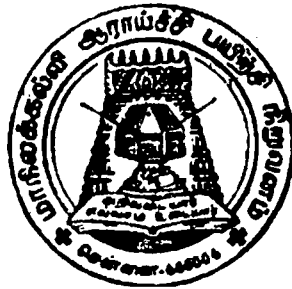


**INDEPTH STUDY OF VOCATIONALISATION OF
SECONDARY EDUCATION IN TAMILNADU**



Report of the Study Team
State Council of Educational Research & Training
(SCERT) College Road, Madras-6.

December, 1985

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CHAPTER I

INTRODUCTION

The UNESCO permitted an "Indepth Study of Vocationalisation of Secondary Education in Tamilnadu". A study team was constituted with the following members to complete this task:

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|--|---------------------|
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The study team had hardly four months to complete this and hence it was resolved by the team members to mobilise all the available information in the form of various documents and other sources in the Directorate of School Education and the Tamilnadu State Council

of Educational Research and Training and present the same in the form of an indepth study of the experiment of vocationalisation of Secondary Education in Tamilnadu. It is hoped that this document would be not only informative to stimulate many in the field to think about the problems and issues involved and help us to consolidate the progress that we have registered in this field in Tamilnadu.

Tamilnadu has been fortunate to have an excellent climate for educational innovations and experiments during the last decade. Among all the variables that are responsible for this climate the most significant one is the presence of a strong political will in the State, The Government of Tamilnadu which has been so popular with the people of Tamilnadu had consistently shown a strong will for innovations in education and had given a thrust to lead the rest of the country. Actually at one time when Hon'ble Minister for Education of india. Dr. P. C. Chander was in Madras in one of the educational programmes he happened to commend the good work that was being carried on in the field of vocationalisation in Tamilnadu with the following remark.

“What Tamilnadu does today other States have to do tomorrow”. The Hon'ble Minister for Education Thiru C. Aranganayagam in Tamilnadu who has been in the field of education for a long time before he became a Minister over seven years ago is known for his leader-ship in education in this part of the country. He has inspired the Department of School Education and various educational agencies in the State. The people of Tamilnadu show a sense of awakening to appreciate the effort that is being taken. The programme of vocationalisation of Higher Secondary Education in Tamilnadu has enjoyed all these advantages during the last few years.

The work that was going on in Tamilnadu had attracted many from other States and Union Territories of the country. Therefore there were visits by many groups and personalities to this part of the country to study the work that was in progress. Tamilnadu had greatly been benefitted by the reflections and by the concern shown by all these agencies and personnel who had visited Tamilnadu and seen some aspects of the scheme of vocationalisation and had contributed in their own ways to its improvement. The rapport that Tamilnadu has with all Central and national agencies has also been a very facilitative factor in its growth and consolidation as a state which has shown the largest enrolment in Higher Secondary vocationalised education in the country.

Tamilnadu had been one of those few states which had established a high power committee to examine the working of the Higher Secondary vocationalised education and examine how restructurisation of these courses would help the progress of the programme in the state. The committee under Dr. V C Kulandaiswamy deliberated during 1982 and its deliberations brought a tonic effect on the scheme that was being implemented in the State. Subsequently the Government of India wanted to have the All India Education Secretaries' conference in Tamilnadu in early 1983 and this also brought the focus of the country's

educationists to what was happening in the State. All the above mentioned factors have enabled Tamilnadu to keep itself under constant self-evaluation. If Tamilnadu is considered to be doing something worthwhile in vocationalised education it is largely because of all these factors that been mentioned.

The report is presented in the form of six chapters. The entire report is made as brief and readable as possible. The first chapter is used as an introduction, the second chapter traces the emergence of the vocationalised stream of education in the country with special reference to Tamilnadu, and the third chapter explains as to how Tamilnadu has made a leap forward. The fourth chapter attempts to throw spotlight on Coimbatore District which is recognised as a leading district in this scheme. The fifth chapter highlights the significant features of this Tamilnadu experience and the last chapter dwells upon problems, issues, and the many points over which we need to ponder and shows us that we have many more miles to go.

The report is based on the documentary evidences that are available in the Department of school Education and SCERT, Madras and Thiru K. Gopalan, Director of School Education and SCERT, Madras-6 will be pleased to receive comments and be happy to answer queries relating to the Tamilnadu experience.

CHAPTER 2

THE EMERGENCE OF THE VOCATIONALISED STREAM

2.1. Developments Prior to Independence :

As early as 1885 the Wood's Despatch stated that the instruction in Secondary Schools should be practically useful to the people of India in their different spheres of life" and sought to introduce non Literary vocational education at the Secondary School Stage. Similarly the Indian Education Commission (1882-83) recommended the bifurcation of the Secondary course at the upper classes at the High School. One leading to the entrance examination (Matriculation) of the Universities, and the other of a more practical character meant to fit youth for commercial and non-literary pursuits in life. The Philip Hartag Committee of 1929 suggested diversification of curriculum at the Middle School Stage. During the period of provincial autonomy (1937-47) there was some progress in the provision of Vocational Courses at the Secondary Stage. Since the world war required skilled recruits, it also assisted this trend. The Sargent Report, 1944 recommended the reorganisation of High schools into two types: Academic and Technical. In spite of the recommendations of various commissions mentioned above the progress in Vocational education at the Secondary stage was very small since the enrolment in vocational courses was only 9% of the total enrolment at the Secondary stage.

2.2. Developments after independence :

2.2.1. University Education Commission Report :

The University Education Commission (1948-'49) suggested a vocational bias in the Intermediate courses while retaining their emphasis on preparation for university education.

2.2.2 Secondary Education Commission Report :

The Secondary Education Commission (1952-53) recommended reorganisation of the pattern of secondary education. It sought the abolition of the Two-year Intermediate course suggested addition of one year to the Secondary School thereby making it 11/12 year Higher Secondary. It also recommended diversification of curricula by suggesting seven prescribed groups.

1. Humanities;
2. Sciences;
3. Technology;
4. Commerce;
5. Agriculture;
6. Fine Arts and
7. Home Science.

Following the above recommendations the Multipurpose

schools came up slowly in 5 states in India. By the end of the Third plan, 1/4 of the schools in the country were converted to the Higher Secondary Pattern.

2.2.3. Education Commission Report :

The Education Commission (1964-65) recommended 10+2+3 as the National Pattern, with work experience in the ten year school curriculum and Vocationalisation at +2 stage with a possible coverage of 50% of enrolment therein.

2.2.4. National Policy Resolution :

The Commission's recommendations were accepted by the Government of India and incorporated in the National Policy Resolution on Education (1968)

2.2.5. The CABE Resolution:

The Central Advisory Board of Education recommended implementation of vocationalisation at the +2 stage and wanted the NCERT to prepare model curricula and syllabi for the vocationalised courses, providing guide lines to the states and the Government of India to give financial assistance liberal to help speedy implementation of the programme.

2.2.6 The NCERT Document:

Following the resolution of CABE, the Government of India quickened its efforts to Vocationalise the +2 education. The NCERT brought out a significant document entitled, "Higher Secondary Education and its Vocationalisation (1975)". This document suggested broad guidelines for academic and Vocational curriculum, full time, part time, and correspondence courses at the +2 stage and adoption of the semester system together with the system of credits and grades for facilitating movement of students from one stream to another. The NCERT document triggered steps towards vocationalisation in the stages.

2.2.7. The Report of the Working Group :

The working group's Report (1977) under the Chairmanship of Thiru. P. Sabhanayagam recommended the following :

(1) Vocationalisation at the +2 stage should be structured so as to make it both terminal and continuing.

(2) Opportunities for vertical and horizontal mobility should be provided for the candidates completing the vocationalised courses.

(3) Apprenticeship facilities, guidance and counselling for careers should be provided to the Vocational students.

(4) Recruitment policies should be altered and wherever Vocationally qualified persons are available, they should be preferred to graduates so long as the jobs performed are the same or similar.

(5) A National Council of Vocational Education at the centre with corresponding State Councils in all the states should be set up.

2.2.8. The Review Committee Report :

The Review Committee appointed by the Government of India under the Chairmanship of Dr. Malcolm S. Adiseshiah (1978) in its report, "Learning to do", brought out :

(1) The importance and scope of Vocationalisation

(2) The course pattern for the general educational streams with a significant place accorded for socially useful productive work.

(3) The course pattern for the Vocational stream according due place to general foundation courses.

(4) Identification of the following Eight Vocational electives.

(a) Agriculture and related vocation

(b) Business and office management

(c) Paramedical

(d) Educational services

(e) Local body and other services

(f) Journalism

(g) Home Science related vocations and

(h) Other General services

(5) The need for flexibility in the streaming of courses with freedom for students to choose the general stream, the vocationalised stream or a mix in the spectrum.

The Review Committee Report stressed that Vocational Surveys should precede the introduction of vocationalised courses full utilisation of the existing facilities in the Polytechnics, IIIs and Para Medical Schools. Modification of Public Recruitment Policies Leading to preference for vocationally qualified persons over graduates for similar jobs and providing vertical mobility to students to vocational courses with opportunities to pursue further continuing education.

