Government of Maharashtra

Vocationalization of Education

Policy Document

Vocational Education Committee Report (2011)

The Vocational Education Committee Report was presented to
Hon'ble Shri Rajesh Tope, Minister for Higher and Technical Education, Govt. of Maharashtra
by Swati Mujumdar, Chairperson - Vocational Committee
on 1st July, 2011

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FOREWORD

It gives me great satisfaction to present this Vocational Committee Report to the Govt. of Maharashtra on this day July 1st, 2011.

This report is a culmination of over one year of significant research, effort and hard work from a team of dedicated, sincere individuals who are passionate about vocational education, skill development and above all the hope of creating better opportunities for the youth of our country.

The 10 member committee under my Chairmanship was formed as a result of a presentation made to the Hon. Minister for Higher & Technical Education, Govt. of Maharashtra, Shri. Rajesh Tope, on the concept of a Vocational University. His constant encouragement and support enabled the Committee to prepare this report within a short time span of 5 months.

The Report gives details of the present scenario in India, Maharashtra and other countries. It consists of chapters giving the actual findings and recommendations at various levels / sectors – school level, higher education level (the establishment of a Vocational University), ITIs, Community Colleges, unorganized sector and the industry. The Report also gives the Legislative Framework and the Vocational Act which will require to be enacted. It also emphasizes the need to create a unified & integrated system of vocational education, training and skill development in our country with appropriate policies for regulation, standardization and quality assurance. The role of industry in shaping this sector and giving importance to formal vocational training and qualifications for its workforce has also been examined in detail in the Report.

I am thankful to the Union Minister for Agriculture, Hon. Shri. Sharad Pawar for his interest and encouragement. I express deep gratitude towards Minister for Education, Maharashtra State, Hon. Shri Rajesh Tope for his constant support, help and guidance. I am thankful to all the Committee members and especially Dr. R. Balapure, Shri. S. Devadkar, Dr. Asawa & Dr. V. Mehrotra for their valuable inputs. I must thank the President of Symbiosis, Dr. S. B. Mujumdar & my family who encouraged me to work in this field and my staff & associates of Symbiosis Center For Distance Learning (SCDL) namely, Dr. S.K. Gandhe, Mr. V.S. Pol & Adv. Ravi Bharadwaj. My special thanks to Ms. Sonali Kadam, Head-Projects, SCDL who has worked tirelessly for many months and without whom this report would not have been possible.

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CHAPTER I

INTRODUCTION

1.1 MEMBERS OF THE COMMITTEE

The following are the members of the Committee:-

1. Ms. Swati Mujumdar, Principal Director, Symbiosis Open Education Society (Chairperson)
2. Mrs. Shakuntala Katre, Consultant, NAAC
3. Mr. Dilip Chenoy, CEO & MD, NSDC
4. Mr. Pradeep Bhargava, MD Cummins Technology Ltd
5. Dr. Ravindra Balapure, Deputy Director Vocational Education
6. Smt. Sardesai, Former Chairman, Higher & Secondary School Examination Board
7. Chairman, Maharashtra State Board of Vocational Education (MSBVE)
8. Chairman, Maharashtra State Board of Technical Education (MSBTE)
9. Director (Training), Vocational Education & Training Directorate
10. Director (Vocational Education), Vocational Education & Training Directorate (Member Secretary)

The following are the Special Invitees of the Committee:-

11. Dr. V.S. Mehrotra, Associate Professor, PSSCIVE, Bhopal
12. Shri. D. K. Bhawsar, Deputy Education Advisor, MHRD
13. Smt. Ujjwala Devi Patil, Chairman, Higher & Secondary School Examination Board

1.2 TERMS OF REFERENCE

The following are the terms of reference given to the Vocational Committee by the Government of Maharashtra vide GR issued on 27th Jan 2011:-

1. To study and recommend the feasibility of establishing vocational educational university or to include vocational degree & post graduate degree programs along with B.Sc, B.Com, B.Sc (Agriculture) etc programs in conventional universities to create opportunities for vocational students to pursue PhD and other degree / higher education programs/courses in vocational streams.

