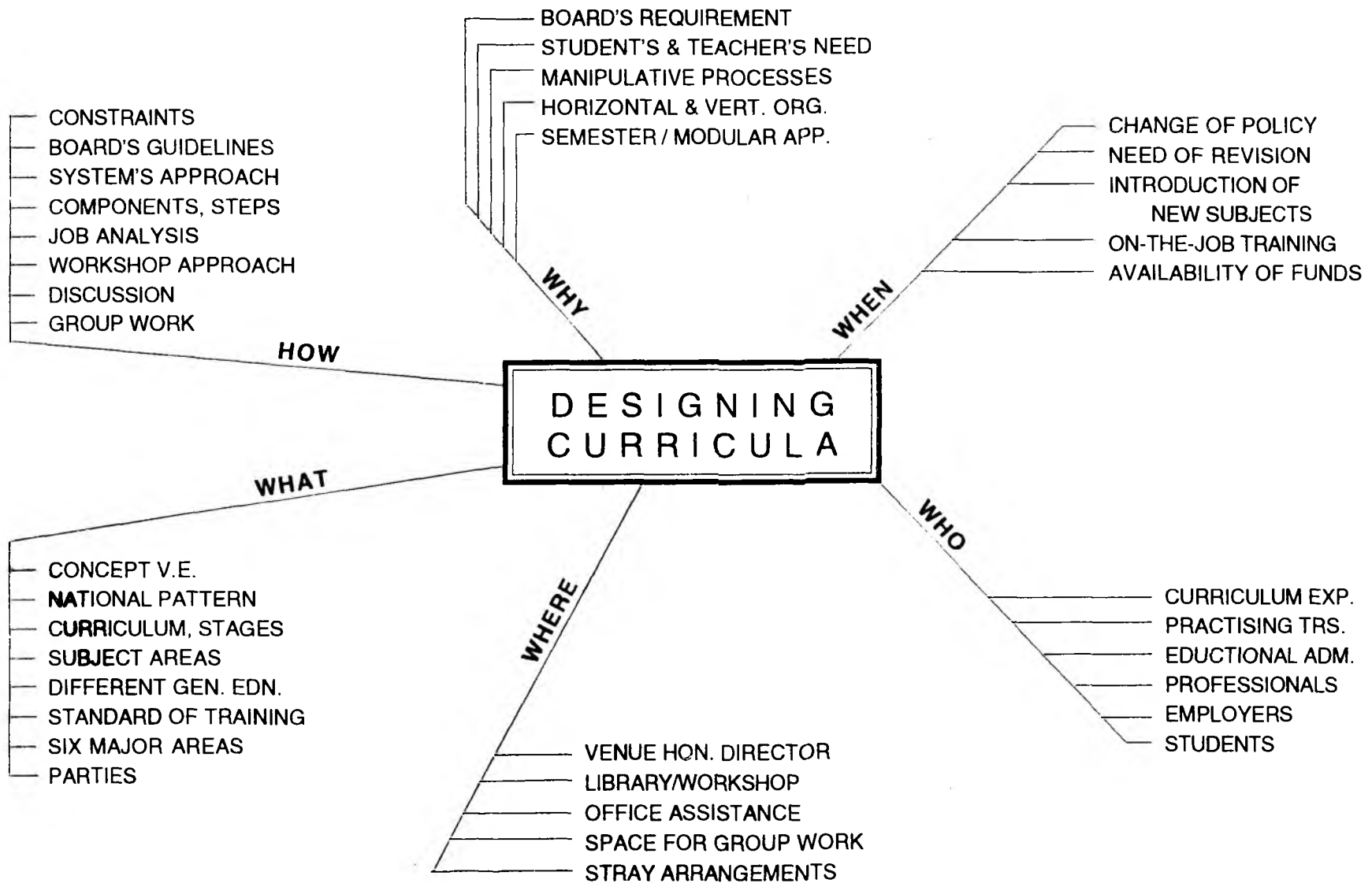
The examples are from Competencies Based Modular Curriculum 'Banking Assistant Course designed by NCERT.

## CONCLUSION

If vocational curricula are to have any value, they should be based on sound and practical principles. Effective teaching depends on many factors, but unless a teacher is able to organise instructional material into worth-while educative experiences, many of these factors will lose their potentialities. The curriculum and syllabi are developed on the basis of course objectives. The objectives are derived on the basis of frequently performed duties in a vocation and knowledge and skill required for all tasks and sub-tasks involved. The syllabus structure is to be given year-wise in a tabular form with compulsory subjects like languages and general foundation course, vocational subjects (3) with theory and practice and on-the-job training. The subject-matter to be

included may be classified into distinct units and sub-units. The courses may be in the form of core and elective modules. The syllabus should neither be too heavy nor too light. It will be convenient if the curricula contain guidelines on reading material, equipment, staff and collaborative arrangements. The constitution of Courses Committees should include employer, experienced field expert (worker), curriculum planner, practising teacher and educational administrator and not the general education experts from the University. The curriculum planning process is the same for all vocational areas — **Agriculture, Commerce, Home Science, Technology, Para-Medical and Miscellaneous.**

Now the time has changed. The parents and society at large have become cost conscious. They often ask the question, if a course is not working well, why have it? And they are justified in asking this.



# DEVELOPMENT OF INSTRUCTIONAL MATERIAL FOR VOCATIONAL COURSES

## OUTLINES

- Need
- Present Position
- Definition, Types and Qualities
- Evaluation of the Effectiveness
- Guidelines :
  - Approaches
  - Considerations
  - Mechanism
  - Format
  - NCERT Norms of Payments
  - CSS — 100% Grant  
Workshop Approach
- Qualities of a Good Vocational Textbook

**PROFORMA FOR  
IDENTIFICATION OF INSTRUCTIONAL MATERIALS**

Vocational Course .....

Subject .....

Class .....

Learning Unit	Content/Topic	Learning Activity	Instructional Material / Sources

## QUALITIES OF A GOOD VOCATIONAL TEXTBOOK

1. Does the Textbook cover all the topics?
2. Are the explanations clear and simple?
3. Are the illustrations clear and attractive?
4. Does the presentation confirm the principles of skill building?
5. Does it contain sufficient work assignments?
6. Are the authors recognised leaders in the subject?
7. Is the material set up to provide for individual differences?
8. Are the mechanical production standard of the book high as to binding, paper, language, style, size, readability of type and so on?
9. Is the copy appealing to a student?
10. Have the modern developments in the subject incorporated?

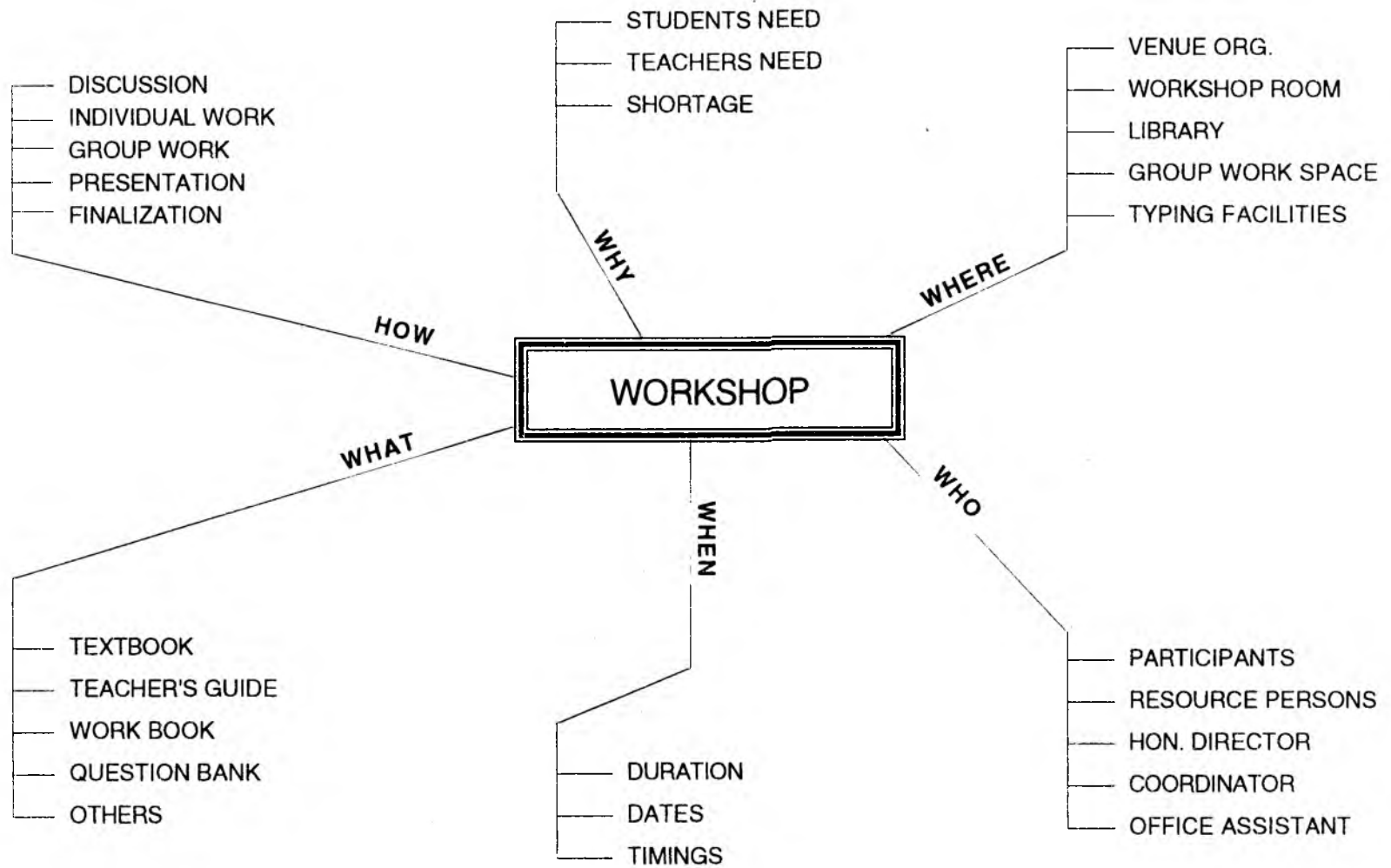
## FORMAT FOR DESIGNING TEXTBOOKS

- Chapter Title
- Outline of Contents
- Introduction
- Presentation : Theory and Practice Step-by-step with Practical exercises, their solutions, Illustrations, Diagrams.
- Summary
- Students Activities
- Material for Extended Learning
- Evaluation Exercises
- References

## PLAN OF ACTION AT THE STATE LEVEL

- Identify Agency
- Provide Management System
- Fix Responsibility
- Select Courses
- Decide Nature of IM and Medium
- Appoint Chief Coordinators
- Identify Coordinators Subject-wise
- Identify Authors/Experts Subject-wise
- Coordinator to Prepare :
  - List of Topics/Chapters
  - Format
  - One Sample Chapter
- Organise Preliminary Meeting :  
Finalise List of Topics, Format and Chapter Contents, Distribute Topics (One topic to two experts)
- Give 2 to 4 weeks time for original writeup
- Coordinator collects the Material
- Organise Review Workshop : Phase—1  
Finalise First Draft
- GET CYCLOSTYLED
- Try out and Collect Suggestions
- Organise Workshop for Final Draft Reviewing and Editing
- Printing / Cyclostyling





**SCOPE OF VOCATION (Employment Opportunity)**

**1. Clerk**

A clerk may be required to perform the jobs of —

- i. Clerk-cum-Cashier
- ii. Clerk-cum-Godown Keeper
- iii. Clerk-cum-Typist

**DUTIES TO BE PERFORMED UNDER EACH JOB (Job Responsibilities)**

**JOB: CLERK**

1. Operation of Savings A/c
2. Operation of Current A/c
3. Operation of Term/Recurring Deposit A/c
4. Collection of Inland Bills/Cheques
5. Handling of Inland Remittances
6. Dealing with loans and advances
7. Attending to Clearing House Functions
8. Attending to other Customer Services
9. Attending to Maintenance and Housekeeping duties.

**JOB: CASHIER**

1. Receiving Cash
2. Payment of Cash
3. Exchange of Cash

**JOB: GODOWN KEEPER**

1. Pledge Duties
2. Delivery Duties
3. Maintenance Duties

**JOB: TYPIST**

1. Typing of letters and documents
2. Typing of Proformas and Statements
3. Filing and Recording
4. Handling of Telex and Fax machines

**JOB ANALYSIS: (Identification of Knowledge, Skills and Personality Traits)**

JOB : Clerk

DUTY: Operation of Savings Bank Account

Sl. (1)	Tasks (2)	Knowledge (3)	Practice/Skill (4)	Personality Traits (5)
1.	Opening of Savings Bank Account	Knowledge regarding definitions and functions of a bank	Filling/verifying of various account opening forms	— Neatness
2.		Meaning and importance	Verifying the introducer's signature	— Accuracy
		Type of Accounts—Single, joint, minor and illiterate	Filling the pay-in-slip	— Courtesy
		Banking Terms	Processing pay-in-slips and opening account in the ledger	— Helping attitude
		Pay-in-slip and its uses	Preparing passbook for customer	— Promptness
		Passbook and its importance	Entering chequebook in the cheque book issue register	
		Procedure followed upto the time of first deposit and after the first deposit	recording details of cheque book issued in the ledger account Indexing the account opening forms	

**COURSE OBJECTIVES :****I. KNOWLEDGE OBJECTIVES****To develop knowledge and understanding of :**

evolution of banking, role of banks in the socio-economic development of the nation, bank customer relationship, deposit accounts, vouchers, safe deposit vault, travellers cheques, general section, negotiable instruments, clearing house activities, remittances, communication, loan and advances, foreign exchange, functions of cash department, house keeping godown management, accounting, typewriting and computer literacy.

**II. SKILL OBJECTIVES****To enable the students to attain proficiency in :**

handling of deposit accounts, filling forms and vouchers, making entries in pass book and books of accounts, making corrections and balancing, calculation of interest, verification of pay-in-slips, preparation of term deposit documents, attending standing instructions, handling operation of lockers, travellers' cheques, handling negotiable instruments, mail handling and general office work, scrutiny of cheques and negotiable instruments, remittances inward and outward performing clearing house functions, basic communication systems, processing loan and advances, computing and managing foreign exchange, performing duties in cash department, writing day book, tallying accounts, sending periodical returns, maintaining godowns, writing accounts, performing typing, telex and fax duties and utilising computers in banking.