2.2.9. Special features of Tamil Nadu :

Besides the above mentioned developments in the national scene, Tamil Nadu had the following two special features namely 1. The Bifurcated courses and 2. The comprehensive schools. Under the 1948 scheme, a re-organised pattern of education was introduced by the then Government of Madras. The Bifurcated courses were initially of three year duration commencing from IV form. Later they were reduced to Two year duration. Engineering, Agriculture, Weaving and Teaching were the special areas offered in the Bifurcated scheme. On a selected basis about 350 schools implemented the scheme. The scheme was not attractive because the courses were too general in nature. Trained personnel were not available. The colleges were reluctant to admit these candidates for degree courses.

In 1975 under the comprehensive schools scheme in Tamil Nadu, job oriented courses were offered outside the school hours for those interested. The Schools were permitted to design courses and offer the same on approval. Liberal funds were provided towards non-recurring and recurring expenditure. These comprehensive school programmes were covered into the vocationalised courses under the 10+2 pattern of education in Tamil Nadu in 1978-1979.

CHAPTER 3

TAMILNADU LEAPS FORWARD

3.1. Tamilnadu implements 10+2+3 pattern:

The Government of Tamilnadu accepted the recommendations of a high power committee with the then Education Secretary Mr. C. G. Rangabashyam as Chairman and introduced the 10 + 2 + 3 pattern from June 1978 onwards. There is something unique in the manner in which Tamilnadu has approached the problem. The one year of the Pre-University course, which was taught in 188 colleges, that were essentially located in urban centres was shifted and introduced in 912 schools in the first year itself. The introduction of the Higher Secondary Education with the vocationalisation component was done in Tamilnadu under the guidance of a specially constituted steering committee with the commissioner and Secretary to Government, Education Department as Chairman and the Director of School Education as member Secretary.

3.2 Locating +2 in the school :

High schools were carefully chosen for being upgraded as Higher Secondary Schools. While doing this, the criterion that there should be atleast one Higher Secondary School for each Panchayat Union Block in rural areas and for each Municipality in urban areas, was carefully observed. By locating the Higher Secondary stage of education in the School Education Sector, the following advantages could be claimed

(1) Education became more accesible at the +2 stage. In the first year of the introduction of Higher Secondary programme. 89,600 students were admitted into the academic stream, and 24,400 were admitted to the vocational stream. Therefore the total admission of 1,14,000 in the Higher Secondary Stage Constitutes 36,000 more than the normal total intake of 78,000 in the pre-University course. This is a big step in Providing access to Higher Secondary Education.

2. The Higher Secondary Schools were carefully located in all rural areas and therefore this brought about a boost in rural education in Tamilnadu

3. School teachers trained in Teacher Education began to handle +2 type of education at the school stage. The atmosphere of the school was far more congenial for fulfilling the objectives of the Higher Secondary Education.

3.3. Objectives of Vocationalisation.

Vocationalisation under the +2 stage has the following objectives.

(1) In a developing country it provides productivity oriented education which is very vital for economic development.

(2) It aims at making our youth vocationally and technically educated and trained besides committing them to national goals and aspirations.

(3) It can arrest the mounting educated unemployment by matching the supply of the output of the education system to the manpower demands of the economic system.

(4) It can divert a certain percentage of students with practical aptitudes for pursuing vocational education and thereby provide manpower for the unorganised sector of the economy.

3.4. The Course of Studies :

The Higher Secondary programme in Tamilnadu has 2 broad streams (1) general education (Academic course) and (2) Vocational course. The course consists of 3 parts. Under part one, Tamil or the Mother Tongue or a classical language or any Foreign language other than English is offered. Any one of the following languages may be offered under part I. 1. Tamil 2. Hindi 3. Kannada 4. Telugu 5. Malayalam 6. Urdu 7. Gujarathi 8. Sanskrit 9. Arabic 10. Persian 11. French 12. Latin and 13. German. Under Part II English is offered. Parts I and II are compulsory for students of both the general education and vocational education streams. Under part III by way of optionals a student may choose his subjects under group A or Group B

Group A—Science and Humanities.

Any four of the following subjects may be offered by a student but in actuality 10 combinations of subjects only are available. The subjects are : 1. Mathematics 2. Physics 3. Chemistry 4. Biology (Botany & Zoology) 5. Botany 6. Zoology 7. Home Science 8. History 9. Geography 10. Elements of Economics 11. Political Science Modern Constitution and civics 12. Sociology 13. Elements of Commerce 14. Accountancy 15. Logic 16. Psychology 17. Philosophy 18. any one of the advanced languages Tamil, Sanskrit, Urdu, Arabic, Gujarathi, Hindi, Telugu, Kannada, Malayalam, Persian, Latin, English and French. 19. any one of the fine arts, a. Drawing & Painting b. Indian Music c. Western Music 20. Indian Culture. 21. Environmental studies. 22. Statistics and 23. Siddha.

Group B (Vocational course)

The vocational courses are classified into 6 occupational areas, namely 1. Agriculture 2. Home Science 3. Commerce and Business 4. Engineering & Technology 5. Health and 6. Miscellaneous The vocational courses were indentified before the introduction of the Higher Secondary Education programme by a specially constituted committee under the chairmanship of prof. A.P. Jumbulingam, the then principal, Technical Teachers Training (Southern Region) Madras.

Allocation of periods for the three parts of the course is given below in the table.

Table 3. 1. The allocation of periods :

Language/Subject	For a week of 35 periods	For a year of 180 institutional working days excluding exami- nation days	
		Academic	Vocational
Part I Language	4	144	144
Part II Language	4	144	144
Part III Optionals			
Subject 1	6	216	864 for vocational course and a related subject
Subject 2	6	216	
Subject 3	6	216	
Subject 4	6	216	
Physical Education and Community Service	2	72	72
Moral Instruction	1	36	36
Total	35	1260	1260

Note : Students offering a Vocational subject under part III Group B shall do parts I and II and a subject under part III Group A related to the Vocational subject chosen.

The above Table shows that our academic year consists of 36 weeks and in each week there are 35 periods. Students of the academic and vocational courses have equal workload. Both academic and vocational course students need to study two languages. Physical education and community service is taught for 2 periods in a week and Moral Instruction is dealt with for one period weekly. Students doing the academic course study 4 subjects as optionals under Part II Students doing vocational courses generally study one related science or social science subject besides the vocational subject.

3.5 The Scheme of Examinations :-

During the first year of the Higher Secondary course, the Terminal Examination at each District level is conducted with common question papers and the evaluation of the answer scripts is done in the respective schools by the concerned teachers. The Higher Secondary Public Examination is held at the end of the Higher Secondary Course and the examination is conducted by the Director of Government Examinations according to the guidelines of the Board of Secondary and Higher Secondary Examination for which the Director is the Chairman.

The Scheme of examinations for students of the vocational courses offering only one related subject is prescribed below :

Higher Secondary Examinations
Revised Pattern-1
(From 1982 onwards)
Candidates Offering one Related Subject

Subject 1	Hours 2	Max Marks 3
Part I	Tamil or other languages	
	Paper—I	3 100
	Paper - II	3 100
Part II	English	
	Paper—I	3 100
	Paper - II	3 100
Part III	Group A- Related subject as per syllabus or as approved by the Director of School Education	3 200
Part IV	Group B- Vocational subjects	
	Theory-	
	(Single paper covering the entire 12th Std. portion. Refer to Model Question Paper for guidance)	3 200
	Practical—I in Vocational subject	3 200
	Practical—II in Vocational subject	3 200
		1200

Students doing vocational courses with one related academic science or social science subject would have two practical examinations each carrying 200 marks. The total marks for the complete Higher Secondary Examinations is 1200 only. This shows that Practical gets 1/3 of the weightage in terms of marks for the above mentioned students.

The students offering vocational courses with two related science or social science subjects will have the following pattern of examinations.

Revised Pattern II
Candidates Offering two Related Subjects

Subject		Hours	Max Marks
Part I	Tamil or other languages		
	Paper I	3	100
	Paper II	3	100
Part II	English		
	Paper I	3	100
	Paper II	3	100
Part III	Group A—Related subject I Additional related subject II	3	200
	(As per syllabus or as approved by the Director of School Education; common with General Education the subject foundation science for the Vocational subjects under Health Area.)	3	200
Part III	Group B Vocational Subjects theory	3	200
	(Single paper covering the entire 12th Std portion-Refer to Model Question paper for guidance)		
	Practical in Vocational Subjects	3	200
			<u>1200</u>

(Note : Only one practical covering the entire practical portion as per syllabus for 12th Std.)

Hence students of Vocational courses with two related subjects of an academic type under Part III group 'A' will take two theoretical examinations in the related subjects each carrying 200 marks. In the vocational subject there will be one theory examination for 200 marks and in the practical examination another 200 marks. This means that these students would have Vocational education with much less weightage of marks on practical aspects of their vocational subjects.

3.6. Vocational Surveys and Course Selection :

Vocational surveys were conducted in Tamilnadu.

To identify the vocational needs of a geographical area and to prepare an appropriate scheme of vocational courses it is quite essential to conduct a vocational survey in the area. Such a survey determines the current available occupational skills and the requirements of the foreseeable future. In view of the fact that middle level personnel have limited mobility, the youth of a geographical area should be helped to convert the existing and emerging situations into gainful employment or self-employment opportunities.

Aims and Objectives of the Vocational Survey :

1. To explore the employment potential of skilled and qualified persons in the district under the control of all agencies.
2. To assess the employment opportunities during the next 5 or 10 years in the industrial, commercial and agricultural spheres.
3. To identify and locate the occupational areas where there is scope for self-employment.
4. To assess the capabilities of schools to be upgraded as higher secondary schools so as to introduce new vocational courses.
5. To identify the facilities for on-the-job training.
6. To identify the professional people whose services could be best utilised.