2. To make recommendation on the evaluation and assessment of vocational education institutes in the state.

3. To make recommendations on the necessity of introducing vocational education courses in schools (at SSC level) similar to the courses offered in Higher Secondary (HSC) Vocational education which are presently available to the students.

4. To prepare a scheme / framework in order to make the lateral / vertical mobility available to the students pursuing vocational education programs.

5. To prepare the framework for credit banking & transfer system.

6. To suggest and formulate policy for Maharashtra Vocational Education, Training and Skill Development and to prepare the framework/policy for eligibility and equivalence. In addition, to make recommendations for preparing the State to adopt NVEQF policy soon to be formulated by the Central Government.

7. To examine and evaluate as to whether the existing courses of Maharashtra State Board Vocational Education (MSBVE) are relevant to industry needs. If not, to suggest reforms and fix the standard of state higher secondary vocational courses in comparison with + 2 level vocational courses of other States.

1.3 **TARGET GROUPS**

As per the terms of reference given to the Committee the following target groups have been identified:-

1. School population at secondary level

2. School population at higher secondary level

3. Student population that leaves general education system to pursue vocational education and training at diploma and certificate level at ITIs, Polytechnics, community colleges, Vocational Junior colleges etc.

4. School drop-outs

5. Labour force, including those entering the labour market for the first time (12.8 million annually), those employed in the organized sector (26.0 million) and those working in the unorganized sector (433 million in 2004-05). (Source: National Skill Development Policy 2009).

6. Tertiary level population seeking further higher education in vocational sector

The Committee has given a detailed treatment to each of the target groups mentioned above.

For school population at secondary level, the Committee recommends the introduction of electives at 9th and 10th std as compulsory component of syllabus. For Higher Secondary education at 10+2 level, restructuring of the existing scheme has been proposed.

Specific recommendations have been made for recognition of prior learning for the informal sector. The existing courses of ITIs, Polytechnics, MES, MSBVE etc have also been brought within the realm of Vocational Education framework. For students aspiring for higher education in the vocational sector, the committee has proposed the establishment of Vocational University. The legislative framework of the Vocational University to impart vocational education and training at undergraduate, post graduate and doctoral level has been elaborated in the Committee recommendations.

1.4 SCOPE OF THE REPORT

The first meeting of the committee was held on 10th February 2011 at Mantralaya under the Chairmanship of Honorable Minister for Higher & Technical Education, Maharashtra State, Mumbai. During the meeting, based on the terms of reference of the committee, it was decided that working groups shall be formed to work on specific tasks and the same shall be discussed in next meeting.

The second meeting of the committee was held on 19th February 2011 at Symbiosis Centre of Distance Learning, Pune under the Chairmanship of Ms. Swati Mujumdar, Chairperson of Committee. After detailed discussion, sub committees were formed and tasks assigned to each member of the committee. Details of the tasks assigned are attached at Appendix.

A presentation was organized for the members of MCCI on 24th Feb 2011. Ms Swati Mujumdar presented the concept of Vocational University to the representatives of the Industry. Feedback of the industries was obtained on the existing Vocational Education system and establishment of Vocational University.

The meeting of the working group for drafting the framework of the University was held on 04th March 2011 at Symbiosis Centre of Distance Learning, Pune under the Chairmanship Ms. Swati Mujumdar. Two sub teams were formed for designing the legislative framework and for designing the curricula respectively.

Another meeting was held on 14th March 2011 in which both sub teams met for further deliberation. For the sub team for curricula designing, a workshop was organized by Dr. V. S. Mehrotra on 14th March 2011. A total of 20 faculty members for each of the vocational groups identified for curricula development attended the training session. Formats for designing the Qualification overviews and the syllabus of the vocational courses were given to the faculty members.