**III. PERSONALITY TRAITS OBJECTIVES****To enable the students to develop traits like:**

neatness, accuracy, courtesy, promptness, commonsense, fluency in speech, cooperation, concern, honesty, integrity, carefulness, efficiency, keen sense of observation, speed, helpfulness, coordination, dependability, quick decision, pleasantness, timeliness, judgement, patient, willingness, methodical, thrift, following directions.

SUBJECT AREA:

**MODULARISATION OF BANKING ASSISTANT COURSE**

**CORE MODULE** : (Common to all Commerce-based Courses)

- CM 1 Business Communication
- CM 2 Accounting
- CM 3 Typewriting
- CM 4 Computer Literacy

**ELECTIVE MODULE** (Only for Banking Assistant Course)

- EBA 1 Elements of Banking
- EBA 2 Deposit Accounts
- EBA 3 Preparation of Vouchers
- EBA 4 Safe Deposit Vault
- EBA 5 Miscellaneous Office Functions
- EBA 6 Negotiable Instruments
- EBA 7 Clearing House
- EBA 8 Remittances and Travellers' Cheques
- EBA 9 Loans and Advances
- EBA 10 Foreign Exchange
- EBA 11 Handling Cash
- EBA 12 House Keeping
- EBA 13 Godown Management

**STUDY AND EVALUATION SCHEME:****STUDY SCHEME****CLASS XI (Semester I & II)****COURSE: BANKING ASSISTANT**

Sl. No.	Subject	Periods per week		Periods for one year year (30 weeks)		Total periods per year
		Theory	Practical	Theory	Practical	
1.	Elements of Banking & Deposit Accounts	4	5	120	150	270
2.	Preparation of Vouchers Safe Deposit Vault & Negotiable Instruments	4	5	120	150	270
3.	Accounting, Business Communication Typewriting&Computers	3	6	90	180	270
4.	On the job Training	(Dummy bank)				

— Practicals are to be conducted in the School Dummy Bank

**EVALUATION SCHEME****CLASS XI (Semester I & II)****COURSE: BANKING ASSISTANT**

Sl.	Subject	No. of Papers		Max. Marks allotted		Total Marks Allotted
		Theory	Practical	Theory	Practical	
1.	Elements of Banking & Deposit Accounts	1	1	100	100	200

2.	Preparation of Vouchers Safe Deposit Vault & Negotiable Instruments	1	1	100	100	200
3.	Accounting, Business Communication Typewriting & Computers	1	1	100	100	100
4.	On the job Training (Dummy bank)	1			100	100

— Practicals are to be conducted in the School Dummy Bank

**COURSE CONTENT : SYLLABUS****CLASS : XI****ELEMENT OF BANKING AND DEPOSIT ACCOUNTS****Paper I : Theory**

- EBA1 1 **BANK AND BANKING:** Evolution of Banking, meaning and definition of bank. Functions of commercial bank, structure of banking industry (types of banks) as Reserve Bank of India, Commercial Banks, Industrial Bank, Regional Rural Bank, Cooperative Bank, National Agricultural Bank for Rural Development (NABARD), Export-Import Bank of India (EXIM), Foreign Bank, Indigenous Banks, Scheduled/non-Scheduled Banks, Nationalised/non-Nationalised banks. Role of banks in modern economic social development.
- EBA1 2 **BANK AND CUSTOMER:** Banker customer relationship, general nature of the relationship, Kind of services provided to customers, Need for improved services to customers, various aspects of providing quality services, kinds of customers, Introduction of customers—meaning and its implications.
- EBA1 3 **DEPOSIT ACCOUNTS:** Meaning, features, types of deposit accounts, Procedures of opening an account—Saving, term, recurring and current account. Deposit mobilisation and its importance.
- EBA1 4 **SAVING BANK ACCOUNT:** Meaning, importance, Opening a SBA, operation of account, saving accounts for different types of customers-individual/single account, joint a/c, minor's a/c, Account for illiterates, accounts for non-trading concerns, closing of an account, settlement of balance deceased's account. Calculation of interest product-wise.
- EBA1 5 **CURRENT DEPOSIT ACCOUNT:** Meaning, importance, opening of current account, operation of the account, current accounts for different types of customers—individual, joint, sole-proprietory, partnership firm, Private and Public limited companies, societies, Trusts Accounts, Club Accounts etc., Miscellaneous instructions, transfer and closing of accounts, Service charges.
- EBA2 6 **TERM DEPOSIT ACCOUNT:** Meaning, features, procedures for opening fixed deposit a/c, T.D.A. rates and periods, calculation of interest, payment on due date, renewal of deposit a/c, payment before due date, short term deposit, transferring of TDA.
- EBA2 7 **RECURRING DEPOSIT ACCOUNT:** Meaning and advantages of R.D., entries in books of accounts, calculation of interest, RD amounts payable after various terms.



## ELEMENTS OF BANKING AND DEPOSIT ACCOUNTS

### Paper II - Practical

Note: Establish Dummy Bank. The Practical should be as near as the actual work performed in a bank.

- EBA2 1 **SAVINGS BANK ACCOUNT:** Filling account opening form, verification, specimen signature card, entry in account number book, verification of pay-in-slips, entry in scroll cashbook, scrutinize the cheque book, requisition form, withdrawal forms, minors declaration form, defective cheques, writing of ledger folios, balancing of ledger, Index book, Passbook, entry in cheque book issue register, preparing intimation letter to customers, entry in cash payment book, preparing debit voucher and credit vouchers, cheque returning memo, entry in cheques returned register, record of stop payment order, posting of outward clearing cheques in the ledger, calculation of interest transferring an account from one branch to another, closing of accounts and settlement of claims in the case of a deceased's account.
- EBA2 2 **CURRENT DEPOSIT ACCOUNT:** Verify whether the procedure laid down are followed at the time of opening a CDA, CDA opening form, ledger folio for CDA, entry in passbook, preparing vouchers (clearing) transfer and cash, entry in ledger, pay-in-slips, handling ways of deposits and withdrawals, entering stop payments order in appropriate receipts, issue of cheques, return of unpaid cheques, balancing of ledgers, preparation of statement of accounts, handling of standard instructions.
- EBA2 3 **TERM DEPOSIT ACCOUNT:** Verification of account opening for, preparation of FDR, recording due date, Calculation of interest on FDR, payment of interest, keeping record in FD register and ledger, preparation of vouchers for interest amount, payment of FDR's, renewal of FDR's, payment before due date, duplicate FDR, transferring to another branch.
- EBA2 4 **RECURRING DEPOSIT ACCOUNT:** Preparation and use ready reckoner for calculation of amount payable, scrutinise RD pay-in-slip, RD a/c opening form, entries in registers, ledgers and passbooks, RDA register, passbook folio, posting of interest in ledger with the help of table for computing interest, procedure of withdrawal, handling overdue accounts and premature payments, issue of duplicate passbook when the original is lost.

## STAFF REQUIREMENT

- I. 2 Full-time Teachers
- II. 2 Part-time Teachers

### QUALIFICATIONS

#### For Full-time Teachers:

Post-graduate in Commerce/Business Management with Banking as a subject of study or specialisation. (Preferably with B.Ed. degree)

#### For Part-time Teachers:

- i) Field experts working as bankers having Diploma in Banking or qualified CIIB examination with 5 years experience,
- OR
- ii) Graduates working in banking industry having a minimum of 5 years experience in supervisory capacity.
  - iii) Bank-Branch Manager with a minimum of one year experience.
  - iv) Retired Bank Personnels.
  - v) Qualified Computer-expert.

**ESTABLISHMENTS FOR ADMINISTRATIVE ARRANGEMENTS**

1. All Commercial Banks
2. Cooperative Banks. (District and State level)
3. Reserve Bank of India
4. Regional Rural Banks
5. Industrial Development Bank of India (IDBI)
6. Bank staff training colleges/centres
7. Indian Institute of Bankers (IIB) and sub-centres
8. Indian Bank's Association
9. Employment in Banks in summer vacation (on stipend)
10. Practising CAs (Chartered Accountants)
11. Professionals from commercial / industrial establishments who are dealing in finance functions.

## 4.2 EVALUATION OF STUDENTS' PROGRESS IN VOCATIONAL EDUCATION

Dr. Prabhakar Raizada, NCERT, New Delhi

### INTRODUCTION

One of the most important responsibility of, vocational teachers is that of testing students progress and evaluating the effectiveness of training programme. Evaluation in Vocational Courses is a specialized job. In addition to theoretical knowledge it is essential to evaluate the performance and personality characteristics. Skill development is not instant rather it happens over a period of time. The question is- what evaluation strategy should be adopted for vocational courses? Whether it should be continuous internal evaluation or external examination with sessional work or internal evaluation with provision for review by an external examiner?

The NCERT studies reveal that the system of evaluation adopted for vocational courses in different states is still the traditional one. There is no systematic arrangements for continuous evaluation in vocational courses. Though internal tests are held but there is no systematic record of internal assessment. There is a need to finalise a uniform internal assessment system for vocational schools throughout the country. The National Policy on Education 1986 has suggested drastic changes and gradual reforms in the system of evaluation of students' progress.

### NEED AND IMPORTANCE

Evaluation is an essential part of the teaching learning process. Evaluation identifies defects and failures. It indicates possible changes in policies and actions. It enables the teacher to distinguish between the helpful and harmful factors.

Evaluation in vocational education is necessary to judge the students' progress and diagnose his difficulties. It is essential to predict his special abilities, interests and aptitudes. It is also through evaluation that vocational teachers' work is checked. It reveals the values of methods, procedures, techniques, materials and equipment being used and where. They should be improved and supplemented. It gives directions to the vocational teachers in constructing tests and evaluative devices. Thus, evaluation is useful both for the vocational teacher and the students. It motivates good teaching. Vocational and educational guidance can be given on the basis of evaluation. It makes the individual differences clear. Through evaluation changes can be brought in the vocational curriculum. It is for quality control.

### CONCEPT OF EVALUATION

Evaluation is now a widely used word in education circles. The term 'evaluation' involves measurement which is confined to an examination of students' performance. To evaluate is to determine the value or worth of something.

Evaluation in VE is the process of collecting evidence of quantity and quality of learning theoretical and practical skills. For the vocational teacher, evaluation is the measurement of his class-room and laboratory/workshop instruction. Evaluation in VE should be a continuous process. When it is frequent, it is easier for the vocational students to apply corrective measure to improve their weaknesses.

Evaluation is the process of determining how much progress students are making towards the achievement of goal set for them in a course. Important differences exist between evaluation of general subject and evaluation of skill subject. In a skill subject we are mainly concerned with manipulation skills and not merely with theoretical knowledge. All the vocational subjects are mainly skill subjects.

For a long time 'written examination' has been the only method for assessing students. This narrow concept has been meant only the measurement of the student's mastery of the subjects through his memory power.

"Measurement and appraisal" are the two principal elements in evaluation. Measurement is the objective and exact part of evaluation which can be definitely ascertained and accurately measured. Appraisal is the process of evaluating intangible characteristics, attitudes and understanding etc. It rests upon observation and interpretation and finally upon subjective opinions.

It is also necessary to understand the terms 'external' and 'internal' evaluation. In many of the vocational courses, the final examination is totally external, wherein neither the teacher nor the principal, who knows the students, examine him. Some unknown outside examiner is invited with the right and responsibility to examine the students finally. The modern trend in our country is to give more and more weightage to internal assessment.

There are certain principles which can help the vocational teachers in making good programme of evaluation-

1. Evaluation must be done in terms of the purposes of the vocational programme.
2. Evaluation is a continuous process.
3. Evaluation should be carried on as an integral part of instruction.
4. A variety of devices and techniques should be used.
5. Information collected through various devices should be put to use for remedial teaching.
6. Evaluation should be sufficiently challenging.
7. It should contain proper weightage to cognitive, effective and psycho-motor aspects.
8. It should be carried on as a cooperative process.

Evaluation can be put to different uses, for example as a basis for awarding marks, a motivation device, determining class progress, identifying learning difficulties, providing guidance, supervising teacher's work, as a research device and ascertaining success or failure of a method of teaching. The main purpose of evaluation is to form the basis for remedial instruction.

## **MODERN TRENDS**

- Evaluation is used for both academic non-academic subject areas. There is a shift in emphasis.
- from periodical evaluation to continuous evaluation.
- from fewer techniques to variety of techniques.
- from limited uses to its wider uses
- from measurement of achievement to improvement
- from marks to grades.
- from overall grades (division) to subject-wise grades.
- from the need to clear the examination at one stroke to clear by parts (semester system)
- from irreversibility to reversible results ( to improve and revise the division)
- from limited coverage of the syllabus to its effective coverage
- from the use of one form of questions (essay type) to the use of variety of question forms.
- from fewer question to large number of questions
- from one examiner to joint examiner
- from liberal to strict super-vision (unbailable cognisable offence)
- from overall options to limited options
- from vague questions to specifically worded questions
- from subjective scoring to objective scoring ( Through detailed marking scheme)
- from one set to multiple set question papers
- from with out books to open books examination.

The National Policy on Education 1986, the centrally sponsored scheme and Programme of Action documents of Government of India has given highest priority to vocational education and examination reforms.

## **THE SALIENT FEATURES**

The salient features in measuring the students progress are why to evaluate, what to evaluate, who to evaluate, how to evaluate and when to evaluate.

Why to evaluate? One of the important reasons for evaluation is of 'passing judgement' on the student to 'pass' or 'fail' him. The teacher uses certain evaluative tests to know students and when to evaluate.

Why to evaluate? One of the important reason for evaluation is of 'passing' judgement' on the student to 'pass' or 'fail;' him. The teacher uses certain evaluation tests to know students strengths and weaknesses.

A good vocational school uses certain admission tests at the time of giving admission to students. This is called 'diagnostic testing'

What to evaluate? The scope of evaluation in VE includes students academic achievement, skills and personality traits. Thus evaluation, is becoming more and more comprehensive, assessing all the aspects.