Procedure of Vocational Survey :

To achieve all the above-mentioned objectives and aims of vocational survey, the Government of Tamilnadu, in G. O. Ms. No. 375 Education dated 25-2-78, sanctioned the vocational survey of districts in the State three of which, viz, Madras, Coimbatore and Madurai are considered to be advanced districts and the other three, viz, Salem, South Arcot and Tiruchy are considered to be less advanced districts. Survey in the above 6 districts was completed during July - November 1978. In the remaining 9 districts, viz.,

Kanyakumari, Tirunelveli, Ramnad, Thanjavur, Pudukottai, North Arcot, Chengalpattu, Dharmapuri and the Nilgiris, the survey was conducted during April - June 1979 as per order No. F. 21-19/77. Sch. 3 (V. E.) dated 16-3-79 of the Government of India.

To man the survey team, a top level officer in the grade of Chief Educational Officer/Deputy Director of School Education, a Senior Research Fellow in the cadre of District Educational Officer and two Last Grade Government Servants were sanctioned. The period of survey was 3 to 4 months. Adequate training was given for 3 days in Madras to all the District Educational Officers and Chief Educational Officers under the guidance of Dr. C. V. Govinda Rao of the NCERT, New Delhi.

Necessary primary and secondary data was collected from the concerned sources. The primary data was collected from the various departments from the latest statistics available with them. Secondary data was collected through questionnaires and schedules issued to various agencies.

Heads of various departments, managers of industrial concerns, public undertakings, important persons connected with education and all those who could help in the designing of new courses were interviewed and their opinions sought. They showed a keen interest in the survey and were very eager to know all aspects of vocationalisation. Opinions from the Heads of Educational Institutions were also obtained through a set of proformas and by way of interviews. The survey team had the benefit of interviewing and discussing the availability of employment potential including self-employment and entrepreneurship with eminent educationists, industrialists, farm managers, etc. These helped the survey team to formulate their conclusions.

The vocational courses had been introduced in July 1978 on the basis of the survey made by the special staff sanctioned in the Directorate of School Education. The District Vocational survey conducted subsequently in the years 1978 and 1979, endorsed the recommendations made earlier and suggested some more courses. The list of vocationalised courses introduced in Tamilnadu is presented as Annexure I.

3.7 Staff Pattern for Vocational Courses :

The vocational courses needed special categories of teaching and training staff. The Vocational Education committee under the Chairmanship of A.P. Jambulingam had identified not only the vocational courses that could be started, but also laid down the qualifications required on the part of the teachers of such courses. Usually a degree in the concerned subject was specified with the exception Engineering and Technology course for which a diploma in the concerned subject was deemed adequate. Besides the qualification, for certain vocational courses, especially for courses in 'Commerce and Business', a few years of experience had been stipulated for the teachers, as a condition to

eligibility for appointment as vocational teachers. Vide Annexure II for prescribed qualifications for teachers of different vocational courses.

Since the erstwhile multi-purpose schools in Tamil Nadu have been abolished consequent on the introduction of higher secondary education, the teachers handling the bifurcated courses in Standard X and Standard XI (nearly 500) were redeployed to man some of the vocational courses as full-time teachers.

For meeting the requirement of teachers with practical experience in the concerned field, it was felt necessary to introduce the scheme of part-time teachers for the vocational courses. It would be desirable to have these part-time teachers from the locality of the school itself. Hence the Government of Tamilnadu sent circulars to all the Heads of Departments requesting them to spare their staff whenever they were eligible and willing to work as part time instructors for the vocational courses in the Higher Secondary schools. The schools were instructed to adjust their instructional time table to suit the conditions of such part-time staff coming from other organisations. The Government have sanctioned the creation of two posts of part-time vocational instructors for each vocational classe, except in the case of classes handled by teachers of the erstwhile bifurcated course. The part time teachers were paid Rs. 150/- P. M. originally and more recently Rs. 300/- P. M. (from April 1984)

The Headmasters were empowered in the case of Government schools to select their part-time vocational instructors and get the formal appointment order from the Chief Educational Officers for such appointments. In the case of aided schools the correspondents were empowered to make appointments in consultation with their Headmasters and get the formal approval of the Chief Educational Officer of the District. Because the Headmasters were given the power to make appointment of such part-time staff, it was possible to fill these places quickly and also get local personnel for these posts.

By way of giving examples to show how some personnel of certain departments and other public organisations could be utilised as part-time teachers for the vocational courses the following data is provided :

Category of Vocational Courses	Staff to be utilised on part - time basis from Institutions
Agriculture	State Seed Farms ; Rural Extension Training Centre ; Research Stations of Tamilnadu Agricultural University.
Engineering and Technology	Agro Industries Corporation, Agro Engineering and Service Co-operative Federation Ltd., etc., Public Works Department, TANSI, etc.
Commerce & Business. Health	Recognised Commercial Institutions, Auditors, etc., Hospital Staff, Staff of Institutions (Medical Colleges etc.) under D. M. E. & D. H. S., established private agencies etc

The teachers of the erstwhile bifurcated courses had fairly adequate pedagogical training. There were 4400 part-time teachers. Most of the part-time teachers had not undergone any teacher training. Therefore with the assistance of NCERT and Tamilnadu SCERT, some of these teachers were provided with in service orientation courses for enabling them to handle the courses competently.

The Higher Secondary schools offering the vocational courses were linked with production / service establishments in their locality for the purpose of giving these students certain amount of work orientation in the vocational areas of their choice.

Annexure-III shows the details relating to the vocational courses and the production / service centres to which they had been linked besides the scope for self-employment on completing those courses.

3.8 Linkage with work / service establishments :

The heart of the vocational course lies in the practical component of the curriculum. And as such the practical training as well as the work experience that could be provided in production / service establishments either in the public or in the private sector could become a matter of very great significance. The Headmasters effect arrangements for work orientation for their students in such centres. Vocational education cannot be completely and adequately done by School Education Department working in isolation and this was realised from the very beginning in Tamilnadu. Therefore a supreme effort was taken to develop these golden linkages with work establishments for giving opportunities for adequate skill development for these students. Only when the students develop skills to the required level they would have a sense of confidence. Both for wage employment and more for self employment such work related competencies are important. One of the expectations of the planners of vocational education at the +2 stage is to provide these students with worthwhile work related skills. When these skills are developed adequately by associating these students with work centres, the productivity of the country would go up in due course.

3.9 Tamilnadu in the lead :

In the very first year of introducing the Higher Secondary education with vocational courses, Tamilnadu was in the lead with regard to total number of students enrolled in the vocational courses, as could be seen from the following figures.

State	No. enrolled in vocational courses
Tamilnadu	24,400
Gujarath	3,516
Karnataka	2,412
West Bengal	2,300
Maharashtra	2,400
Delhi	1,180

In the very first year of introduction 1,153 vocational courses came to be started in 709 Higher Secondary Schools. Out of them 430 schools had more than one vocational course. The vocational courses were in all the six major vocational areas. In terms of numbers the most popular courses were in Commerce and Business, because 11,460 were doing these courses. The second popular courses were in Engineering and Technology as shown in Table below.

Table 3.1 The number of vocational courses and student enrolment therein :

Subject (1)	Number of courses (2)	Rank (3)	Number of students (4)
1. Agriculture	145	3	2,600
2. Home Science	110	4	2,000
3. Commerce and Business	474	1	11,460
4. Engineering and Technology	352	2	6,700
5. Health	68	5	1,600
6. Miscellaneous	4	6	40
	1,153		24,400

The Matriculation School system and the Anglo-Indian School system have also adopted the higher secondary pattern. Taking all the five categories of management namely Government, Corporation, Aided, Matriculation and Anglo-Indian, there were in all 912 Higher Secondary Schools in Tamilnadu in the first year of implementing the + 2 programme in 1978-79. The number steadily rose over the years and in '84-'85 there were 1421 schools in Tamilnadu. When we take into consideration the +2 stage of other systems such as Kendriya Vidyalaya, Central Board of Secondary Education, and Indian School Certificate there were in all 1474 higher/senior secondary institutions in Tamilnadu. Compared to the Tamilnadu system of higher Secondary Education, the size of others at the +2 stage is very small in Tamilnadu. This report centres only on Tamilnadu system of Higher Secondary education. The particulars relating to number of Higher Secondary schools managementwise in 1984-'85 in Tamilnadu is presented in Table 3.2.

**Table 3.2 HIGHER SECONDARY SCHOOLS IN TAMILNADU IN 1984 - 85
MANAGEMENT - WISE**

Year	No. of Schools upgraded Year-wise	Government			Corporation			Aided			Matric			Anglo Indian			Total			Kendriya Vidyalaya	C. B. S. E.	I. S. C.	Total
		Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total				
1978-79	912	379	34	413	35	16	51	295	111	406	9	7	16	16	10	26	734	178	912	-	-	-	912
1979-80	182	468	43	511	35	18	53	347	133	480	17	13	30	16	10	26	883	217	1100	9	35	8	1152
1980-81	144	524	63	587	35	22	57	387	156	543	21	10	31	16	10	26	983	261	1244	8	41	8	1301
1981-82	105	576	77	653	36	24	60	414	161	575	25	10	35	16	10	26	1067	282	1349	8	41	9	1407
1982-83	11	580	77	657	36	24	60	414	161	575	32	10	42	16	10	26	1078	282	1360	8	39	8	1415
1983-84		580	76	656	36	25	61	415	160	575			52			24			1368	11	37	9	1425
1984-85		608	78	686	36	24	60	418	167	585			63			27			1421	11	37	5	1474

3.10 Committee on restructurisation of vocationalised Education :

The Government of Tamilnadu constituted a high power committee on Higher Secondary Vocational Education Restructurisation under the chairmanship of Dr. V. C. Kulandaiswamy, Vice-Chancellor, Anna University, as per G.O. Ms. No. 907, Education (HS) Department, dated 20-1-1982.

The following constitutes the terms of reference of the committee :

- i. to take stock of the present situation with regard to the vocational subjects in the Higher Secondary Courses and suggest modifications and additions in the curricula and the syllabi with a view to facilitating greater vertical mobility and to fit for job opportunities.
- ii. to suggest linkages between the vocational stream in the Higher Secondary Schools and the Polytechnics and the Industrial Training Institutes.
- iii. to design curricula and syllabi for post-higher secondary diploma courses for the various vocational subjects in the Polytechnics and to start specially designed courses in Polytechnics for Higher Secondary vocational students.
- iv. to formulate bridge courses for students, and training programmes for vocational teachers, of the Higher Secondary Schools.

The committee submitted its report to the Government by December 1982. The major recommendations of this committee are summarised and presented below :

1.0 Qualitative Improvement,

1.1 The skills required in the various courses may have to be identified through periodic vocational surveys,

1.2 Every vocational course must be provided with minimum workshop, laboratory equipment and other infrastructural facilities.

1.3 Each course should have at least one full time teacher.

1.4 The available facilities in the community around the school should be utilised for skill development and training and such utilisation may be reviewed annually.

2.0 Apprenticeship Training :

2.1 Those students seeking employment may be provided with apprenticeship training for one year.

2.2 The Government of India may be requested to amend the existing apprenticeship act for extending apprenticeship facilities to these students and also permit them to get stipends on par with sandwich diploma students.

2.3 The Government of Tamilnadu should constitute a State Council of Vocational Education. The council will award diplomas for those completing apprenticeship. However the two year Higher Secondary Examination certificates will continue to be awarded by the Director of Government Examinations.

3.0 Employment and Job Market

To promote scope of employment for the vocationalised stream students, the job requirements in private and Government organisations may be reviewed and the vocationalised courses may be prescribed for appropriate jobs immediately. Other things remaining the same, these candidates may be given preference over others,

4.0 Administering Vocationalised Education.

4.1 The direct responsibility for the vocationalised education at the +2 stage may be given to an Additional Director of School Education (Vocational) who will be assisted by six Deputy Directors who are specialists in the six vocational areas.

4.2 A vocational survey unit may be established in the Directorate of School Education.

4.3 The district level Vocational Educational Councils may be reconstituted.

4.4 A Board of Studies for each one of the six vocational areas may be constituted.

5.0 Vertical Mobility :

5.1 To facilitate vertical mobility of the vocationalised stream students, the courses offered under Part III need modification to ensure better preparation in sciences/social sciences for making the present position of ineligibility for higher education real and practical. The combination of subjects under Part III may be modified to consist of the following alternatives.

	Marks
Combination (1)	
One related subject from Group A	200
Three vocational subjects from Group B	600
Combination (2) :	
Two related subjects from Group A	400
Two vocational subjects from Group B	400

Both the combinations must be available in a Higher Secondary School and it is left to the student to choose either of them.

If a student chooses combination (1), he may take three vocational subjects and if he opts for combination (2), he needs to do only two subjects. In order to facilitate such student-choice, the vocational subjects must be structured to consist of modules.

5.2 In order to provide for flexibility in the mix between theory and practical for the different vocational courses, the following two patterns of relative weightages have been suggested.

	Marks
Pattern (1) -Theory	50
-Practical	150
Pattern (2) -Theory	100
-Practical	100

The mix between theory and practical need not be the same for all the three vocational subjects in a course. A combination of patterns (1) and (2) may be adopted,

5.3 The question paper for theory examination will consist of three parts-A, B and C and each carrying 50 or 100 marks. Each part will be written in separate answer books. If a student does two subjects under Part III he would answer only those two parts and a student choosing three subjects will have to attempt all the three parts.

5.4 In the interest of providing adequate opportunities for the vocationalised stream students to take the three year degree courses, the universities may have to restructure their courses by introducing changes such as :

- (i) having the possibility of certain subjects being different between the academic stream and vocationalised stream during the first semester of the degree programme.
- (ii) offering such theory subjects to the vocationalised stream students as might have been missed by them in the +1 stage, either as compulsory subjects or as subjects for auditing.
- (iii) granting exemptions to the vocationalised stream students from practical and/or theory subjects, the equivalent of which they might have completed in the +2 stage.
- (iv) having a common programme for the students of both the streams from the second semester.

5.5 New courses such as Two year Post Higher Secondary Diploma courses may be introduced at the sub-university level in the polytechnics and in professional institutions in fields like Agriculture, Veterinary Science and Para Medical Services.

5.6 At present the successful vocationalised stream students are admitted in the 2nd year of the Diploma Course in Engineering in the Polytechnics. Similarly they should be treated in the Institutes of Commerce, Nursing Schools and other sub-professional level institutions.

5.7 A certain percentage of seats may be reserved in professional courses as well as courses in Commerce, Home Science, Corporate Secretaryship and the Sciences. This reservation is intended to enable at least 20% - 25% of the vocationalised stream students to pursue education at university or sub-university level.

These recommendations are now being considered by the Department for more effective implementation of the scheme.

3.11 Apprenticeship and Placement :

The Board of Apprenticeship Training, Government of India has launched upon training programme as an experimental measure in the name of "Special Vocationalised Education Training Scheme" (SVETS) for the sake of the students completing the vocationalised education programmes at the Higher/Senior Secondary stage of education.

In the above scheme about 3000 candidates in 19 specified vocational courses from all over the country are provided with opportunities for doing Apprenticeship Training in recognised work establishments. As many as 1300 positions were ear-marked for Tamilnadu which has the largest number of vocational students in the country. This training is now being implemented on a voluntary basis by the Regional Board of Apprenticeship Training. Under the scheme the students completing vocationalised courses get selected for being placed in industries/service establishments for apprenticeship training and are entitled for a stipend of Rs. 200/-p. m. for six months. This scheme has brought cheer to the students doing the vocationalised courses. But the number of positions available is so small compared to the number of students who are engaged in vocational courses in Tamilnadu.

It is appropriate that the National Working Group on vocationalisation of education constituted by the Chairman, All India Council for Technical Education has submitted the following recommendations in its report (August 1985)

- (i) The proposed amendments to Apprentices Act 1961 (No. 52 of 1961) as amended by the Apprentices (Amendment) Act 1973 (No. 27 of 1973) should be passed expeditiously.
- (ii) The Central Board of Apprenticeship Training through its Regional Boards should evolve a suitable training programme in collaboration with the National and State Councils of vocational Education.
- (iii) The non-government organisations such as Lions Club, Rotary Club, Association of Engineering Industries, Professional Societies, Women's Associations and Social Service Leagues should be encouraged to take part in finding training positions.
- (iv) The Boards of Apprenticeship Training should progressively increase the number of training positions to cover at least 70% of the total number of vocational students in the country. The training period may be increased from the present six months to one year to enable the students to acquire adequate field experience.
- (v) Career guidance councils for helping the vocationalised stream students may have to be established in each of the major schools and at the office of the District Vocational Education Officer.

3. 12. Tamilnadu in the National Scheme :-

Since the inception of the programme of vocationalisation of higher secondary education, 9 states and 4 union territories have gone in for implementation. The details are given in Table 3.3. The current intake in the vocational stream is of the order of 60,000 in over 1,500 institutions. It is essential to point out that the number of Higher Secondary Schools and Intermediate and Junior Colleges in the country is nearly 14,000 and their intake is of the order of 22 lakhs (1982 data). Only 27% has been covered by vocationalisation in the past seven years.

Data is presented in Table 3. 8

Table 8.8 Number of Institutions Running Vocational Courses at the + 2 stage and Enrolment therein

Sl. No.	State/Union Territory.	No. of Institutions						
		1977	1978	1979	1980	1981	1983-84	1984 85
1.	Andhra Pradesh	Nil	Nil	22	77	82	107	108
2.	Gujarat						66	54
3.	Karnataka	13	45	76	82	95	109	132
4.	Maharashtra	Nil	33	107	155	206	250	314
5.	Tamilnadu	Nil	709	911	944	1014	N. A.	N. A.
6.	West Bengal	69	63	62	62	53	N. A.	N. A.
7.	Delhi	17	17	17	15	16	15	22
8.	Andaman Nicobar Islands	Nil	Nil	Nil	Nil	1	Nil	N. A.
9.	Pondicherry	Nil	5	5	5	5	7	N. A.
10.	Kerala						21	71
11.	Assam						16	N. A.
12.	Haryana						22	29
13.	Goa, Daman and Diu							3

Note : The enrolment data is presented in the next page.