Who to evaluate? For evaluating students' progress in VE a number of persons are involved such as-vocational teacher, principal, internal and external examiners, industry supervisor and the employer who provides OJT facilities. The examinations are either internal or external.

How to Evaluate? The vocational teacher uses variety of tools and techniques to suit the needs of varying situations. there are many devices such as oral test, written tests, performance test and observation.

When to evaluate? Evaluation in VE should be a continuous process. Tests are to be conducted after every operational stage. In this continuous evaluative process proper weightage is given to practical work, periodical tests, performance tests, product and process evaluation, class assignments, project work, development of personality traits and other abilities.

An ideal programme of evaluation should have eight qualities validity, reliability, continuity, diagnostic quality, motivational quality, objectivity, practicability and simplicity. Weightages are assigned for the different aspects, such as—

Knowledge and understanding	25%
Attainment in Skill	50%
Extra Proficiency in Skill	5%
Dignity of Labour	5%
Initiative	5%
Planning in Advance	5%
Co-operative Attitude	5%

A good test in a skill subject should be easy to score. It should allow the use of 'key marking' so that all the essential features of an expert performance are checked automatically and without subjectivity. Proper techniques should be used for 'process and product evaluation'. Sometimes evaluation is done when practical work is in progress, i.e. at the time of external examination. For this purpose technique check sheet may be used. In evaluating a finished product also similar variables may be identified. A well finished product should be evaluated as first rate; but if the time, energy and money put into its production are excessively high, the student's performance should be rated as low.

## **DEVICES AND TECHNIQUES**

A variety of devices and techniques are to be used to get a complete picture of students' progress. The changes in students' achievement and skill occur over a period of time and, therefore no single appraisal can tell us completely of the change. One of the more important types of tests involving subjective and objective measurement is the comprehensive test which includes oral questioning, written work and practical performance. The oral part of the test is designed to reveal interests and attitudes towards the vocation. The written examination is used to measure the individual's familiarity with information. Written tests may be of four types—essay,

short answer, objective and testing through assignments. The aspects of effective domain (i.e., personality traits) are judged through observation. The objective tests are—completion type, true and false type, matching type and multiple choice type. Performance tests are used to find out the quality and extent of practical skills attained by the student.

(See Appendices A, B, C and D)

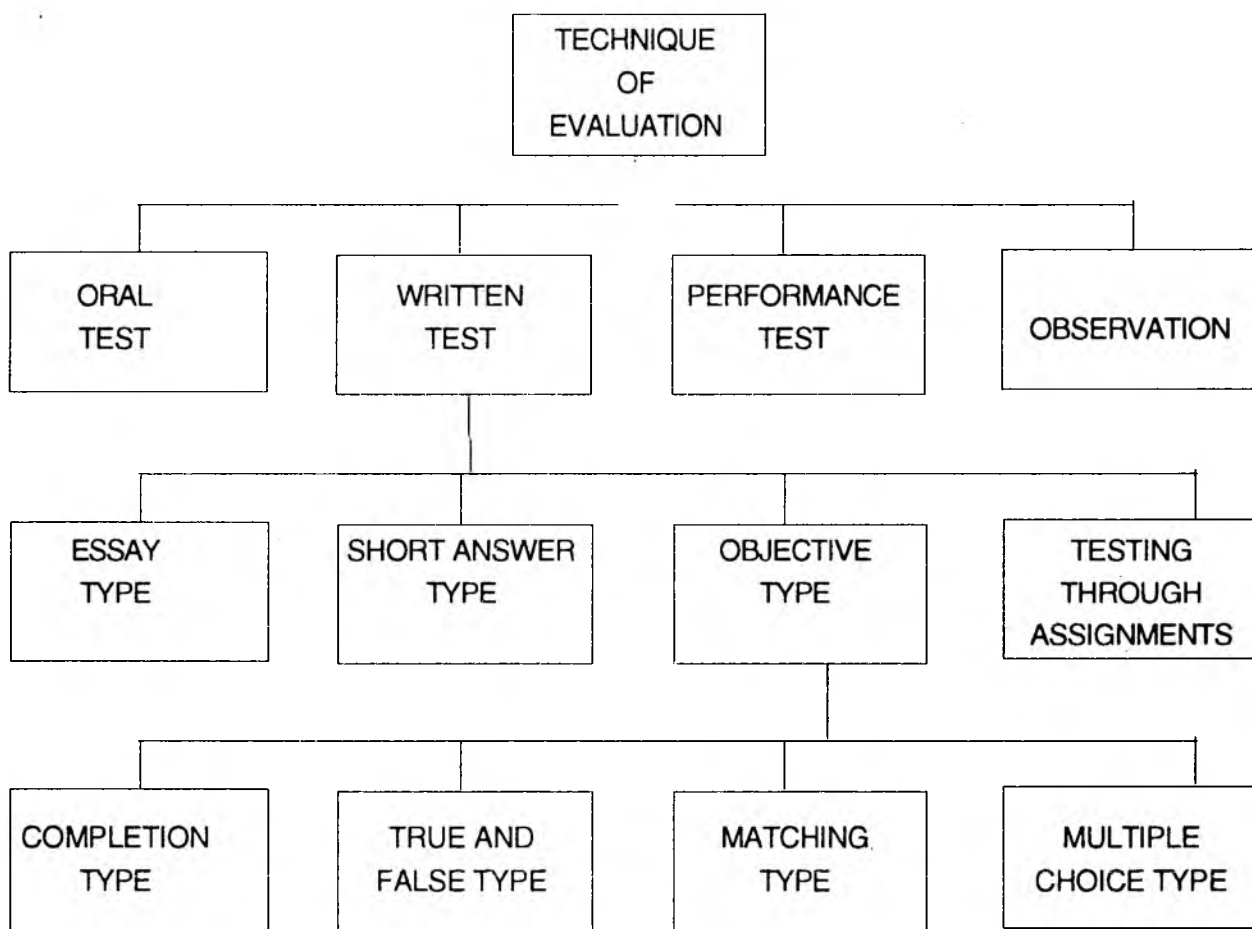


FIG. DEVICES OF EVALUATION

### EVALUATION RECORDS AND REPORTS

Class tests and records must be treated systematically if they are to be of service to the teacher. Certain records are, of course, a compulsory part of the teacher's school duties. An annual plan of evaluation may be prepared. Once the plan of action has been put into operation, the work may be controlled mainly by the use of 'progress chart'. Entry is made on the chart after every test. The chart is divided into the number of weekly assignments the student is required to complete through out the term and each week is allotted one set of work to be completed. The



chart indicates the progress made with these numbered sets of work. A student's personal file should be maintained for each student including previous scholastic records, health records, observations of personality traits and the result of aptitude and performance tests. In the same way attendance record of students should be kept accurately, day by day. This is the requirement of certain boards of secondary education also. Students' progress report, achievement records, placement file and cumulative record card are other examples. Apart from teacher's record, each student may be asked to maintain cumulative record card. The students make necessary entries in the card with the help of the teacher after completing every unit. In the end the teacher should also record his observations.

The evaluation record should be simple so that they may not consume the time of the pupils and teacher in lengthy paper work.

## **CONCLUSION**

Evaluation of students' progress is the process of determining how much progress, if any, students are making towards the achievement of goal set for them in a vocational course. The main objective is to diagnose students weaknesses and provide data for remedial teaching. In VE evaluation should be a continuous process. A variety of techniques should be used to get a complete picture of students progress, e.g., oral test, written test, performance test and theoretical and practical assignments, class tests and records must be treated systematically, if they are to be of service to the teacher such as progress report, students progress chart, annual plan of evaluation, cumulative record card, teachers diary, record of internal assessment, record of admission tests, record of practical work and projects, students placement record, etc. It is expected that in evaluation of students performance **paramount importance should be given to skill development.**

An evaluative criteria should be prepared for evaluating both process and product evaluation. At the +2 level, under the vocational stream a bold attempt has to be made to **dispense with the public examination system** and to adopt a system of continuous evaluation.

**CRITERIA FOR THE ASSESSMENT OF STUDENT'S PERFORMANCE**

**1. Attitudes, work habits and work ethics**

- Willingness to work
- Ability to work with others
- Neatness and orderliness
- Regularity of attendance
- Honesty
- Inventiveness
- Pleasant disposition
- Responsibility
- Respect for authority
- Punctuality
- Thrift
- Risk taking activities

**2. Skills**

**2.1 General work performance**

- Motivated
- Works consistently
- Monitors own performance
- Organises own work area
- Cares for tools and equipment
- Receives and follows instructions
- Takes decisions independently

**2.2 Work quality**

- Works accurately
- Discovers his own errors

**2.3 Work quantity**

- Achieves speed
- Express interest in own productivity
- Seeks means to increase output

**2.4 Work Process**

- Draws appropriate plans
- Implements effectively
- Copes with problems faced during the process
- Follows safety regulations

**STUDENT'S ASSESSMENT SHEET**

(Process Evaluation)

Name of the Student ..... Course ..... Class .....

School/College .....

**RATING****REMARKS**

1. **Adopting correct posture**  
A B C D E
2. **Methods and techniques used**  
A B C D E
3. **Enthusiasm for learning**  
A B C D E
4. **Organising work practice**  
A B C D E
5. **Presentation of work**  
A B C D E
6. **Cooperation with fellow workers**  
A B C D E
7. **Observation of time schedule**  
A B C D E
8. **Handling of tools and equipment**  
A B C D E
9. **Proficiency in terms of productivity**  
A B C D E
10. **Know-how of tools and raw materials**  
A B C D E
11. **Discipline during work practice**  
A B C D E
12. **Over-all Rating**  
A B C D E

Signature of the teacher/  
Implant Supervisor

**CUMULATIVE PROGRESS CHART**

Name ..... Class ..... Year .....

Evaluation on 5-point scale

---

Job Skills	1st Week	2nd Week	3rd Week	4th Week
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

---

Teacher/Instructor .....

**ON-THE-JOB TRAINING PERFORMANCE RECORD**

Student ..... School ..... Subject .....

Industry Address ..... Supervisor .....

**Scale:** 1. POOR      2. SATISFACTORY      3. GOOD      4. V.GOOD      5. EXCELLENT

PERFORMANCE

FIRST

SECOND

MARKING PERIOD

MARKING PERIOD

**Job Skills**

1      2      3      4  
I WEEK II WEEK

1      2      3      4  
III WEEK IV WEEK

.....

Quickness to learn

Quantity of work

Quality of Work

**Communication:**

Listening Skills

Verbal Skills

Written Skills

**Cooperation with:**

Supervisors

Public

Attendants

**Personality :**

Enthusiasm

Responsibility

Initiative

Appearance

Courtesy

Job Competence : I Period ..... Date .....

II Period ..... Date .....

Signature of the Implant Supervisor .....

## 4.3 Selection of Vocational Courses

Dr. M. Sengupta, NCERT, New Delhi

### Introduction

A rigorous implementation of the programme of Vocationalisation of education as visualised in NPE 1986 is possible only if all decisions including the selection of proper and need-based vocational courses are taken on a rational basis based on research/data base as also on present realities and future needs. In response to national priorities the CBSE has already introduced a number of innovations in this field and has taken several well thought out steps to make the programme viable, acceptable and also forward looking. Therefore, at this crucial juncture it is necessary to take a stock of the situation not only for consolidating the gains but also to make the process of introducing vocational courses more systematic and well planned so that the scheme becomes more useful and attractive to the specific clientele of the schools affiliated to CBSE.

Needless to emphasise that much of the success of the scheme depends on right choice of vocational courses. At the micro level it is imperative to make a reasonably accurate assessment of locally available and emerging occupations and the employment potential in the region/district for identifying training needs and the facilities available for healthy collaboration. Such research-based data will also be useful in planning curricula, locating courses in suitable schools and providing infrastructural facilities, recruiting proper teachers etc. The choice of courses should be as objective as possible keeping in view the following criteria.

- The courses should have assured demand in the job market for either self or wage employment.
- The courses are fairly attractive for the target group of students in terms of earnings or possibility of earnings they offer to the graduates of these courses.
- The necessary collaborative arrangements could easily be made for on-the-job training, apprenticeship and inviting part-time teachers.
- The infrastructural facilities would be easy to create and would not require heavy investment.

### National Recommendations

The mother document 'Higher Secondary Education and its Vocationalisation' states: "Much thought has to be given to vocations for which facilities have to be provided and to selecting schools where these vocational courses should be provided...how should the vocations which are relevant to a particular locality be studied on a continuing basis and be reflected in the choice of courses?....One will have to take into account the productive and commercial activities in the area

namely, the types of trade agricultural production and movement of commodities, ancillary activities such as workshops, construction works, educational research and developmental instructions in the area, etc. The set of vocations likely to come up in the immediate future would be most important and they can be taken into account if the State Plan proposals pertaining to districts concerned are known. Besides the vocations which may be based on the existing activities, it should be possible to think of other profitable and productive ventures which may be undertaken in that area for the well-being of the community and the growth of economic activity. The ideas of appropriate technology, labour-intensive and employment-generating cooperatives and small-scale enterprises may be given concrete shape in proposing activities for a group of districts or a region...."

The Melcolm Adiseshiah Committee Report 1978 largely endorsed the guidelines given by the above document. Regarding the conduct of vocational surveys prior to the launching of the scheme the report said, "the purpose of such surveys was to make reasonably accurate estimates of manpower requirements in the area, the range of available occupations, the trend of emerging vocations, the details of the level of competencies needed, the approximate duration for which such competencies may be in demand, the extent to which educational and training facilities are available in the neighbourhood to provide the required competencies."

The POA 1992 maintains: "It is essential that knowledge and skills acquired have relevance to self and wage employment, and should be based on an assessment of the market opportunities and potentialities."

An All India Workshop on VE Programme, 1993 suggested: "In the selection of vocational courses, Industry Associations may be regularly consulted. In specific areas, individual industries, both public and private may be formally associated in the running of such courses and could be asked to make available their resources of manpower and other facilities for vocational training needs". It further states "A proper assessment should be made of the requirements for the service sector in various areas and for self employment opportunities in the rural areas. In particular, vocational courses may be designed for women to enable them to find opportunities for self employment."