Sl. No.	State/Union Territory	Enrolment										
		1977-78		1978-79		1979-80		1980-81		1981-82		1983-84
		XI	XII	XI	XII	XI	XII	XI	XII	XI	XII	XI
1.	Andhra Pradesh	Nil	Nil	Nil	Nil	516	Nil	1350	516	1550	1350	3310
2.	Gujarat											8701 **
3.	Karnataka	1080	Nil	2148	827	2726	1713	3085	1619	2901	2179	4450
4.	Maharashtra	Nil	Nil	1958	Nil	5463	1707	7385	4794	9039	6605	10508
5.	Tamilnadu	Nil	Nil	24400	Nil	26942	25013	31973	25115	32850	29066	N.A.
6.	West Bengal	2498	1870	2350	2400	2285	2300	2663	2275	1517	1567	N.A.
7.	Delhi	700	Nil	484	494	478	484	538	417	778	523	734
8.	Andaman Nicobar Islands	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	25	Nil	N.A.
9.	Pondicherry	Nil	Nil	199	Nil	180	193	184	159	254	225	93
10.	Kerala											819
11.	Assam											N.A.
12.	Haryana											1920
13.	Goa, Daman and Diu											

* NCERT Data.

** For new courses at +2 stage.

CHAPTER 4

SPOT LIGHT ON COIMBATORE

4-1 The Unique place of Coimbatore in Tamilnadu :

From the very beginning of the programme of vocationalisation of education at the +2 stage in Tamilnadu, Coimbatore has been considered to be eminently suitable for this experiment in education. There are several variables that are associated with this favourable climate that had been prevailing in Coimbatore District. There has been a long tradition of close linkage between educational institutions and industrial establishments in that district. It is one of the most progressive districts of the State. It also has the good fortune to have number of leading educational institutions in that district. It has also produced great stalwarts in the field of vocationalisation of education.

4-2 National Seminar on vocationalisation of education :

The national seminar on vocationalisation of education at the +2 stage was organised by the Department of Education, Science and Technology, Government of Tamilnadu, in collaboration with the National Institute of Educational Planning and Administration (NIEPA), New Delhi from 12-2-83 to 15-2-1983 at the P.S.G. College of Technology, Peelamedu, Coimbatore. The Seminar was organised based on a decision of Government of India taken on the occasion of Education Secretaries' Conference held at New Delhi on 4th and 5th January 83, wherein it was felt that the experience in Tamilnadu in the field of vocationalisation at +2 stage of education was exemplary and therefore was worth sharing with other States and Union Territories of the country.

The main objectives of the Seminar had been :

- (i) to reflect on the experiences of Tamilnadu in the field of vocationalised education so that all the States should get the benefit of this experience.
- (ii) to discuss possible means to overcome the problems faced while implementing this programme.
- (iii) to evolve suitable methodologies for introducing the vocationalisation scheme at +2 stage in the states where they have not been introduced and
- (iv) to develop strategies for forging linkages with various production units get gainful employment.

The Seminar was inaugurated by Prof. Nurul Hasan, Vice-President, CSIR and former Minister for Education, Government of India, under the Chairmanship of Hon'ble Thiru C. Aranganayagam, Minister for Education, Tamilnadu. Smt. Serla Grewal, I.A.S., Secretary, Union Ministry of Education had participated in the seminar and given direction to the Seminar.

Thiru C. Ramdas, I.A.S., Commissioner and Secretary to government, Department of Education. Science and Technology had been the over all elevate of the seminar and been its spearhead. Thiru J. A. Ryan, Director of School Education and SCERT and Non-Formal Education was incharge of all local arrangements. Prof. G. R. Damodaran, Director, PSG Institutions had been the Chairman of the Programme Organising Committee. Prof. Moonis Raza, NIEPA and his colleagues have contributed to the planning and the conduct of the Seminar in collaboration with the Department of Education, Science and Technology, Tamilnadu. Distinguished educationalists such as Dr. V. C. Kulandai-swamy, Dr. Subbayyan, Dr. T. N. Dhar, Prof C S Jha Dr. Rajammal, P Devadas and many other distinguished academics have worked as Resource Persons and in various other capacities and contributed to the deliberations.

A Video programme in colour on Vocationalisation of Education at +2 stage in Tamilnadu produced by Krishnaswamy Associates, Madras was presented in the seminar and this was found as a highlight in the seminar. An exhibition on vocationalised education at +2 level has been put up by Higher Secondary Schools of Coimbatore District to give them an idea of the programme in progress in these schools relating to Vocationalised Education.

The Seminar was attended by Secretaries and other officials of Education Department of different States and Union Territories in India.

4-3 Schools in action in Coimbatore :

Group visits to Higher Secondary Schools and production units :

The delegates of the seminar organised themselves into 5 groups and made visits to Higher Secondary schools implementing vocationalised education programme as well as production units wherein the students of these courses were receiving their practical training. The maximum distance covered by the delegates during these visits was 100 Kms. The five group reports are as follows.

Report of Group. 1 on field visits by Sri A. K. R. Mandal, Special Secretary, Education Department, Government of Bihar.

The group visited Government Higher Secondary School, Anamali and observed the vocational courses in Agriculture and 'Commerce and Business Management'. There

were seven students in this course and they evinced keen interest. In the previous batch only one candidate got employment as representative in SPIC and others had gone up for higher education. The group found the girl students of the Commerce and Business Management course evincing keen interest.

The group also visited Natchimuthu Polytechnic at Pollachi wherein the students from Government Higher Secondary School, Kottur were getting trained in the vocation of the general machinist. The students were coming to the workshop once a week or during holidays for training.

Report of Group-2 on field visits by Dr. S. K. Baruah, Officer on Special duty, Government of Assam.

The group visited Sri Avinashilingam Higher Secondary School for Girls and observed the activities of the students, in Dress-making, child-care and Food preservation sections. The group was impressed with the interest shown by both the teachers and the students. The group also visited the Government Polytechnic for women at Coimbatore and found the close inter-action between the institute and the industries in the area.

Report of Group-3 on Field visits by Sri K. L. Narasimhan, Joint Secretary, Vocational Education, Board of Intermediate Education, Andhra Pradesh.

The group visited the Mani Higher Secondary School, SBKV Higher Secondary School and Corporation Girls Higher Secondary School. The group found the participation of the part-time teachers in the programme was very useful. They also found the obsolete machinery of the textile industry was readily available for the school children for the basic practice in textile technology. In SBKV Higher Secondary School the boys belonging to the Gujarathi community were found to be happy in the auditing course because they could assist their parents in the family business. There was a feeling that the conditions for public employment should change and that would help the candidates doing textile technology in getting suitable jobs. The doctor-in-charge of Nursing felt that the nursing course, students under him were very competent. Since this course had not got the recognition from the Nursing Council of India, the girls completing the course could get only a small salary of Rs. 150/- p. m. while they deserve better salary.

Infrastructural facilities provided in schools could be improved.

Report of Group-4 on Field Visits by Sri Manmohan Agrawal, Additional Director of Education and Officer on Special duty Government of Rajasthan, Jaipur.

The group visited four institutions :

(1) Sarvajana Higher Secondary School ; (2) P. S. G. R. Krishnammal Girls Higher Secondary School ; (3) Government Boys Higher Secondary School, Ondiputhur and P. S. G. G. Kaniya Gurugulam. The group felt happy that the students completing vocational courses in Engineering and Technology were admitted in to the second year of the diploma course in Polytechnics. There should be similar provision for students of other courses for getting admission in non-technical courses. Such an action would attract better quality of students into the vocational courses.

2, The group felt that leaving the teaching of vocational courses to part-time teachers might not be adequate in all situations. Full time teachers need to be placed as co-ordinators for these courses.

3) Since vocational courses are to be result-oriented, there should be continuous self-evaluation by students and teachers.

4) In Tamilnadu a momentum has been created favouring vocationalisation and students, parents and the industry show confidence in the programme.

Report of Group—5 on Field Visits by Prof. A. K. Mishra, Professor and Head, Vocationalisation Unit, NCERT, New Delhi.

The group visited K. G. Girls Higher Secondary School, Annur where nursing is being taught and visited the K.G. Hospital where the students received practical training in nursing. The group visited the Suthantra Higher Secondary School, Athipalayam and discussed with students and teachers engaged in the computer programming course. The group was pleased with its inter-actions with personnel both in the school context as well as in the institution providing the practical training to the students.

4 -4. The Follow up Study of the vocational students in Coimbatore :

1) Coimbatore District had 84 Higher Secondary Schools and in all 3,957 out of 19,851 at the Higher Secondary stage were under-going the vocational courses in 1982 83. Therefore Coimbatore District had a sizable number of students in the

vocational programme. A study was made by the Directorate of School Education in this District to determine the status of these students following their completion of the Higher Secondary stage of education. The purpose of this study was to determine how many students appeared for Higher Secondary Examinations in vocational subjects, how many had passed and among those who passed the number and percentage of those going for different institutions of higher education. Besides the above, the study was planned to find out how many were gainfully employed, unemployed, self-employed or "their position was not known" among those who had passed and among those who had failed in the public examinations.

A proforma was prepared for this purpose by the Assistant Director of Education (Statistics) and a senior Officer went to Coimbatore District and briefed all the Headmasters as how to furnish the required data course-wise for their schools. The Headmasters had furnished the particulars for 3 years i.e. 1979-80, 1980-81, and 1981-82. The tabulated data is presented in Annexure-IV

1. Agricultural Courses : (Major area) Though Coimbatore district is mainly a centre for textile mills and engineering industries yet it has sufficient cultivable land for agricultural purpose. Among 30 vocational courses offered in this district, 5 belong to the agricultural occupational category. Among those students who passed 41% were employed in 1980, none in 1981 and only 6% in 1982. Among those who had failed a considerable percentage secured Self-employment in all the three years displaying their courage, as well as required skill development. Agro-based industrial course was started only in 1980-81 and those took the examination in April 1982. The number of courses offered in the agricultural occupational area has been increasing year after year during the period of this review.

2. Home Science : (Major area) The most wanted courses in this major area are Dietetics, Nutrition and Food Preparation, Child Care and Nutrition Home Science and Dress Designing and Making. Dietetics, Nutrition and Food Preparation Course was available in 4 schools with the strength remaining as 66 in 1980, 29 in 1981 and 33 in 1982. The number of passes was reported as 30 (45%), 13 (45%) and 17 (52%) respectively for these three years. Among those who passed, 46% in 1980, 62% in 1981 and 71% in 1982 joined the Arts and Science Colleges. 20% in 1980 and 29% in 1982 got other employment. Child care and Nutrition Course was introduced in 5 schools with a strength of 89 in 1980, 37 in 1981 and 41 in 1982. About 50% pass was noticed in this course, and of that an average of 40% joined Arts and Science Colleges every year. 13% is reported to have got self-employment relevant to this Vocation in 1980 and the percentage increased to 22 in 1982. Among the failed candidates also, a good number is reported as either employed or self-employed.

Dress Designing and Making was offered in 6 schools which presented 56 students in 1981 and this declined to 4 schools with 47 students in 82, 63% of the candidates passed in 1981 and 74% in 1982. Among those who passed in 1981, 46% have joined the college course, 11% remain unemployed and 14% have self-employment relevant to this vocational area. 6% have self-employment not relevant to this vocation and the position of 23% has been reported unknown. Of those who passed in 1982, 32% have joined the college course, 9% remain un-employed and 11% have self-employment relating to this vocation. Among those who failed, 48% in 1981 and 25% in 1982 have been reported to be self-employed. Perhaps they have taken to tailoring.

Food Preservation Course was introduced in 1981 only. It is reported that 85% of those who passed the Food Preservation Course have joined the Arts and Science Colleges.

CHAPTER 5

SIGNIFICANT FEATURES OF THE TAMILNADU EXPERIENCE

5.1 THE POLITICAL WILL :

The most significant feature of Tamilnadu experience in Higher Secondary Vocationalised Education has been the strong political will for implementing the scheme. The Government of Tamilnadu have virtually pushed the scheme to all the parts of the state to such extent that this has become perhaps the most popular scheme implemented during the last decade in secondary education. The Department of Education had received the total support of the Government in all its endeavours in carrying out this innovative programme in a massive scale of operation.

5.2 Inter departmental collaboration :

Right from the inception of this programme in 1978-79 in Tamilnadu the Department of School Education had received the support of all other Government Departments in introducing the programme and later implementing the programme vigorously. The collaboration from other Departments had manifested itself in a variety of forms. Most noteworthy among them are the departments have permitted their staff to work for the Higher Secondary Schools either as part time teachers or as examiners, they had permitted their staff to provide practical training for the students of vocational courses in production/service units and they have formulated modified conditions for public recruitment showing favourable consideration for those who complete the vocational courses as compared to others without vocational training. It has been realised that this historic task of vocationalisation at the Higher Secondary stage could only be effective with the extensive cooperation from various other departments and organs of the Government.

5.2 The Headmaster in a pivotal role :

The Headmasters have been given much scope to show their full leadership in implementing the programme in their campuses. The choice of the vocational course that has to be introduced in a Higher Secondary School, the part-time teachers to handle the vocational courses, the job of linking the school with the production/service centre in the locality for offering vocational training to the students are some of the major items, that are handled deftly by the headmasters. Between 1978 and 1985 the Headmasters and Headmistresses of the Higher Secondary Schools in Tamilnadu

have shown tremendous initiative in effecting this scheme successfully. The headmaster is readily reckoned as the right person who should be responsible for decision making at the school level.

5.4 District level vocational Education committee :

At the revenue district level a committee on vocational education for each district was set up with the District Collector as the Chairman (who is also Chairman for District Development Council) and the Chief Educational Officer as the Convenor. All the district level officers of the departments such as Medicine, Public Health, Industries and Commerce, Employment and Training etc. are the other members of the committee. Through this strategy, the major governmental executives at the district level were placed together in the committee so that they could effectively plan and implement the scheme cohesively.

5.5 Infrastructural facilities :

Since the Higher Secondary Schools were created originally by upgrading certain select high schools, they had fairly good facilities to start with. The requirements in terms of school building, laboratory and library were met with by the quick steps taken by the department. The Government had sanctioned Rs. 12 crores towards the construction of one class room and one laboratory in each of 644 Government Higher Secondary schools and out of this 582 have already been completed. In the case of non-government schools, namely, aided and local body schools a scheme of matching grant to the tune of 40% of the expenditure on building and equipment subject to a maximum of Rs. 1. lakh per each school had been sanctioned. About 525 Higher Secondary Schools under non-government management have so far been admitted for aid under this scheme. For speedy supply of equipment required for schools the Government of Tamilnadu had placed orders with the Tamilnadu Small Industries Development Corporation (SIDCO) for procuring and supplying at a total cost of Rs 6.24 crores. By the above step the delay in the supply of laboratory equipment had been averted. Besides equipments for vocational subjects could be purchased from amenity fee funds, funds of private managements and from the funds of parent Teacher Association of the school.

5.6 The teacher factor :

By engaging part-time teachers it became possible to introduce the teachers who had practical training for starting the vocational courses. Today there are 4300 part-time vocational teachers in Tamilnadu. They were paid a monthly remuneration of Rs. 150/- p. m. and later this was raised to Rs. 300/- p m. with effect from April 1984. These part-time teachers bring their diverse background to the vocational courses. The National Council of Educational Research and Training and the State Council of Educational Research and Training have come forward to provide in-service

pedagogical orientation programme for some of the teachers. With the assistance of the NCERT, Continuatin education centres in the following places are being run for the teacher development purposes.

1. Teacher's Centre SCERT, Madras-600 006.
2. Sarvajana Higher Secondary School, Peelamedu, Coimbatore.
3. M. S. P. Solainadar Higher Secondary School, Dindigal.
4. Dr. ACTC Model Higher Secondary School, Karaikudi.

5.7 College and Polytechnic complex :

There are 188 colleges in Tamilnadu. Besides, Tamilnadu has the largest number of Polytechnics in the country. Most of these institutions are well equipped. With a view for full utilisation of their resources, the Higher Secondary Schools in their neighbourhood have been attached to them. Under the above scheme the Higher Secondary students are able to use such equipments of the polytechnics/colleges.

5-8 Vocational Monitor System :

With a view to inculcate leadership quality among vocational students the renewed ancient monitorial syste which was emulated by British as the Madras system has been revived. Under this scheme the vocational teacher selects the most suitable one among the students as the vocational monitor, who is expected to assist the teachers. Such a student is given small incentive of Rs. 20/- p.m and this sum is considered a boon by many poor students in rural areas

5-9 Guide books :

Since the number of students offering vocational courses is not large enough to warrant printing and publication of text books by the Tamilnadu Text Book Society, a new scheme of guide books had been brought out using the foto-printing process. The guide books have been carefully prepared by expert practitioners in respective fields. These books are available for about 55 vocational courses.

5-10 The growth of vocational stream :

In 1984-85 out of 1421 Higher Secondary Schools there are 969 Higher Secondary Schools offering totally 1432 vocational courses. Out of 332 lakhs of Higher Secondary students in 1984-85, 61, 520 (about 19%) students are studying the vocational courses as detailed below.

Major area to which the vocational course relates. 1	Number of students		Total 4
	Boys 2	Girls 3	
Agriculture	4,123	375	4,498
Home Science	132	2,193	2,325
Commerce and Business	19,150	14,433	33,583
Engineering and Technology	14,476	190	14,666
Health	2,686	2,988	5,674
Miscellaneous	128	628	756
Total	40,695	20,807	61,502

Courses in computer appreciation have been introduced during 1984-85 in 1 Higher Secondary school under a scheme implemented with the assistance of Government of India as a national programme. Besides in 1984-85 the Higher Secondary schools have been permitted to allow the students of the general stream to offer one vocational subject in lieu of one academic subject out of the four subjects under part III. There fore even the students of the academic courses if they so desire could take one vocational subject.

5.11 People's movement ;

The Tamilnadu experience in Higher Secondary vocationalised education is largely a product of a big wave of popular enthusiasm for "relevance in education". The people of Tamilnadu are keen to provide useful education for the children at the plus two stage. The people are anxious to link education with employability and productivity. Education is viewed as an important input for all round development of the community. Even though all the students who pass out of the Higher Secondary vocational courses are not necessarily self-employed or wage-employed, they are seen to possess the employability factor. That is only while other states are slow to introduce vocational education and those that have introduced already have restricted it to a managably small percentage of their students, Tamilnadu has covered 19% of the Higher Secondary population with vocationalisation. The people of Tamilnadu feel that the vocationalised education is far better for their children who are receiving it than mere academic education because sooner or later these students would be able to pursue careers gainfully. This is the big defference in the perception of people, that careful researchers can note in Tamilnadu which is significantly rcsponsible for the "leap forward" stage by Tamilnadu.