The centrally sponsored Scheme maintains: "Every selected school would offer 3-4 vocational courses in selected areas so that the vocational wing in the school is a viable unit and in order to provide desired flexibility of choice to students in keeping with their aptitude interests and abilities. Since the vocational courses are aimed to reduce the mismatch between demand and supply, it is imperative that students are trained in such occupational areas wherein self or wage employment opportunities are assured. For making a start, the selection of vocational courses could be on the basis of past surveys, registrations in employment exchanges, and a general assessment of manpower needs made under district developmental plans. List of Courses prepared by NCERT could also be kept in view." It further states: "Area vocational surveys, however, are sophisticated exercises which require a great deal of technical expertise. A team of experts would, therefore, be identified in the SIVE/SCERT at the State-level who will organise

these district vocational surveys. Some other capable group/organisation could also be entrusted this task. The data will be subjected to periodic review and will be updated at least once in five years. In these surveys, use may also be made of manpower projections at Central level in the areas of Health, Banking, Tourism, Electronics, etc.

### **Broad Implications**

Maintenance of a high pace of economic growth demands a qualitative transformation in the work-force. It requires a manpower equipped with high degree of skills in widely diversified fields. The need for precisely segregated skills is being replaced by the requirements of a workforce possessing a wide range of skills and knowledge. It seems to be important today that the labour force should be versatile enough to move from one skill to another at least within a sphere of allied skills. Such a need is perceived since several empirical studies show that among this trained workers there is a fairly high proportion of workers who are ultimately found in occupations other than those for which they had received technical training. This obviously leads us to the conclusion that the type of vocational education and practical training imparted at the school level should be broad based to enable workers to find suitable employment within a fairly wide range of allied occupations. More specific training and experience is better obtained on the job.

In the backdrop of a mixed economy, globalisation and democratic polity, even with the most sophisticated techniques of manpower planning it is hardly possible to forecast with great accuracy the precise need for specific skills. The best way for insuring against imbalances between training imparted and demand for them may be to have a manpower trained in a manner that can easily switch within a group of allied occupations. The principle of versatility gains significance due to fast pace of emerging skills and innovations.

Another point which requires attention and is also borne out by empirical evidence is that the degree of labour mobility is broadly related to the level of educational attainment in a positive direction. For example for highly qualified manpower, possessing expertise and training of the top level, even the national frontiers do not present barriers to mobility. But those having educational attainment up to the +2 level by and large prefer to seek job opportunities in their immediate neighbourhood. This is more so in case of girls who are increasingly opting for gainful employment. Therefore, since a good proportion of these students are likely to aspire for jobs in their immediate vicinity, it is not too inappropriate to attempt to tailor skilled manpower supply at the district level to suit the local pattern of requirements.

The aim of vocational education therefore, should be to produce not fully trained people but trainable and employable people equipped with basic skills, knowledge and personality traits that will enable them to learn quickly any of a variety of specific jobs within a fairly wide range of related occupations suited to the particular individual's ability and interest.

In devising vocational courses for the different occupational groups, one has to relate these to the skill and knowledge content of each occupation. It is often observed that more often than not some elements of skill and knowledge content of a set of allied occupations are common. Hence



at this educational stage it would be imperative to put a great deal of stress on those vocational courses which can serve as common core for more than one occupation in order to increase the versatility and adaptability of manpower to a comparatively wide range of occupations. In addition to the common core courses, each student could have one or more courses pertaining to skills and knowledge needed for specific occupations. In this context the reorganised modular course pattern as evolved by the NCERT can be usefully utilised by the CBSE in evolving its own set of courses.

At the completion of +2 stage intensive on-the-job training could be imparted in greater depth for more specific skills through apprenticeship scheme.

From a regional point of view and keeping in view the specific needs of CBSE affiliated schools courses which emerge feasible would fall into two broad categories namely region neutral and region specific courses. Region neutral courses are those basic vocational courses which are likely to be needed almost everywhere irrespective of variations in the natural resource base or the economic structure of different districts. Examples of such courses can be Salesmanship and Marketing, Pre-School Teacher Training etc. In contrast there will be courses which are more prominent in districts of some states than in other states. These region specific courses reflect some special features of a district in terms of its occupational structure or dominant economic activities. Examples of such courses can be Construction Technology or Forestry.

### **Issues for Discussion**

- In view of the scattered locations of CBSE affiliated schools what strategies should be adopted to select suitable courses for a school?
- How can the Regional Centres of the Board assist in this task?
- Should the courses to be introduced be region specific courses based on the district vocational survey conducted by the State or these should mainly be region neutral courses based on State/Central manpower assessments?
- In either case who will collect the relevant information and decide for the specific course(s) to be introduced in a CBSE affiliated school? Is there a need to have a small cell at the Board level for (a) collecting manpower projections from various sources, (b) collating the information and suggesting courses institution wise. What role will be played by the Principals of respective schools in selection of courses? Should the courses selected be mainly wage employment or self employment oriented? Are there any more possibilities of approaching big employers for sponsored courses?

## Rigorous Implementation Possible if Decisions taken on :

Selection of Courses	Rational Basis
Identification of Needs	1) Based on Research /Database
Location of Courses	2) Present Realities
Selection of Students	3) Future Needs
	4) Possibilities of Healthy Collaboration

### CBSE

Introduced Innovations : Taken several steps to make Programme: Viable  
Acceptable  
Forward Looking

Eg.:

Sponsored courses, Revision of curriculum, Formation of Curricular Groups, Introduction of pre-vocational courses in selected schools, streamlining Work Experience Programme.

At this crucial juncture, it is necessary to take stock of the situation for:

- a) Consolidating the gains.
- b) Making the process of introduction more systematic and well planned.
- c) Making the scheme more useful and attractive to specific clientele of CBSE schools.

Much of the success depends on RIGHT CHOICE of vocational courses.

At the Micro-level, it is necessary to make reasonably accurate estimate of :

AVAILABLE OCCUPATIONS, EMERGING OCCUPATIONS, EMPLOYMENT POTENTIAL, TRAINING NEEDS AND FACILITIES

### NATIONAL RECOMMENDATIONS:

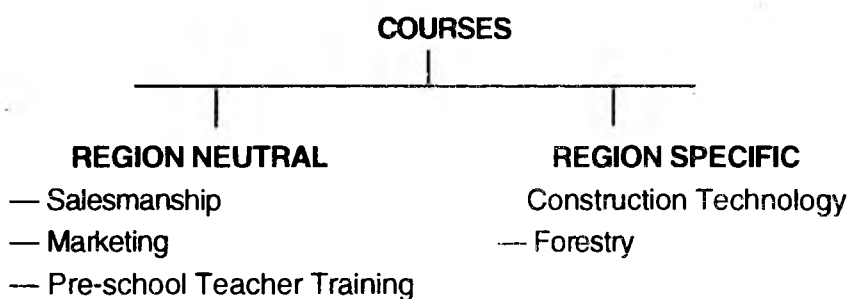
- Productive and commercial activities in the area
- Other profitable and productive ventures (well being of the community and growth of economic activity)
- Knowledge and skills acquired:  
must have relevance to SELF and WAGE employment  
should be based on :  
Assessment of Market Opportunities and Potentialities.
- In selection of courses, industry associations may be regularly consulted.
- Individual industries—public and private may be formally associated.
- Proper assessment be made of requirements in the SERVICE SECTOR.
- Self employment opportunities in Rural Areas/particularly for girls..
- Selection of vocational courses could be on the basis of :

Past surveys, registrations in employment exchanges, general assessment of manpower needs under district development plans.

— Data be updated periodically.

### **IMPLICATIONS:**

1. High pace of economic growth demands a qualitative transformation in the work force.
2. Labour force should be versatile enough to move from one skill to another at least within a sphere of allied skills.
3. Education and training imparted should be broad-based to enable suitable employment within a fairly wide range of allied occupations.
4. More specific training and experience is better obtained on the job.
5. Principle of versatility will ensure against imbalances between training imparted and demand for them.
6. Degree of labour mobility is related to the level of educational attainment.
7. Vocational education should produce trainable and employable people with basic skill, knowledge and personality traits to enable them to learn quickly any of a variety of specific jobs within a fairly wide range of related occupations suited to individuals' ability and interests.
8. Re-organised modular course pattern having core and specific skills developed by the NCERT can be utilised by the CBSE for evolving its own courses.



### **CRITERIA FOR SELECTION OF COURSES**

1. Assured demand in job market—self or wage
2. Attractive to the target group of students
3. Availability of collaborative arrangements
4. Availability of infrastructural facilities
5. Apprenticeship cover
6. Vertical mobility

## ISSUES FOR DISCUSSION

- Strategies for selecting suitable courses for CBSE schools.
- Assistance by CBSE Regional Centres.
- Type of Course:
  - a) Region-specific based on district vocational survey by state.
  - b) Mainly Region-neutral Courses based on State/Central manpower assessments.
  - c) Combination of both.
- Who will:
  - a) Collect information.
  - b) Analyse them.
  - c) Decide coverses Institution-Wise
  - c) Both
- Possibilities of more sponsored courses.
- Role of Principals in selection of courses.
- Should the Selected courses be:
  - a) Mainly for wage employment
  - b) Mainly for self employment
  - c) both.

## 4.4 Availability of Teachers

Dr. M Sengupta, NCERT, New Delhi

### Introduction

The nature of vocational courses and their objectives place special demands on the vocational teachers. They require, in addition to theoretical knowledge an intensive training in practice in actual working situations. They should be well conversant with the special methods of teaching vocational subjects in the classroom and also on the shop-floor, laboratories, farms or factories. One of the important aims of vocational courses is to emphasize the aspects of self employment and entrepreneurship. Therefore, the vocational teachers should also gain competence in this relatively new area. This would enable them to instill in their students the qualities of self confidence, risk taking and entrepreneurship.

Further untrained Master's degree holders especially in the vocational areas of Agriculture, Commerce and Home Science will not be able to do justice with the courses and their transaction mainly because of the purely academic nature of their own university education. Such persons before being absorbed as vocational teachers would require an intensive vocational teacher training programme with adequate pedagogical skills suited to the specific needs of vocational education. Similarly, a proficiency in communication skills, adolescent psychology and teaching techniques for part-time teachers will be very much desirable.

Vocational teachers, to be effective, should have positive attitude of mind towards practical work and handling of typical field problems. They should have a clear understanding of the aim and objectives of the scheme of vocationalisation and its philosophy. They are likely to face during their tenure as vocational teachers a situation where they would require retraining in allied specialisation due to changing nature of vocational courses resulting from the changes in the job pattern.

Unlike academic teachers, the vocational teachers will be deeply concerned with the developments taking place in the world of work. Their role will include among other things, establishing resource centres, providing training through latest instructional techniques, emphasising self learning and evaluation, encouraging creativity among the students, establishing effective and functional school industry linkages, ensuring proper placement of the students and the like. Experience indicates that apart from specific area based competencies the vocational teachers also require a set of general competencies. These may include competencies in the fields of communication, evaluation, foundations and principles of vocational education, guidance, classroom and shop floor instructions, learning theories relevant to the skill development etc.

## **National Recommendations**

NCERT (1976) in its document "Higher Education and its Vocationalisation" recommended that teachers for the vocational subjects should possess basic qualifications and expertise. It has been suggested that part-time teachers and instructors should be freely obtained from amongst those who are in the concerned vocations even though they may not have a master's degree or a teachers' training certificate. The involvements of professional experts in imparting training for skills would bring them into closer collaboration with educational activities and offer them opportunities to appreciate the problems involved in institutional training and the need for the provision of facilities by various industries, agricultural farms, commercial organisations, hospitals and so on. This collaboration would result in a very healthy participation, as a result of which on-the-job training and employment of the trained personnel would generally improve. Regarding the full-time teacher the document states that "full-time teacher with adequate qualifications may have to be appointed to teach as well as to coordinate the work of the part-time staff, and even to locate and identify the need for the part-timers". As regards qualification of full-time teachers the National Document adds that "it is difficult to spell out in greater detail their qualifications without reference to each family of vocations, and without consideration of the availability of persons at the salaries prevalent in the school system. In agriculture, for example, M.Sc. (Agri) degree holders may be available and have only to be trained. In medicine and technology, it is doubtful if MBBS or B.E. degree holders would be available. In commerce again M.Com degree holders will be available." The Document also suggested measures for the training of vocational teachers. According to it, "Special teacher training or orientation programmes will have to be designed, including not only pedagogic training but sometimes training in specific skills and technologies. The part-time staff having highly professional qualifications would also require orientation in instructional techniques and evaluation. The full-time teachers would require periodical retraining to keep themselves abreast of the latest practices."

"Learning to do", the Report of the National Review Committee on Higher Secondary Education with special reference to vocationalisation of education has also to be incorporated in the teacher education curriculum so that the availability of suitable teachers to teach vocational courses may be ensured for the future. For instance, a teacher teaching vocational agriculture must be able to meet the education needs of the farmers and must be equally at home in the classroom, in the farm mechanic shops and in the farms of the community. Besides pre-service education, in-service courses for existing teachers in schools will have to be organised on the mass scale. The universities, the Teacher's Training Colleges, SCERTs, SIEs, NCERT, Board of Secondary Education, Agricultural Universities, institutions like ICAR and all others who are engaged in the programme of orientation of teachers should be actively involved in this task. New demands of education have posed new challenges for the teachers, and it is only through in-service and refresher courses that the teachers can adequately meet the challenges of change.

As per the CSS 1988, vocational courses are to be conducted "with the help of full-time as well as part-time teachers. The full-time teachers are expected to teach as well as coordinate the general organisation of the instruction and also the work of the part-time staff. Regarding qualification of full-time teachers the CSS stipulates that the qualifications of full-time teachers will vary with reference to each group of vocational courses and availability of qualified persons at the salaries prevalent in the school system. Generally, however, a Master's degree will be the basic qualification for selection of vocational teachers. In courses for which post-graduates are not available like Medical and Technological areas degree or diploma will be the minimum basic qualification for the purpose. The part-time teachers, as per CSS will be obtained from amongst professionals in the concerned vocation, even though they may not have formal qualification, e.g., degree/diploma or a teacher training certificate. The collaborating institutions will be the main source of supply of part-time teachers. In addition, retired people from different vocations could be employed on part-time basis.