CHAPTER 6

MILES TO GO

6.1. VERTICAL MOBILITY

The students of the vocationalised courses should be able to continue their education in the same speciality or in a closely related speciality after they complete Higher Secondary stage, if they wish to have further education. In Tamilnadu all the vocational courses are for two year duration. It should be possible to involve other agencies such as school of Nursing, school of Agriculture, School of Commerce and other institutions for starting post Higher secondary diploma and certificate courses. The first priority must be given for providing educational opportunities for the Higher Secondary students in vocational courses to continue their education and training beyond higher secondary stage.

There is considerable number of students who may like to move over to degree courses in the University and college sector: the universities or colleges, as recommended by Dr. Kulandaisamy Committee may take note of the fact that such a large number of students of vocational courses may need university/college courses. In the light of the above it may be necessary to restructure the degree courses as a measure of accommodating the interests of vocational education students to day a section of vocational education students go to Arts Colleges for degree courses. What is suggested here is that there should be alternative degree programme specially catering to the requirements of the higher secondary vocational students. A smooth articulation between the school and the university system will go a long way in providing vertical mobility for a second section of students completing vocationalised education at the plus two stage.

6.2. Skill development and apprenticeship training :

The heart of the vocational course is in the practical component. The infrastructural facility for skill development need to be enlarged and utilised better using more scientific management approaches. There should be periodic evaluation of the school and industrial collaboration for providing skill development to required levels. The Apprenticeship Act may be amended for accommodating the vocational education students with such an amendment it would become obligatory on the part of production and service establishments to extend the apprenticeship facilities for vocationalised education students. That will become yet another forward step in providing right placements for vocational education students

6.3 Career guidance services :

As part of providing relevant curriculum, it is logical to extend the same and bring the students under the coverage of career guidance programme. This could be accomplished by the department of Employment and Training, which has the requisite built-in infrastructural facilities.

6.4 Changing Social Values :

There is an under current of a mild order of resistance to work related education in our tradition ridden cultural set up. It may be necessary to educate an enlightened public opinion to perceive the changing social values in modern society. The Prime Minister Shri Rajiv Gandhi while talking on New National Policy on Education has stated that we need urgently modernisation in education as a step for preparing for the twentyfirst century and popular notions relating to vocational education as inferior education meant for those who are not successful in the academic field need to be altered by social movement and social changes. Infact what is expected is a transformation of social values - from values associated with a traditional Agro-culture to values associated with a modern developing culture. This social ethos will certainly help to see the relevance of vocational education in proper perspective. Vocational education is not inferior education but relevant and productive education for a country that considers education as a means of human resources development.

ANNEXURE. 1

**VOCATIONAL COURSES INTRODUCED IN THE HIGHER
SECONDARY SCHOOLS IN TAMILNADU**

Sl. No.	Vocational Area	Vocational Course	Year of Introduction
1.	2	3.	4.
1.	AGRICULTURE	Agricultural Chemicals	1978-79
2.	„	Agro-based industries	„
3.	„	Crop Production	„
4.	„	Dairying	„
5.	„	Fisheries	„
6.	„	Floriculture & Medicinal Plants	„
7.	„	Farm Mechanic & Post Harvest Technology	„
8.	„	Poultry	„
9.	„	Plant Protection	„
10.	„	Sericulture & Apiculture	„
11.	„	Small Farm Management	„
12.	„	Vegetables & Fruits	„
13.	HOME SCIENCE	Child Care and Nutrition	„
14.	„	Dress Designing and Making	„
15.	„	Dietetics, Nutrition & Food Preparation	„
16.	„	Food Preservation	„
17.	„	Textiles and Designing	1979-80
18.	„	Designing Dyeing and Printing	„
19.	„	Catering	1980-81
20.	COMMERCE & BUSINESS	Accountancy & Auditing	1978-79

1.	2.	3.	4
21.	COMMERCE & BUSINESS	Banking Assistant	1978-79
22.	„	Business Management for Small Scale Industries „	„
23.	„	Co-operative Management	„
24.	„	International Trade	1978-79
25.	„	Marketing and Salesmanship	„
26.	„	Office Secretaryship	„
27.	„	Materials Management	1979-80
28.	„	Insurance	1982-83
29.	ENGINEERING & TECHNOLOGY	Building Maintenance	1978-79
30.	„	Electrical Domestic Appliances- Repairs and Maintenance	„
31.	„	Electrical Motor Rewinding	„
32.	„	General Machinist	„
33.	„	Radio and Television-Repair Maintenance	„
34.	„	Leather Technology	„
35.	„	Textile Technology	„
36.	„	Domestic Electronic Equipment & Projection Equipment-Servicing & Maintenance	1979-80
37.	„	Foundry Technology	„
38.	„	Maintenance & Servicing of Textile Machinery	1978.79
39.	„	Composing and Printing Technology	„
40.	„	Computer Programming	1982-83
41.	„	Automechanic	„
42.	„	Draughtsman (Civil and Mechanic)	„

1.	2.	3.	4.
43.	HEALTH	Hospital Housekeeping	1978-79
44.	„	Medical Laboratory Assistant	„
45.	„	Nursing Course	„
46.	„	Dental Hygienist	1979-80
47.	„	Ophthalmic Technician	1981-82
48.	MISCELLANEOUS	Music	1978-79
49.	„	Bharathanatyam	1980-81
50.	„	Photography	1978-79
51.	„	Tourist Guide	1979-80
52.	„	Advocate's Assistant	„

Abstract of Vocational Courses Introduced

1978-79	....	37
1979-80	....	46
1980-81	....	48
1981-82	---	49
1982-83	....	52
1983-84	....	52
1984-85	....	52

ANNEUXURE II

**Particulars of Qualifications for Part-Time Instructors in
Higher Secondary Vocational Subjects**

Subject	Qualification
I - AGRICULTURAL VOCATIONS	
1. Dairying	} B. V. Sc. with 5 years' experience in dairying/poultry.
2. Poultry	
3. Small Farm Management	B Sc. (Agri)
4. Agro based Industries	} B. E. (Agri.)
5. Farm Mechanic and post Harvest Technology	
6. Rural Construction Technology and Soil Conservation.	
7. Sericulture and Apiculture	B. Sc. (Agri.)
8. Plant Protection (Pests, diseases and weeds)	B. Sc (Agri.)
9. Vegetables and Fruits	B. Sc. (Horticulture)
10. Floriculture and Medicinal Plants	,,
11. Agricultural Chemicals	B. Sc. (Agri.)
12. Crop Production	,,
13. Spices and plantation Crops	B. Sc. (Horticulture)
14. Fisheries	B. Sc. (Marine Biology/Fisheries Science or Zoology)

II. HOME SCIENCE

1. Food Preservation	
2. Baking and Confectionery	
3. Catering	
4. Dietetics, Nutrition and Food preparation	
5. Interior Decoration	B. Sc./B.Ed. (Specialised in Home Science).
6. Dress Designing and Making	
7. Designing, Dyeing and Printing	
8. Textile and Designs	
9. Child Care and Nutrition	

Subject	Qualification
---------	---------------

III COMMERCE & BUSINESS

- | | |
|-----------------------------|--|
| 1. Office Secretaryship | : Bachelor's Degree or Equivalent in Special Science/ Commerce of an Indian University or recognised foreign University with a postgraduate diploma in Secretarial course. |
| Experience | : 1. Minimum two years' working experience in industry in the related area

or
2 Two years'/teaching experience in the institutes for departments offering Office Secretaryship course. |
| 2. Insurance | : A degree in Commerce/Arts with a Diploma in Insurance. |
| Experience | : Two years' working experience in an Insurance company

or
Two years' teaching experience in the subjects connected with Insurance principles, practice and organisation. |
| 3. Accountancy and Auditing | : A degree in Commerce with Accounting and Auditing specialisation |
| Experience | : Two years' experience in Accounting and Auditing Departments in an industry

or
Two years' teaching experience in the related subjects at under-graduate level |
| 4. Banking Assistant | : A degree in Commerce with Advanced Banking/ Commerce as special subject |
| Experience | : Two years' working experience in any Bank

or
Two years' teaching experience at under-graduate level. |
| 5. International Trade | : A degree in Economics / Commerce. |
| Experience | : Two years' working experience in Exporting / Importing Organisations (Private / Public Sector) with a knowledge in Export / Import trade processes

or
: Two years' teaching experience in the subject "International Trade" at under-graduate level. |

Subjects	Qualification
6. Marketing & Salesmanship Experience	: A degree in Commerce/Business Administration, : Two years' working experience in any commercial undertaking.
7. Materials Management Experience	: A degree in Commerce/Business Administration, Post-graduate Diploma in materials management being a preferential qualification. : Two years' working experience in an industry in the related field or : Two years' teaching experience at under-graduate level.
8. Business Management for Small Scale Industries Experience	: A degree in Business Administration/ Commerce. : To years' in a small scale industry or : Two years' teaching experience.
9. Co-operative Management Experience	: A degree in Commerce / Economics with specialisation in Rural Economics/Co-operation. : Two years' working experience in a Co-operative Society or : Two years' teaching experience.