Recognising the importance of vocational teacher the POA-1992 states that it is the teacher who interprets and implements the education policy in actual classroom situation and as such is the most crucial input. Presently, pre-service training for vocational teachers is practically non-existent; In-service training is not adequate and competent vocational teachers are often not available in desired numbers. Teacher training therefore requires priority attention. The POA stipulates that a phased and well-structured programme of pre-service teacher training will be drawn by the CIVE and implemented in RCE's on a priority basis. In-service courses will be organised by the states in selected professional institutions.

All India Workshop on Vocational Education Programme (1993) suggests that a system of part-time teachers should be introduced where the services of people working in industrial organisations and other establishments could be obtained for imparting training in the vocational courses. The training and other resources available with different departments may be made available to institutions running vocational courses.

### **Availability of Teachers—State Scenario**

In respect of teacher deployment the studies conducted by the NCERT reveal (Mishra AK, Sahodaya, COBSE 1991) that, "There are some states which the entire two years of teaching is presumed to have been completed without appointing any full-time teachers, by deploying only borrowed part-time staff. But on the other extreme there are some states which have appointed only full-time faculty and have not realised the need for having a combination of the two to achieve sound cognitive and skill training."

The Report of the National Seminar on Vocationalisation of Education titled, "Vocationalisation of Education — Achievements in the Seventh Five Year Plan, NCERT (1989) states that, "Two

types of vocational teachers are provided in the CSS: full-time teachers and part-time teachers, one of each in each class. Assam, Bihar and Orissa are running the programme at present only through part-time teachers. Full-time teachers have not yet been appointed. On the other hand, Himachal, Punjab and Haryana provided only full-time teachers. Appointment of unemployed qualified youth as part-time teachers in many states is creating perpetual problems. No sooner they get regular appointment they leave the job. It was visualized that experienced professionals already in their own fields will be utilised to impart needed education and training to the vocational students by serving as part-time teachers. This arrangement serves many purposes: firstly it solves the problem of unavailability of vocational teachers, secondly experienced hands become available with less cost but better return. Besides, students also get acquainted with possible future employers as well as their areas of activities. Further, when the vocational course comes to a saturation point and is closed down less problem is faced for placement of the teachers by the administration."

A subsequent National Seminar organised by NCERT during November 1991 in a similar context stated that "the vocational teacher is the weakest link of the programme. The vocational staff in the schools have not been appointed to the fullest extent as provided in the CSS. Full-time teachers with required qualifications are not appointed in many states. Some states have diverted the existing teachers to vocational stream who do not possess the required qualifications. Some states have managed to get expert teachers from concerned departments on deputation basis for the vocational stream. Diversity is evident in the states regarding the very concept of expertise of professionals, retired experts from the community; some states have appointed fresh unemployed youth as part-time teachers.

The description as given above clearly indicates the need for qualified and professional trained vocational teachers. This is more so because of their changing role in the context of a fast changing vocational world and also the variety of general (vocation free) and specific (vocation related) competencies required by them to effectively and efficiently discharge their duties and responsibilities. Unfortunately so far no pre-service training courses have been launched either at the Central or State levels. In-service training being provided today are by and large orientation programmes rather than being rigorous training programmes in content and pedagogy after systematically evaluating their specific needs.

As a point of fact, in the absence of regular supply system of vocational teachers systematic and well organised in-service training programmes preferably conducted in close collaboration with specialised institutions/universities both in content and pedagogy are absolutely essential. Such programmes may range from minimum of two weeks to a maximum of three months at a time. In some cases these can be in the form of attachment courses as well. Finances should not come in the way of conducting such courses because the same is provided for in the CSS.



### **Issues for discussion on Teacher Qualifications and Deployment of Teachers:**

- Vocational courses are conducted by full-time as well as part-time teachers.
- Full-time teachers are expected to teach and also coordinate the programme implementation.
- Qualification of full-time teachers vary with reference to each group of vocational courses and availability.
- Generally a Master's degree will be the basic qualification.
- Courses for which PGs are not available (like medical and technological areas) degree or diploma will be the minimum basic qualification.
- Part-time teachers are to be obtained from amongst professionals in concerned vocations.
- These professionals may or may not have formal qualifications (degree, diplomas or teacher training certificate).
- Collaborating institutions will be the main sources for supply of part-time teachers.

### **Issues**

- i) Vocational teacher and his status.
- ii) Vocational teacher competencies.
- iii) Concept of full-time and part-time teachers.
- iv) Full-time teacher and his qualifications.
- v) Part-time teacher and his qualifications.
- vi) Prescribing qualifications in respect of different vocational areas.
- vii) Relaxation of qualifications in special cases.
- viii) Deployment of part-time teachers and their source.
- ix) Question of regularisation of part-time teachers and related administrative issues.
- x) Relation between qualification and scale of pay.
- xi) Payment to part-time teachers—amount, periodicity and limit.
- xii) Redeployment of full-time teachers as and when a course discontinues.
- xiii) Promotion avenues for full-time teachers.

### **IN-SERVICE TRAINING OF TEACHERS**

#### **The CSS envisages:**

- Intensive training programmes and periodic refresher courses for In-service teachers.
- A package training programme for part-time teachers.
- Large number of short-term teacher training programmes at Central, Regional and State levels.

## Issues

- i) General competencies of vocational teachers.
- ii) Training needs of vocational teachers.
- iii) Course outlines of training programmes and weightages.
- iv) Teacher educators or Trainers and their training/orientation.
- v) Institutions conducting the training programmes.
- vi) Host organisations having desired resources.
- vii) Norms and modalities of collaboration.
- viii) Duration, mode and methodology of training.
- ix) Sponsoring/Deputation of Teachers.
- x) Training manual, reading materials and training schedule.
- xi) Monitoring and evaluation.

## TEACHING OF GENERAL FOUNDATION COURSE (GFC)

General Foundation Course (GFC) is a compulsory component of all vocational courses at the +2 stage.

- It has two main components namely:
  - i) Environmental Education and Rural Development.
  - ii) Entrepreneurship Development
- Of the 15% time allocated to GFC, 5% has been given to:
  - i) and 10% to ii) above.
- At present no teachers or teaching posts are earmarked for teaching GFC.

## Issues

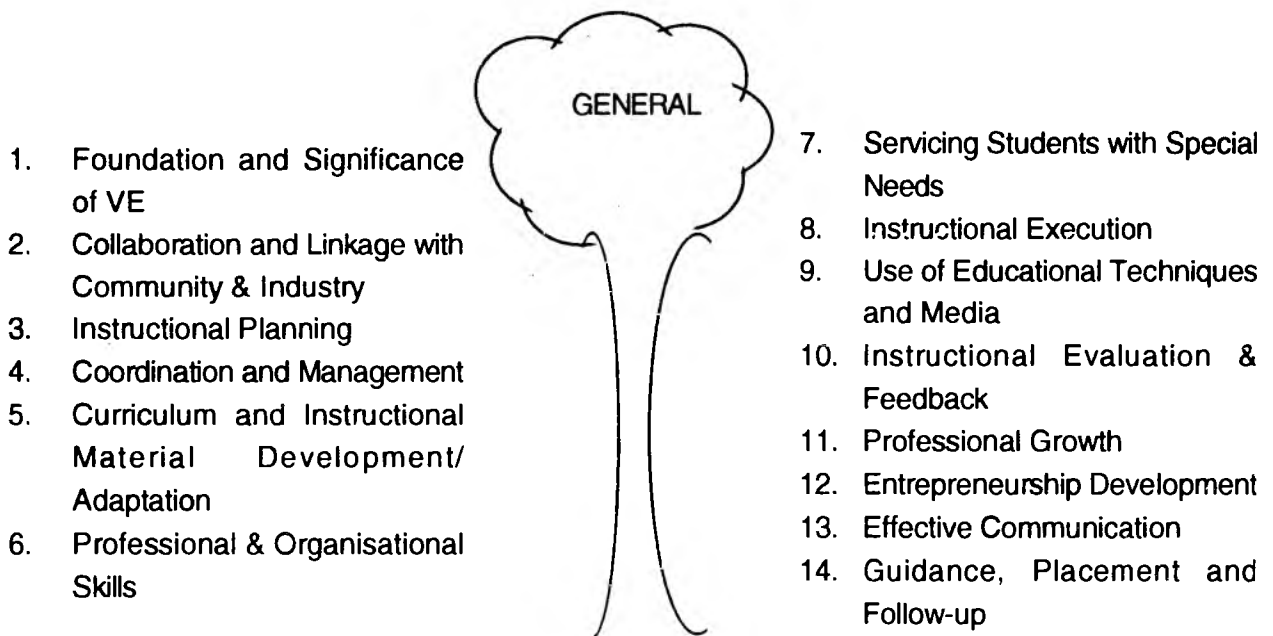
- i) Teacher for teaching GFC and his status.
- ii) Qualifications of GFC Teacher.
- iii) Training and orientation of GFC teacher.
- iv) Work load of GFC teacher and related issues.
- v) Rebate/incentive for teaching GFC curriculum.
- vi) Role of EDIs in preparation of GFC teachers.
- vii) Extended role of GFC teacher for:
  - Self employment to vocational students.
  - Vocational guidance
  - Placement etc.

Roles and functions of vocational teachers undergone transformation due to :

- Compulsions of Advanced Technology
- Changes in pattern and competencies of work force
- Emphasis on self-employment

Vocational teacher is visualised as a :

- |                                 |                                  |
|---------------------------------|----------------------------------|
| — Subject Specialist            | — Counsellor                     |
| — Experienced Practitioner      | — Evaluator                      |
| — Efficient Communicator        | — Motivator for Entrepreneurship |
| — Manager                       | — Coordinator                    |
| — Curriculum and I.M. Developer | — Educator                       |



**NATIONAL RECOMMENDATIONS**

- i) Teacher must possess basic qualifications and expertise.
- ii) Both full-time and part-time teachers

- iii) Part Time teachers from amongst professionals or retired professionals in vocation even if no degree/diploma/teaching certificate.
- iv) Collaboration results in healthy participation.
- v) Part Time teachers would require proficiency in communication skills, adolescent psychology, teaching techniques.
- vi) Full-time teacher
  - Teach and also co-ordinate.
  - Qualification vary with reference to each group of courses.
  - Generally Master's degree is basic qualification.
  - If Post Graduate not available in Medical and Tech, thou degree/diploma. Untrained Master degree holders (Agri. Com., Home Sc.) would require training in pedagogical skills.
- vii) Both pre-service and in-service teacher training programme to be evolved in collaboration with specialised institutions. Presently non-existent or inadequate, orientation vs. training.

## **IMPLEMENTATION IN STATES**

Diversity Evident; No Regular Supply System.

- a) Some states no full time teachers appointed. Only Part-timers, e.g., Assam, Bihar, Orissa. Some others only full-time teachers appointed. e.g., H.P., Punjab, Haryana.

**Need:**— Combination of two for sound cognitive and skill training.

- b) Appointment of unemployed qualified youth as Part Time teachers in many states is creating perpetual problems.
  - Leave job
  - Unite for Regularisation

### **Experienced Professionals in Job**

- Solves problem of unavailability of teachers.
- Experienced hands at less cost.
- Students meet future employers.
- Change in course—no problem of retrenchment.

- c) Some states diverted existing teachers without required qualifications.
- d) Some states got expert teachers on deputation from other departments.

## **TEACHER-RELATED ISSUES**

Teacher qualifications and Deployment of teachers

### **Issues:**

- i) Vocational teacher and his status
- ii) Vocational teacher competencies
- iii) Concept of : Full-time and Part-time teachers
- iv) Full-time teacher and his qualifications
- v) Part-time teacher and his qualifications
- vi) Prescribing qualifications in respect of different vocational areas
- vii) Relaxation of qualifications in special cases.

### **Teaching of G.F.C.**

- i) Teacher for teaching GFC and his status
- ii) Qualifications of GFC teacher
- iii) Training and orientation of GFC teacher
- iv) Workload of GFC teacher and related issues
- v) Rebate/incentive for teaching GFC curriculum
- vi) Role of EDIs in preparation of GFC teachers
- vii) Extended role of GFC teacher for:
  - Self employment to vocational students
  - Vocational guidance
  - Placement etc.

## **IN-SERVICE TRAINING OF TEACHERS**

### **Issues:**

- i) General competencies of vocational teachers
- ii) Training needs of vocational teachers
- iii) Course outlines of training programmes and weightages
- iv) Teacher Educators or Teacher Trainers and their training/orientation.
- v) Institutions conducting the training programmes
- vi) Host organisations having desired resources
- vii) Norms and modalities of collaboration
- viii) Duration, mode and methodology of training
- ix) Sponsoring/deputation of teachers
- x) Training manual, reading materials and training schedule

## 4.5 Vertical Mobility for +2 Vocational Graduates under the Vocational Education Programme

RN Sharma, Dy. Director (Voc.Edn), Govt. of Delhi

Vocational Education programme was started with a view to prepare the students at +2 stage for self/wage employment and thereby reducing the pressure on the University education so as to restrain the students from going towards aimless higher education. The programme has been implemented in almost all the states of the country but there are many factors which are impeding the growth and expansion of the Vocational Education Programme. One of the main factors responsible for the slow growth of the Programme is the lack of vertical mobility for +2 vocational graduates.

Various vocational courses based on Engineering, Business and Commerce, Home Science, Health and Paramedical and other fields have been started at +2 stage in almost all the States/ Union Territories. In order to accelerate the growth and the expansion of the Vocational Education Programme, it is imperative that provisions for vertical mobility for the +2 vocational graduates have to be made. The National Policy on Education, 1986 also clearly provides for the vertical mobility for the +2 vocational graduates of various vocational courses. The NPE 1986 inter-alia states that "Graduates of vocational courses will be given opportunities, under pre-determined conditions, for professional growth, career improvement and lateral entry into courses of general, technical and professional education through appropriate bridge courses."

The following vocational courses based on Engineering Commerce, Home Science, Health and Paramedical and other fields are being taught at +2 stage in the National Capital Territory of Delhi in more than 200 Govt./Govt-aided senior secondary schools. A model of vertical mobility proposed for various vocational courses is indicated against each area/course.

Sl. No.	Vocational Course	Vertical Mobility
1.	Electronics Technology	<ol style="list-style-type: none"> <li>1. Diploma in Electronics/Electrical Communication Engineering</li> <li>2. Degree in Electronics Engineering</li> <li>3. Member of the Instt. of Electronics &amp; Telecommunication Engineering</li> <li>4. A.M.I.E. (Electronics)</li> </ol>
2.	Electrical Technology	<ol style="list-style-type: none"> <li>1. Diploma in Electrical Engineering</li> <li>2. Degree in Electrical Engineering</li> <li>3. A.M.I.E. (Electrical)</li> </ol>

- |  |   |   |
|--|---|---|
| <ul style="list-style-type: none"> <li>3. Air-conditioning and Refrigeration Technology</li> <li>4. Structure and &amp; Fabrication</li> </ul> | } | <ul style="list-style-type: none"> <li>1. Diploma in Mechanical Engg.</li> <li>2. Degree in Mechanical Engg.</li> <li>3. A.M.I.E. (Mechanical)</li> </ul> |
| <ul style="list-style-type: none"> <li>5. Automobile Technology</li> </ul>   |   | <ul style="list-style-type: none"> <li>1. Diploma in Automobile Engg.</li> <li>2. Degree in Automobile Engg.</li> <li>3. A.M.I.E. (Automobile)</li> </ul> |

**COMMERCE-BASED COURSES:**

- |  |   |  |
|--|---|--|
| <ul style="list-style-type: none"> <li>1. Stenography</li> <li>2. Office Management. &amp; Sectt Practice</li> </ul>   | } | <ul style="list-style-type: none"> <li>1. Diploma in Sectt.Practice/ Commercial Practice</li> <li>2. B.A. Office Management from College of Vocational Studies.</li> <li>3. B.Com</li> </ul> |
| <ul style="list-style-type: none"> <li>3. Banking</li> <li>4. Marketing &amp; Salesmanship</li> <li>5. Accountancy &amp; Auditing</li> <li>6. General Insurance</li> <li>7. Life Insurance</li> <li>8. Railway Comm'l Working</li> </ul> | } | <ul style="list-style-type: none"> <li>1. B.Com</li> <li>2. Other courses run by various professional bodies relevant to the courses.</li> </ul>   |

**HOME-SCIENCE COURSES**

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>1. Nutrition &amp; Food Preparation</li> </ul> | <ul style="list-style-type: none"> <li>1. B.Sc. (Home Science)/B.A. (Home Science)</li> <li>2. Diploma in Dietician</li> <li>3. Diploma in Hotel Mgt &amp; Catering</li> <li>4. Other professional courses run by the Hotel industry and other food preservation and packaging industries.</li> </ul> |
| <ul style="list-style-type: none"> <li>2. Textile &amp; Design</li> </ul>             | <ul style="list-style-type: none"> <li>1. B.Sc. (Home Science)</li> <li>2. Diploma in Textile &amp; Design</li> <li>3. Diploma in Textiles Engg.</li> <li>4. Diploma in Fashion Designing</li> </ul>  |
| <ul style="list-style-type: none"> <li>3. Dress Design &amp; Making</li> </ul>        | <ul style="list-style-type: none"> <li>1. Diploma in Fashion Designing</li> <li>2. Diploma in Dress Designing, Garment Making and other professional courses run by exporters.</li> </ul>   |

## HEALTH & PARAMEDICAL COURSES

- |                                 |   |
|---------------------------------|---|
| 1. Health Care & Beauty Culture | 1. Diploma in Beauty Culture run by Board of Technical Education  |
|                                 | 2. Other courses run by professional institutions/ Health Clubs   |
| 2. X-Ray Technician             | 1. B.Sc. (Radiology)  |
| 3. Medical Lab. Technician      | 1. B.Sc. (Pathology)  |
| 4. Ophthalmic Techniques        | 1. Diploma in Ophthalmic Sciences run by various medical colleges |
|                                 | 2. B.Sc. (Ophthalmic)   |

## OTHER COURSE

- |                                |   |
|--------------------------------|---|
| 1. Tourism & Travel Techniques | 1. B.A. (Tourism)   |
|                                | 2. Diploma in Travel & Tourism run by various travel agencies.            |
| 2. Library Science             | 1. Diploma in Library Science   |
|                                | 2. B.Lib. in the University.  |
| 3. Computer Techniques         | 1. 'A' level and other courses run by Deptt. of Electronics.              |
|                                | 2. Courses on Software run by other organisations.                        |
| 4. Horticulture                | 1. B.Sc. (Horticulture) in Universities including Agricultural University |
| 5. Dairying                    | 1. B.Sc. (Dairying) in Agricultural Universities                          |

Provisions for vertical mobility for few vocational courses are already available with various boards of Technical Educations and Universities but the facilities for vertical mobility in respect of majority of the courses is yet to be created. It is, therefore, of utmost important and urgent that the concerned Universities and the Board of Technical Education are involved in this exercise for providing vertical mobility for +2 vocational graduates. There should be a statutory provision in the admission criteria for various Universities and Board of Technical Educations for providing lateral entry to the relevant diploma/degree level professional courses available with them so that +2 vocational graduates do not face any problem in getting admission to the higher professional courses. In case these higher professional courses are not presently available with the University/ Boards immediate steps should be taken to devise such courses so that suitable vertical mobility may be provided to the +2 vocational graduates.





## 5. APPENDICES

- GOI Programme of Action 1992—Vocational Education:
- Day-to-Day Programme
- List of Delegates

## G.O.I. Programme of Action 1992 Vocational Education

### **1. PRESENT SITUATION**

The NPE, 1986 advocated a systematic, well-planned programme of vocational education which would be distinct stream intended to prepare students for identified occupations. It envisaged that vocational courses would ordinarily be provided at the higher secondary (+2) stage but flexibility was provided to start vocational education after class VIII. The NPE, 1986 set a target to cover 10% of higher secondary students under vocational courses by 1990 and 25% by 1995. A substantially funded centrally sponsored scheme for Vocationalisation of Secondary Education was started with effect from February 1988. The scheme was taken for implementation in all States and Union Territories excepting Tripura, Daman and Diu, Dadra & Nagar Haveli and Lakshadweep. At the end of 1991-92, 12,543 vocational sections were approved in 4400 schools; there by creating facilities for diversion of about 6.27 lakh students at the +2 stage @ 25 students per vocational sections in Classes XI and XII). This accounts for 9.3% of students enrolled at the +2 stage. Although quantitatively the implementation of the Vocational Education Scheme at the +2 stage has been fairly substantial; in qualitative terms, there remains much to be done. Vocationalisation of education is identified as a priority area in the Eighth Five Year Plan.

The NPE, 1986 has also mentioned the need for non-formal and need-based vocational programmes mainly, though non exclusively; for disadvantaged groups. The NPE, 1986 also envisaged vocational courses at the tertiary level for facilitating vertical mobility. While some beginning has been made in these areas, they will receive impetus during the Eighth Plan.

The Revised Policy Formulations retain the policy framework laid by the NPE, 1986 but for two modifications. First, the target for coverage under vocational courses has been revised — ten per cent of the higher secondary students by 1995 and 25 per cent by 2000. Secondly, they envisage children at the higher secondary level being imparted generic vocational courses which cut across several occupational fields and which are not occupation specific, thereby adopting an important recommendation of NPERC.

### **2. MANAGEMENT OF VOCATIONAL EDUCATION**

Management is critical to the implementation of a complex programme of vocationalisation of educational. The following management structure was envisaged under the Centrally sponsored Scheme of Vocationalisation: :

## **National Level**

(i) A Joint Council of Vocational Education (JCVE) under the chairmanship of Union Educational Minister for the planning and coordination of vocational programmes; to provide guidelines for development of vocational programmes at all levels, and to evolve schemes for involvement of public and private sector industry in vocational education.

(ii) The Bureau of Vocational Educational in the Department of Education, Ministry of Human Resources Development, would provide secretariat support to the JCVE and oversee the implementation of the programmes.

(iii) The NCE through its Department of Vocational Education would function as the apex level Research and Development (R&D) institution giving academic support in the planning and implementation of vocational programmes.

## **Regional Level**

(i) Boards of Apprenticeship Training would be augmented to cater to the training needs of vocational students after they complete the vocational courses at the +2 stage.

(ii) The Regional Colleges of Educational (RCE) under NCE would function as regional vocational teacher training institutions in addition to performing R&D functions.

## **State Level**

(i) The State Council of Vocational Educational (SCVE) should be set up as a counterpart of the JCVE.

(ii) The Directorate of Education in the States/UTs should provide the administrative leadership to the vocational education programmes.

(iii) In the SKIRTS, a separate wing would be established to provide R&D support to the programme at the State level.

## **District Level**

A District Vocational Education Committee would be constituted to promote the programme and maintain linkages with the Directorate of Education and other related institutions as well as backward and forward linkages with the Community.

## **School Level**

A senior staff member will be incharge of the management and actual implementation of the vocational courses. He will also build up contacts and linkages with the community.

As envisaged by the scheme, the JCVE and its Standing Committee were established at the national level. In view of the magnitude and complexity of the programme and the number of areas requiring close attention it has been decided to set up a Central Institute of Vocational Education (CIVE) under the umbrella of the NCE, but with considerable functional autonomy. The Institute will be the apex R&D institution in the field of vocational education.

However, at the State level, out of the 24 States and 4 UTs, only 15 States and 2 UTs have set up offices at the Directorate level; Only 8 States and one UT have set up originations at the SCERT level and only 6 States have set up district level organisations for this programme. Many of these States, which have set up offices, have not filled the full contingent of posts required. Only 11 States have established the SCVEs or a similar body as the counterpart of the JCVE at the State level.

The following steps need to be taken:

(i) The state governments/UTs should set up adequate management structures at all levels as envisaged under the centrally sponsored scheme.

(ii) Personnel manning the management structure should be well trained and encouraged to establish linkages with concerned agencies in the Government, voluntary organizations and individuals with specialized training. They should also remain in position for a tenure of atleast three years so as to give continuity to the programme.

(iii) While giving financial assistance performance will be given to States/UTs which have set up adequate management structure.

(iv) The JCVE and SCVE should meet regularly in order to provide the required guidance and coordination at the National and State levels respectively.

(v) The CIVE should be made functionally effective as early as possible.

### **3. VOCATIONALISATION OF SECONDARY EDUCATION AT PLUS TWO LEVEL**

#### **A. Schematic Pattern and Coverage**

As already mentioned, the Scheme of Vocationalisation of Secondary Education at +2 level was started in 1987-88 and taken up for implementation in 24 States and 4 UTs. Facilities have thus been created for diversion of about 6.27 lakh students at +2 level @ 25 students per vocational section at +2 level. The NCERT undertook a quick appraisal of the implementation of the programme in seven States in 1990. The Department of Education had engaged M/s Oper Main Systems to collect data on implementation of the programme. Data upto 1991 has been received for 19 states and UTs. A computersised Management Information System (MIS) has been developed so that necessary informaton on different aspects of the programme implementation are available at different levels from the dstruct to the Central Government. The MIS will become operational from July 1992-93.

A determined effort will be made to introduce the programme in Tripura, Daman & Diu, Dadra & Nagar Haveli and Lakshadweep. The main emphasis during the 8th Plan would be consolidation and quality improvement of the existing programme. By the end of the 8th Plan it is proposed to create facilities for diversion of an additional 2.62 lakh students at +2 level. Taking the cumulative coverage to 8.89 lakh students or in percentage terms, approximately 11% of the student population at +2 stage.

## **B. Revision of the Scheme**

In the light of the feedback received from the States and the experience gained in implementation, certain aspects in the scheme are being revised. These include the financial outlays for equipment, construction of worksheds, vocational surveys, raw materials and field visits. Assistance to vocational organisations would be separate scheme hereafter.

## **C. Essentials for a Successful Vocational Programme**

Essentials for a successful vocational programme :

- The credibility of the programme should be established. This would depend on its quality, relevance and acceptability.
- Education-Employment linkages should be firmly established.
- Adequate infrastructure — physical and academic — should be provided.
- Assured supply of funds over an extended period of 5 to 10 years.
- Training programme for teachers — both preservice and in-service.
- Training of teacher trainers.
- Effective management structures at all levels at the Centre and in the States/UTs and reasonable tenure for their functionaries.
- Equivalence among the vocational, technical and academic courses.
- Curriculum development in consultation with employers.
- Enlisting community involvement and participation of commercial establishments and industrial houses.
- Need for active co-operation for other government Departments with the Department of Education at the Central and State level.

## **D. Apprenticeship Training**

It has been consistently felt that students of the Vocational courses at +2 level should be provided facilities for apprenticeship training under the Apprentices act as an important catalyst for promoting vocational education. The training would strengthen the skills of the vocational students by placing them in real work situation in industries/farms whereby establishing their worthiness in the area of vocational training obtained. In 1986, the Apprentices Act administered by the Ministry of Labour (DGE&T) was amended to provide training to vocational students of +2 level (Technician Vocational Apprentices). This scheme is being implemented through the four Regional Boards of Apprenticeship Training (BOAT) at Bombay, Calcutta, Madras and Kanpur. Twenty subject fields were notified for apprenticeship training in 1988.

Despite that, the actual number of students who could actually get the benefit of these facilities is very small. The Central Apprenticeship Council under the Ministry of Labour has approved inclusion of 40 more subject field under the Apprentices Act (Technical Vocational Apprentices). This would facilitate a much larger number of students to derive the benefit of Apprenticeship Training. Efforts would be made to cover more vocational courses under the Apprentices Act. To derive maximum benefit from training facilities under the Apprenticeship Scheme under the category of Technician Vocational Apprentices, the States/UTs should, as far as possible, adopt the nomenclature of the vocational courses approved under the Apprentices Act (Technician Vocational Apprentices). They should also liaise with the Regional Boards for training of the students.

The Regional Boards of Apprenticeship Training should be suitably strengthened and activated so that they may effectively fulfill their responsibility in the placement of +2 Vocational students for Apprenticeship Training. Efforts should be made by the Boards to cover a much larger number of students passing out of +2 vocational stream in the 60 courses presently covered under the Apprentices Act (Technician Vocational Apprentices).