IV - ENGINEERING & TECHNOLOGY

1. Building Maintenance Experience	: (i) A First class diploma in Civil Engineering awarded by the State Board of Technical Education and Training, Madras, : (ii) A diploma in Technical Teaching awarded by the Technical Teachers' Training Institute. : (iii) A diploma in Civil Engineering awarded by the State Board of Technical Education and Training, Madras. : As a mason for not less than 5 years in a reputed Civil Engineering organisation.
2. Electrical Domestic Appliances and Electrical equipments.	: At least a diploma in Electrical Engineering with a minimum of 3 years' experience in the appropriate field.

Subject	Qualification
3. Domestic Electronic Equipment and Instrument Servicing and Maintenance of Hospital Equipment, etc.	: At least a degree in Electronics or Tele-Communication Engineering. A degree or diploma in Technical Teaching; Industrial teaching experience in the fields of Electronics, Radio/T. V. Engineering. : A diploma in Electronics/Radio or Tele-Communication. : Post Diploma in T. V. Engineering Industrial Experience in the fields of Electronics/Radio/T. V. Engineering.
4. Textile Technology	: Degree in Textile Technology or Diploma with 3 years experience.
5. Leather Technology	: Degree or Diploma in Leather Technology
6. Maintenance and Servicing of Textile Machinery.	: Diploma in Textile Technology : Diploma in Mechanical Engineering/Electrical Engineering.

V—HEALTH

1. Medical Laboratory Assistant.	: M.B.B.S., D.C.P.
2. Ophthalmic Technician	: M.B.B.S., D.o.
3. Dental Mechanic	: B.D.S
4. Dental Hygienist	,,
5. Radiological Assistant	: M,B B.S. D M,R.
6. Nursing Course	: B,Sc., (Post Basic or Basic)

VI—MISCELLANEOUS

1. Tourist Guide	: A History teacher may be put in charge of the course exclusively and he may be got trained by the Tourist Department of State and Central Governments.
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Subject	Qualification
2. Photography	: Diploma in Cinematography. A Photographer-Dark-room Assistant, S S. L. C. passed with at least 5 years' experience in a processing studio. : The senior physics staff will be in charge of the course.
3. Music	: Graduate in Music, Music Diploma holders and holders of Sangeetha Sironmani title of Madras University, Sangeetha Vidwan title of Tamilnadu Music College. Sangeetha Bhushanam of Annamalai University with minimum educational qualification of an eligibility in S S.L.C. Examination or its equivalent.

ANNEXURE III

Table showing the exposure of the +2 vocational course students to Production Units and scope for self / wage employment on their graduation from the course :

Vocational	Link to Production Units for training and probable employment	Scope for self-employment
1.	2.	3.
AGRICULTURE		
1. Agricultural Chemicals	Agro-Industries-Fertiliser industries, manure mixing firms and pesticide formulating centres.	—
2. Agro-based industries	Agricultural University, Agro-Industries Corporation.	Yes
3. Crop Production	Tamilnadu Agriculture University State Department of Agriculture.	Yes
4. Dairying	Department of Animal Husbandry, Tamilnadu Dairy Development Corporation, Dept. of Co-operation, Private Dairies.	Yes
5. Fisheries	Fish farms, boat-building yards, In-shore fishing stations. processing centres of Central and State Fisheries Departments	Yes
6. Floriculture and Medicinal Plants	Tamilnadu Agriculture University	Yes
7. Farm Mechanics and Post Harvest Technology	Small Scale Industries, Agro engineering Federation, Agro-Industries Corporation SIDCO	Yes
8. Poultry	Dept of Animal Husbandry, Tamilnadu Poultry Development Corporation, Tamilnadu Agriculture University Dept of Co-operation.	Yes
9. Plant Protection	Dept of Plant Pathology, Agricultural Entomology, Agronomy of Agriculture University.	Yes
10. Sericulture and Agriculture.	Dept of Biology, Agriculture University, Sericulture Wing of the Dept of Industries and Commerce, the Extension Centre of Sericultural Research Training Institute, Mysore	Yes

11. Small Farm Management	Agriculture University, State Dept of Industries and Commerce, the Extension Centre of Sericultural Research Training Institute, Mysore.	Yes
12. Spices and Plantation crops.	Agriculture University, State Dept of Agriculture and Co-operation.	Yes
13. Vegetables and Fruits	Agriculture University, State Dept of Agriculture.	

HOME SCIENCE

14. Catering	Catering Institute, Private and Public catering undertakings.	Yes
15. Child Care and Nutrition	Balwadi, Nursery Schools, Children's Hospital.	Yes
16. Designing, Dyeing and Printing.	Textile Mills, Textile Cottage Industries, Indian Handlooms, Arts and Crafts.	Yes
17. Dress Designing and Making.	Garment manufacturing units, Polytechnics offering Diploma in clothing, designing and dress making, Colleges of Home Science.	Yes
18. Dietetics, Nutrition & Food Preservation.	Catering Institutions, Hospitals	Yes
19. Food Preservation	Food Industry in Private and Public sector undertakings.	—
20. Textiles and Designing	College of Home Science, Dept. of Village Industries Textile Research Association.	Yes

COMMERCE AND BUSINESS

21. Accountancy and Auditing	The Association of Chartered Accountants, (Local chapter) The Association of Auditors) (Local chapter) Nationalised Banks, Government organisations.	—
22. Banking	Nationalised, Co-operative and Non-nationalised Banks, Commercial credit Corporations in private sector.	—
23. Business Management for Small Scale Industries.	Small Industries Service Institute SIDCO, TIDCO. other Industrial Development Agencies in Tamilnadu.	—

24.	Co-operative Management.	Primary Agricultural Credit Society, Co-operative Bank Employees' Society Primary Stores, Primary Marketing Society, Taluk Co-operative Union, Industrial Co-operative Society, Office of Registrar of Co-operatives.	—
25.	International Trade	Exporting-Importing organisations	—
26.	Marketing and Salesmanship,	Any organisation that has to market and sell its products, services in private/public sectors.	Yes
27.	Office Secretaryship.	Any organisation in public or private sector	Yes
28	Materials Management	National Productivity Course, Local Productivity Council and Local Management Association.	Yes

ENGINEERING AND TECHNOLOGY

29.	Building Maintenance	Polytechnics, P W D. Corporation of Madras, M.M.D A , SIDCO. Highways, Housing Board etc.	Yes
30.	Electrical and Domestic appliances Repairs and maintenance.	Film studios. cine theatres, A. I. R. hotels, clubs, etc.	Yes
31.	Electrical Motor Rewinding.	TANSI, G.E C , Crompton	Yes
32.	General Machinist	Any small or big Engineering Industry, TANSI Industrial Estates.	—
33.	Radio and Television Repairs and Maintenance	Television Manufacturers P & T Department Radio Manufactures, A. I. R., and Doordharshan	Yes
34.	Textile Technology	N. T. C. Binny and Co	—
35.	Leather Technology	C.L.R.I.	—
36.	Domestic Electronic Equipment & Projection Equipment Servicing and maintenance.	Electronic Corporation, theatres, Educational Institutions.	Yes
37.	Foundary Technology	Private & Public Foundries	—

38	Maintenance and Servicing of Textile Machinery.	Textile Mills	Yes
39	Composing and Printing Technology	Printing Presses	Yes
40.	Hospital house keeping	Government and Private Hospitals	—
41.	Medical Laboratory Assistant.	Do.	—
42.	Nursing Course	Do	Yes
43.	Dental Hygienist	Do.	Yes
44.	Ophthalmic Technician	Do.	Yes

MISCELLANEOUS

45	Music	A. I. R., Doordarshan Kendra	Yes
46.	Bharatha Natyam	Fine Arts Clubs, Cultural Associations	Yes
47.	Photography	Hindustan Photo Films, Institute of Film Technology Photographic Studios	Yes
48.	Tourist Guide	Tourism Development Corporation	Yes
49.	Advocate's Assistant	Advocates	Yes

Sub. National Systems Unit,
National Institute of Educational
Planning and Administration
17-B, Safdarjung Road, New Delhi-110016

DOC. No. 3933

Date: 12/8/82

ANNEXURE IV

Number of Higher Secondary Schools having vocational courses District wise 1984 - 85

District	XI							XII						
	Agri-culture	Engg.	Commerce	Home Science	Health	others	Total	Agri-culture	Engg.	Commerce	Home Science	Health	others	Total
Madras	1	16	42	13	1	1	77	-	14	35	12	4	1	66
Chengalpattu	4	15	26	1	2	-	48	4	15	25	1	1		46
South Arcot	8	34	47	8	8		105	8	27	36	6	5		82
Tanjavur	18	39	58	8	7		130	19	29	45	6	7		106
Madurai	12	18	51	9	12		102	11	17	46	8	13		95
Ramnad	1	30	62	7	9		109	-	30	61	6	9		106
Tirunelveli	15	23	84	8	14		144	14	21	77	8	16		136
Kanyakumari	3	29	38	5	27		102	5	26	34	3	24		92
North Arcot	3	56	64	5	3		131	3	46	52	5	3		109
Trichy	8	24	61	3	4	-	101	8	20	57	3	3		91
Pudukottai	1	5	14	1	3		24	1	5	12	1	1		20
Salem	5	38	50	9	9		111	5	32	46	5	9		97
Dharmapuri	4	10	31	-	-		45	4	8	22	-	1		35
Coimbatore	4	25	56	6	6		97	5	23	51	6	5		90
Periyar	3	5	30	1	4		43	4	5	30	1	4		44
The Nilgiris	2	4	16	1	5		28	1	4	11	2	-		18
	92	371	730	85	117	2	1897	92	322	640	73	105	1	1233