#### **E. Teacher Training**

It is the teacher who interprets and implements the educational policy in actual class room situation and as such is the most crucial input. presently, pre-service training for vocational teachers is practically non-existent; in service training is not adequate and competent vocational teachers are often not available in desired numbers. Teacher training, therefore, requires priority attention.

A phased and well structured programme of preservice teacher training will be drawn by CIVE and implemented in RCEs on a priority basis. The pre-service training would gradually be extended to other suitable institutions such as agricultural and general universities. By the end of the 8th Plan, 1600 teachers are expected to be given pre-service training.

Inservice courses will be organised by the States in selected professional institutions on the basis of guidelines already provided by NCERT/CIVE in terms of duration, content and methodology. The SCERT should be the nodal agency at the state level for coordinating the teacher training programme. SCERTs should develop linkages with DIETs and Colleges of Teacher Education for this purpose. Besides, the CIVE will also conduct inservice training programmes on national or regional level in selected areas in its own premises as well as in collaboration with other expert institutions such as Universities, Research Laboratories, Medical Institutions, etc. It is estimated that by the end of the 8th Plan, 12000 teachers will receive in service training.

The State Departments concerned with vocational educational will also evolve schemes to utilise resources in institutions, such as those under Khadi and Village Industries Commission (KVIC), Krish Vigyan Kendra (KVK), Farms, Hospitals, etc., for training vocational teachers, on part-time as well as on full-time basis. It is estimated that 100 such professional institutions

would provide training to about 5000 teachers. The CIVE will monitor and evaluate the pre-service and inservice training courses.

## **F. Curriculum**

The national vocational education curriculum for the +2 stage has been adopted by most States and UTs which have launched the vocational programme so far. A few are yet to fully switch over from the original state pattern to the national design.

The nationally recommended curriculum design consists of the following components:

1. Language(s) 15-20%
2. General Foundation Course (including Environment Education, Rural Development and Entrepreneurship Development) 10-15%
3. Vocational Theory and Practice (including on-the-job training) 65-70%

It is essential that knowledge and skills acquired have relevance to self and wage employment, and should be based on an assessment of the market opportunities and potentialities. The communication skills, entrepreneurial skills, perception of environment and sustainable development should find suitable weightage. On the job training as an integral component of vocational curriculum is necessary for developing skills competencies.

The following steps would be taken :

- (i) Persuading the States which have not yet adopted the national curriculum design to adopt the design at the earliest.
- (ii) Developing competency based curricula following the national pattern in respect of all new vocational courses.
- (iii) Ensuring substantial time allocation for on-the-job training and its proper execution.
- (iv) Developing capabilities for teaching the General Foundation Course with particular reference to entrepreneurship development, curricular materials, teacher training, follow up support, etc.

The States will primarily be responsible for the first three steps; the collaborative support of the CIVE would be available to them. The CIVE will have to play a more direct role in regard to the fourth step by bringing in the expertise of other institutions in the field of entrepreneurship development.

## **G. Vocational Education at Tertiary Level**

One of the factors responsible for the slow progress of vocationalisation of secondary education is the lack of opportunities for the vocational stream graduates for their professional growth and career advancement.



Vertical mobility can be provided for the +2 stage vocational students through specially designed diploma courses, general degree courses and professional degree courses.

In spite of the recommendations to this effect made in the POA, 1986, not much progress has been made in this regard. Some states have allowed the vocational stream graduates to enter second year of polytechnics while some others have reserved seats for them in the first year. Most of the universities have permitted vocational students to enroll in Arts and Commerce disciplines without any bridge course. But such a ready entry has not been possible in Science and Professional courses. No bridge courses have been designed to facilitate such a mobility and no new courses introduced at the tertiary stage which could help vocational students to pursue higher studies in these areas. This deficiency would be rectified in the 8th Plan.

The Committee set up by the UGC to prepare model curricula for vocational subjects at the undergraduate level for students from the +2 vocational stream should complete its work at the earliest so that the courses recommended by them could be introduced by universities in the academic session 1993-94. The introduction of vocational courses ought to be preceded by a realistic assessment of the requirement of qualified teachers, laboratory/workshop, etc., to ensure that students who offer these courses graduate with the knowledge and skills required by the market. This would not only provide vertical mobility to vocational students but also offer an opportunity for greater diversity in course offerings in the university system in general. Further, UGC and CIVE would take a lead in organising these courses and monitoring their implementation.

## **H. Measures Facilitating Employment**

### *(a) Equivalence of Certificates*

Since employment is the main objective of vocationalization, it is important that standards are clearly laid down for the competencies required and that there should be an understanding regarding equivalence of certificates, within the Government by different Departments, etc. Much progress needs to be made in this area. It is proposed to entrust this vital task to the CIVE which would develop a suitable mechanism for the purpose of accreditation and recognition of vocational courses.

### *(b) Modification of Recruitment Rules*

The acceptability of vocational courses would depend on the employability of vocational students. This in turn will depend on the unable skills acquired by the students as well as on the recruitment rules. The recruitment rules need to be amended for giving preference to students trained in specific vocational skills in jobs requiring such skills. For this purpose the Department of Education has been pursuing with various Departments as the Central level and at the State level for amending the recruitment rules. At the instance of the Department of Education, the Department of Personnel and Training issues a circular in November, 1988 to

all Ministries/Departments requesting them to review their recruitment rules in order to make the vocational passouts eligible for employment. The State Governments/UT Administrations were advised to take urgent action in this regard in respect of State Department/Organisations. The response has, however, not been very encouraging although some states have done considerable work in this area. At the national level, a Committee with a representative each from the Department of Education, the Department of Personnel and Training, and Ministry of Labour has been set up by the Cabinet Secretariat to review the position department-wise about the posts available, where preference may be given for persons who have completed the +2 vocational courses training. After identification of the posts, recruitment rules for such posts would be modified suitably indicating the preference to be given. Similar initiatives should be taken by the State Government with the committee reporting directly to the Chief Secretary. It should be the endeavour at both Central and State levels to complete identification of posts in one year. Actual modification of Rules should be completed as early as possible and in any case before the end of the 8th plan.

*(c) Vocational Guidance*

The centrally sponsored scheme envisaged that vocational guidance will be available in the school for providing necessary guidance to students, parents and teachers regarding suitable educational and vocational choices. The guidance programmes should be directed at informing the students about job opportunities in various courses, facilities for on the job training and placement by working in collaboration with employers. However, very few States and UTs are actually providing any systematic guidance to students. It is imperative that this aspect of the vocational programme is given due importance and the teacher provided for general foundation courses should be responsible for providing vocational guidance. He should also be adequately trained to carry out his function. A trained counsellor could be appointed at the state cost at the district level to organise the career advice centre and assist the teachers in vocational guidance activities. Existing State Bureaus of educational and vocational guidance should undertake the responsibility of training teachers in consultation with the NCERT for their respective States. States/UTs should also popularise the vocational programme by providing information on the media. The NCERT has made some video films and popularization folder which could be suitably used.

*(d) Linkages with Government Departments and Industrial Houses*

Successful implementation of the programme of vocationlisation of education would be facilitated by the implementing agencies at the Centre and State by developing linkages with Government Departments, industry and institutions in the fields of agriculture, medicine and health, etc. If SCVE meets regularly then only will it be possible for the linkages to be forged. The State Governments should set for themselves target for forging linkages so that there is an element of urgency. There should be frequent interaction between the SCVE and the agencies with which linkages would be setup. Association of senior functionaries like the Chief Secretary would help.

now available in the agricultural and health sectors. The Indian Council of research (ICAR) in collaboration with the Department of Vocational Education of the States has already developed some need-based and employment-oriented courses. The courses need to be further revised and updated with the help of ICAR Institutes/State Agricultural Universities. The Agricultural Universities, their regional research stations and sub-stations and other infrastructures may also participate in the preparation of the curriculum and serve as faculty in the nearby vocational training programmes. Similarly, the other infrastructure developed in various ICAR Institute, KVKs and other organisations assisted by ICAR, NOGs and GOs can also be drafted in accelerating the programme of agricultural vocationalization.

The Ministry of Health and Family Welfare in collaboration with Department of Education have developed health related courses at +2 level for training various categories of para-medical staff as envisaged in NPE, 1986 (Para 5.18). Para-medical staff are the back bone of hospitals and the public health system, and there is a need to match the future requirements in conjunction with the vocational education programmes. considering the acute shortage of para-medical staff, States/UTs should make efforts to introduce more health related courses in close collaboration with the Ministry of Health, hospitals and other concerned agencies:

(e) *Self Employment*

As the organized sector can provide employment to only a small percentage of the total work force, most of the students passing out of the +2 vocational stream have to be prepared for self employment. The question of providing loan facilities on easy terms to students of vocational courses to enable them to take up small scale business was taken up by the Department of Education with the Banking Division of the Ministry of Finance; Development Commissioner (Small Scale Industries) Ministry of Industry and the Ministry of Rural Development. Under the scheme of Self Employment for Educated Unemployed Youth (SEEUY), students of +2 vocational courses will be given preference for loans provided they fulfil other criteria of eligibility. Banking Division of the Ministry of Finance have issued instructions to the banks to finance small scale industries on liberalized margins and concessional rates of interest. This would facilitate students of +2 vocational courses to get bank assistance for setting up small scale industries. The State Education Departments should bring it to the notice of all concerned and have meetings with State Industries Departments for linkages to facilitate self employment.

The Directors of Vocational Education in the States/UTs should contact District Industries Centres for loan facilities under SEEUY. They should also have linkages with the Project Director of District Rural Development Agency (DRDA) for assistance under Training for Rural Youth in Self Employment (TRYSEM) programmes under which loan facilities are arranged through banks for persons from families below poverty line, to enable them to set themselves up in self-employment.

## **I. Research**

The NCERT through the CIVE would function as the apex level R&D institution. At the State Level, the SCERTs are required to provide R&D support to the programme. It is necessary that research activities should be an important activity of these organisations at the national and the State levels.

## **4. OTHER VOCATIONAL EDUCATION PROGRAMMES**

### *(i) Work Experience*

At the primary and middle school stages of education Socially Useful Productive Work (SUPW)/Work Experience (WE) forms an integral part of the curriculum in many States, but the actual implementation, both in coverage and quality, leaves much to be desired. It has been observed in actual practice that WE has degenerated into trivial activities in the school and in many states the time allocation rarely exceeds 10%.

The State Governments/UTs should ensure that WE is actually included as an integral part of the curriculum, that teachers are trained to impart the instruction and that necessary financial provision is made. WE programmes are aimed at developing confidence and sufficient psycho-motor skills in students to facilitate their entry into the world of work at a subsequent stage. In schools where WE already forms a part of the curriculum these courses need to be toned up in keeping with the perceptions reflected in the NPE. At least 12.5% to 20% of the school time should be allocated for a systematic implementation of the programme.

### *(ii) Pre-vocational Education*

The NPE 1986 has envisaged that pre-vocational programmes would be provided at the lower secondary stage to facilitate the choice of vocational courses at the higher secondary stage. A few states have taken the initiative in implementing this provision. During the 8th Plan WE at the lower secondary stages would assume the form of pre-vocational education.

The objectives of pre-vocational education at the lower secondary stage would be to impart training in simple marketable skills to students in classes IX and X, to develop vocational interests and to allow for self-exploration of vocational preferences, to prepare students for participation in work and to inculcate the desired values related to work culture.

Pre-vocational education would be offered in a phased manner in all secondary schools, to students in classes IX and X. The courses would be in modular form and each school would offer at least 3-4 courses relevant to the local needs. Twenty per cent of the school time would be made available for pre-vocational education. Additional time would be provided out of school hours for intensive practice/learning activities. The first year of the 8th Plan would be a preparatory year for orientation of Head Masters and Teachers Co-ordinators, teacher training, development of instructional materials and creation of infrastructure in the schools. From 1993-94 onwards, the programme will be gradually implemented.

### *(iii) Generic Vocational Courses*

The streaming of students into vocational courses aims at developing employment-specific skills in individuals. In addition to the present model of 'streaming', the Revised Policy Formulations provide for Generic Vocational Courses (GVC) for the students of the academic stream. The GVC would aim to develop those employment related skills which cut across various vocations and are needed by all members of the educated work force regardless of the person's occupation. Computer applications, typing, interpersonal skills, problem solving along with the acquaintance of the state-of-the-art technologies such as in the field of information, communication, production, distribution, etc. can be broadly included in the curriculum of such a course. The GVC would be a step towards improving the quality of general education for the future technology oriented society.

In view of the fact that GVC curriculum would have to be developed from scratch keeping in view the country's needs and existing realities the programme will be experimented in 400 higher secondary institutions in different regions of the country. The CIVE will be responsible for this try-out and its wider implementation during the 9th Plan.

It is envisaged that the first two years of the Plan would be devoted to developing curriculum and support instructional material, training teachers and equipping schools. The next two years would concentrate on actual try-out in the schools while in the final year, the programme evaluation would be conducted.

### *(iv) Vocational Education Programmes for Special Groups and out of School Population*

The tribal and rural population do not have adequate access to school education, vocational courses in schools or vocational/technical training schools/institutions. There is also a paucity of vocational courses/institutions to cater to the women population whose earning power could be considerably augmented through vocational training. Handicapped and disabled persons form another significant section of the society who have at present practically no avenues to acquire suitable productive skills to make their living more meaningful and self reliant. In addition, there is a large student population which does not go beyond class VIII and who need to be provided some skill training.

Vocational training programmes of non-formal nature are being organised by various Departments/organisations like the Department of Rural Development, Department of Women and Child Development, Ministry of Welfare, ICAR, KVIC, Central Social Welfare Board, Community Polytechnics, Shramik Vidyapeeths, Jan Shikshan Nilayams, etc. While these organisations would continue with their efforts to provide non-formal vocational training programmes through voluntary organisations for different target groups, the Department of Education under the Vocational Education Programme would concentrate on organising non-formal vocational education and training programmes for school dropouts in the age group 14-18 years who had completed class VIII but had not gone beyond class X.

It is also felt that all polytechnics, engineering colleges and other vocational and technical training institutions should organise short-duration non-formal vocational training programmes. The concerned Ministry/Department/organisation as well as the State/UTs should earmark funds and provide financial assistance to these institutions for this purpose.

The Ministries of Welfare and Labour are already organising some vocational training programmes for the handicapped. They would intensify their efforts. The Department of Education would also encourage voluntary organisation working in this area. The CIVE will also provide support to vocational training programmes for the handicapped through teacher training materials and other resources.

*(v) Vocational Education Programmes for Girls*

The involvement of girls in the vocational education programmes is crucial. Under the Centrally Sponsored Programme at +2 level, girls have equal access to vocational courses as the boys. Efforts should be made by the States/UTs to consciously encourage the participation of girls in the non-traditional and emergent technologies. The non-formal vocational programmes with emphasis on entrepreneurship should be specially geared to the needs of the out-of-school girls. Facilities for guidance should be available for encouraging their participation.

*(vi) Vocational Education for Special Areas*

Separate vocational schools are proposed to be up in the rural areas and in the North Eastern States where it is not viable to start vocational courses in general educational institutions. As and when these vocational schools are established they would also run short duration non-formal vocational training programmes for special groups and out of school population.

*(vii) Assistance to Voluntary Organisations for Experimental/Innovative programmes and Short Term Vocational Courses*

The centrally sponsored scheme of Vocationalisation of secondary education envisages the role of voluntary agencies for conducting innovative programmes in the field of vocational education and provides financial assistance to selected agencies for this purpose. However, since the scheme was launched in 1987-88 only a few voluntary organisations could avail the assistance provided under the scheme. This was mainly because the scope was limited and assistance restricted to programmes of "innovative character". It was therefore felt that, to mobilise greater involvement of the voluntary organisations in the vocational education programme, the scope and objectives of the scheme should be widened and the details of the facilities offered to voluntary organisation be made available separately. Accordingly a Scheme of Assistance to Voluntary Organisation is now being formulated.

The overall aim of the scheme is to promote non-formal vocational education through NOGs for achieving the goals spelt out in the NPE. The specific objectives of the scheme are to provide financial assistance to the voluntary organisation for :

- Innovative/experimental projects.
- Short-term training programmes of vocational education preferably in backward/rural areas and particularly for girls of the age group of 14-18 years who have dropped out of the school before completing Class X.
- Organising special vocational training centres in rural areas where no institution/organisation is available to start non-formal course.
- Training of vocational teachers/resource persons.
- Other activities connected with the vocational education.

States/UTs would have the primary responsibility to enlist the voluntary organisation for implementing the scheme. The NCERT should prepare the syllabus, curricula and instructional material for more short-term courses of varying duration. The programmes undertaken by voluntary agencies under this scheme should be evaluated towards the end of 8th Plan.

#### *(viii) Vocational Education through Open Learning*

The NOS has taken up a crash programme of vocationalisation. Various types of vocational courses under different groups would be introduced and offered to the student with effect from the academic year 1992-93. The courses would be offered in collaboration with supporting partners, organisations and institutions working in the vocational education field and having basic infrastructural facilities. Presently NOS is linked with Shramik Vidyapeeths who are planning to offer a number of vocational programmes from the academic session 1993-94. Possibilities have been explored to run Vocational Courses in partnership basis with many national level Organisations such as KVKs, Voluntary Health Association of India, Central Social Welfare Board, Council for Advancement of Peoples Action and Rural Technology (CAPART), KVIC, etc.

## **5. MONITORING AND EVALUATION**

A systematic and regular monitoring of the vocational education programme is essential for its effective implementation. Under the centrally sponsored scheme of Vocationalisation of Secondary Education, quarterly progress reports were to be sent by the State/UTs. However, these were generally not forthcoming and, therefore, there was considerable information gap between the policy planners and what was happening at the grass roots level. A computerised MIS has now been developed under which information would flow regularly from the schools to the district level, from the district level to the Directorate/State level to MHRD. The information is required on a quarterly and annual basis in a prescribed proforma. The first level training of coordinators has been organised by NCERT in 1991. The States should ensure that the MIS is systematically implemented and information is regularly sent to MHRD. The first quarterly report is expected from the states in July 1992.

The NCERT would be responsible for conducting evaluation studies on different aspects of programme implementation. Similar studies would also be entrusted to outside agencies. States/UTs should also conduct evaluation of their programme. They should obtain systematic follow up information on the students who have passed out of the vocational courses to find out whether they have found employment and if so whether it is in the area of skill obtained.

A monitoring system would also be developed for the other components of the vocational education programme, namely, implementation of generic vocational courses at higher secondary level and pre-vocational education at the secondary level.



## Day-to-Day Programme of the Conference

(February 14-15, 1995)

**Venue** : CBSE, 2, Community Centre, Preet Vihar, Delhi-110 092

### Programme

#### 14.02.1995 (Tuesday)

1000 Hrs	Registration of the Delegates	
1030 Hrs.	Inauguration	
	— Welcome	Prof. BP Khandelwal Chairman, CBSE
	— Purpose of Conference	Sh. HR Sharma Director, (Acad), CBSE
	— Keynote Address	Sh. CK Mishra Ex-Reader, NCERT
	— Vote of Thanks	Sh. HR Gupta Jt. Secy (Acad), CBSE

#### TEA BREAK

1st Session—(11.30 am - 1.30 pm.)

Chaired by Chairman, CBSE

(CBSE Status Paper, Curriculum Designing and Instructional Material)

— CBSE Status Paper	— CD Sharma, Education Officer (Voc) CBSE
— Open Discussion	
— Curriculum Designing and Instructional Materials	— Dr. P Raizada Reader, NCERT
- Discussion	

## **LUNCH BREAK**

2nd Session (2.30p.m.-5.00 p.m.)

Chaired by Dr. JN Sharma

(Selection of courses and teacher factor, implementing Agency Status Papers)

- Selection of courses and Teacher Factor
  - Discussion
  - Status Papers by Agencies/Heads of Schools
  - Discussion
- Dr. M Sengupta  
Reader, NCERT

## **15.02.1995 (Wednesday)**

1st Session (10.00 am - 1.30 pm)

Chaired by Dr. G S Patnaik

(Evaluation: Theory and Practical; School-Industry Linkages and Vertical Mobility)

- Vertical Mobility
  - Evaluation of students Progress in Vocational Education
  - School-Industry Linkages
  - Discussion
- Sh. R N Sharma  
Dy. Dir. (VE)
  - Dr. P Raizada  
Reader, NCERT
  - Ms. Preet Pal Kaur  
Cordinator (V.E)

## **LUNCH BREAK**

2nd Session (2.30 pm - 5.pm)

Chaired by Shri Y N Chaturvedi, Addl. Secretary

1. Group work and presentation of Recommendations by respective Groups.
2. Valedictory Address.

## List of Delegates

Sl.No.	Name & Designation	Address
1.	Dr. PK Ghosh Retd. Professor	35, Vaishali, Pitampura, Delhi-34
2.	Dr. (Mrs) Kailash Khanna Reader	Lady Irwin College Sikandra Road, New Delhi-1
3.	Dr. M Sengupta Reader	ERIC, NCERT, New Delhi-16
4.	Dr. P Raizada Reader	DESSH, NCERT, New Delhi-16
5.	Sh. CK Mishra Ex-Reader	C K, 33/7, NEELKANT, Varanasi
6.	Sh. GS Patnaik Director of Education	Directorate of Education Delhi Administration, Old Secretariat Delhi-54
7.	Dr. Kamal Taori Chief Executive Officer	Khadi & Village Industries Commission 3, TRLA Road, Vile Parle (W), Bombay-400 056
8.	Brig. MPS Tyagi Dy. Director General	Army Education, Army HQ. Sena Bhavan, New Delhi-110 001
9.	Ms. Vinita Aggarwal Dy. Secretary (VE)	Deptt.of Education (MHRD) Shastri Bhavan, New Delhi
10.	Dr. SK Sundriyal Sr. Faculty Member	Institute of Entrepreneurship Development, U.P. (15D UP) A-430, Indira Nagar, Lucknow
11.	Sh. SS Gauri Dy. Director (Acad)	Navodaya Vidyalaya Samiti A-39, Kailash Colony, New Delhi-110048
12.	Sh. RN Sharma Dy. Director (Voc.Edn)	C/o Govt. Girls Sr. Sec. School Shadi Khampur, Near Ranjit Nagar New Delhi
13.	Ms. Preetpal Kaur Coordinator Voc. Edn.	Education Department Chandigarh Administration, Chandigarh
14.	Dr. PH Sethumadhava Rao Joint Secretary (VE)	UGC, New Delhi-110 002

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| 15. | Sh. VK Shukla<br>Asst. Director (Training)      | 18, Institutional Area<br>Shaheed Jeet Singh Marg, New Delhi   |
| 16. | Sh. SM Bhatnagar<br>Education Officer           | KVS Headquarters<br>16, Institutional Area, Shaheed<br>Jeet Singh Marg, New Delhi-16                                     |
| 17. | Sh. A Palanivel<br>Reader                       | PSS Central Institute of Voc. Edn.<br>131, Zone II, MP Nagar, Bhopal-462011  |
| 18. | Sh. VR Ramakrishnan<br>Secretary (ER)           | LIC of India, Central Office<br>Bombay   |
| 19. | Sh. GK Swaminathan<br>Secretary (P & IR)        | Zonal Office, LIC, Jeevan Bharati<br>New Delhi-1   |
| 20. | Sh. JS Manjul<br>Consultant                     | Centre for Promotion of Health-related<br>Vocational Studies, Central Health Edn<br>Bureau Kotla Road, New Delhi-110 002 |
| 21. | Sh. RC Singh<br>Sr. Education Officer           | Bhillai Steel Plant<br>TA Building, Bhillai  |
| 22. | Sh. V Narayanan<br>Dy. Director (Technical Edn) | Principal, Pusa Polytechnic<br>New Delhi   |
| 23. | Dr. JN Sharma<br>Consultant                     | Bhartiya Vidya Bhavan<br>KG Marg, New Delhi  |
| 24. | Sh. RN Saxena<br>Consultant                     | 9A/91, WEA, Karol Bagh<br>New Delhi  |
| 25. | Sh. AVM Kutty<br>Jt. Director (Estt)            | Railway Board,<br>New Delhi-110 001  |
| 26. | Sh. TK Balasubramanian<br>Consultant            | C/o Railway Board<br>Rail Bhavan, New Delhi  |
| 27. | Sh. SS Sangal<br>Jt. Director (VE)              | National Open School<br>B-35, Kailash Colony, New Delhi-48   |
| 28. | Sh. Suraj Prakash<br>Principal                  | CRPF Public School<br>Rohini, Delhi-85   |
| 29. | Mrs. J Shanta<br>Principal                      | Asan Memorial Sr. Sec. School<br>1, Anderson Road, Madras-6  |
| 30. | Mrs G Sharma<br>Principal                       | Govt. Model Sr. Sec. School<br>Sector 10A, Chandigarh  |

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| 31. | Dr. JD Johnson<br>Principal                                    | SBOA School<br>Jr. College, Madras-600101                          |
| 32. | Mrs. Jatinder Sobti<br>Principal                               | SGHK Girls Sr. Sec. School<br>Bangla Sahib, Ashoka Road, New Delhi |
| 33. | Sh. Virender Singh<br>Principal                                | Govt. Model Sr. Sec. School<br>Sector 23, Chandigarh               |
| 34. | Sh. GS Negi<br>Principal                                       | Bhartiya Vidya Bhavan<br>Mehta Vidyalaya, KG Marg, New Delhi       |
| 35. | Mrs. Shubra Gupta<br>PGT (Home Science)                        | Govt. Girls' Sr. Sec. School<br>Pandara Road, New Delhi            |
| 36. | Dr. RK Goel<br>Teacher incharge of<br>Tourism & Travel         | Govt. Boys' Sr. Sec. School<br>Pitampura, Delhi-34                 |
| 37. | Sh. RP Tewari<br>Teacher Incharge<br>Textile & Design          | Govt. Girls' Sr. Sec. School No. 1<br>Lajpat Nagar, New Delhi      |
| 38. | Mrs. Krishna Mehta<br>PGT (Home Science)                       | Govt. Girls Sr. Sec. School, No. 1<br>Tilak Nagar, New Delhi-18    |
| 39. | Sh. Ravinder Kumar Verma<br>Teacher Incharge<br>(Horticulture) | Govt. Boys Sr. Sec. School<br>Bhaktawarpur, Delhi-36               |

### CBSE DELEGATES

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|----|---|--|
| 1. | Prof. BP Khandelwal<br>Chairman             | Central Board of Sec. Edn, "Siksha Kendra"<br>2, Community Centre, Preet Vihar, Delhi-92 |
| 2. | Sh. HR Sharma<br>Director (Acad)            | -do-   |
| 3. | Sh. KD Sharma<br>Controller of Examinations | -do-   |
| 4. | Sh. HR Gupta<br>Jt. Secretary (Acad)        | 17-B, I.P. Estate, New Delhi   |
| 5. | Sh. SK Gangal<br>Education Officer (Hum)    | -do-   |
| 6. | Sh. PC Bose<br>Education Officer (Sc.)      | -do-   |

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| 7.  | Mrs. Sugandh Sharma<br>Education Officer (Soc.Sc.) | 17-B, I.P. Estate, New Delhi   |
| 8.  | Sh. C.D. Sharma<br>Education Officer (Voc.)        | -do-   |
| 9.  | Mrs. Sadhna Prashar<br>Asst. Education Officer     | -do-   |
| 10. | Sh. KK Sinha<br>Dy. Secy (Admn. III)               | Central Board of Sec. Edn, "Siksha Kendra"<br>2, Community Centre, Preet Vihar, Delhi-92 |
| 11. | Sh. SK Sharma<br>Asst. Engineer                    | -do-   |
| 12. | Mrs. Kamlesh Gupta<br>Section Officer (Acad)       | 17-B, I.P. Estate, New Delhi-2   |
| 13. | Sh. V Vishwanadham<br>APRO                         | Central Board of Sec. Edn., Preet Vihar<br>Delhi-92                                      |

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