A workshop was organized on 8th - 9th April 2011, to give Committee members and faculty representing various vocational colleges and ITIs an overview of the NVEQF to be rolled out

by the MHRD. This workshop was attended by over 30 faculty and was conducted by Dr. V.S. Mehrotra who has been involved from PSSCIVE in drafting the NVEQF document for MHRD and Mr. Basab Banerjee, NSDC. The faculties were trained on development of competency based courses in line with NVEQF.

A meeting of the Vocational Committee was held on Saturday, 16th April 2011 to finalize the schemes for SSC and HSC (Vocational).

Presentations of the Committee's work and recommendations were given on various occasions to eminent personalities from Politics, Administration, Industry and Academics including:

1. Hon. Shri. Sharad Pawar, Union Minister for Agriculture, Govt. of India
2. Shri. Sam Petroda, Chairman, National Knowledge Commission
3. Dr. Narendra Jadhav, Member of the National Planning Commission, Govt. of India
4. MCCIA
5. Smt. Shobha Mishra, Director-FICCI
6. Dr. Alka Bhargava, Director (VE), MHRD
7. Shri. Sharada Prasad, DGET, MoLE
8. Mr. Pawan Agarwal, Advisor, National Planning Commission

Vocational Education models of various countries have been studied. Interaction with representatives of various countries has been carried out. Salient aspects are as under-:

(a) **Sri Lanka** A delegation headed by Shri Rajesh Tope, Honorable Minister for Higher and Technical Education, Government of Maharashtra visited Colombo, Sri Lanka on 28th -29th April 2011. The main objective of the visit was to study the National Vocational Qualification Framework (NVQF) implemented by Sri Lanka and understand the innovative competency based curricula being developed. The Committee also aimed to understand the lateral and vertical mobility option available to vocational students through NVQF, the legal framework, structure, organization, role and functioning of Tertiary and Vocational Education Commission (TVEC) as well as to study the legal, administrative and academic structure of the University of Vocational Technology (UNIVOTEC) and implementation of NVQF at higher/tertiary education .The Committee wanted to adopt best practices from Sri Lanka and assess the possibility of implementing the same in Maharashtra. The feedback obtained from the delegation has been incorporated in the recommendations of the Committee.

(b) **Australia** Interaction with Mr. Geoffrey Conaghan, Commissioner to India, State Government of Victoria, Australia and Annie H Santhana Manager, Education Services - India State Government of Victoria, has been carried out to understand the Australian Vocational Qualification Framework.

(c) **Germany** The Indo-German Chamber of Commerce has been contacted. A detailed discussion was carried out on German model and feedback taken for incorporation in our own framework.

The working groups deliberated upon the issues mentioned in the terms of reference during the various meetings conducted in the last four months. Accordingly, the scope for each working group was identified and recommendations consolidated thereafter.

The Committee report consists of thirteen chapters. The first chapter besides the general introduction covers the present scenario of vocational education and training in India and abroad. The industry concerns have also been highlighted in this chapter.

The second chapter deals with the Vocationalization of secondary education. The present scenario of secondary education in Maharashtra along with the limitations of the existing system has been analyzed. The Committee has made suggestions for changing the existing SSC scheme to overcome the present limitations of the system.

In Chapter 3, Vocationalization of higher secondary education has been discussed in detail. The present HSC (vocational) scheme has been analyzed and recommendations for restructuring the scheme to make it more flexible and contemporary have been given.

Chapter 4 exclusively deals with the Vocationalization of the non formal sector. Presently, there is no mechanism in our education system that allows labour force in non formal sector to upgrade their skills and enter the formal education system. This Chapter outlines the present scenario and the implementation strategy to bring the non formal sector into the mainstream of vocational education.

In Chapter 5, target group of student population that leaves general education system after 8th and 10th std to pursue vocational education and training at diploma and certificate level at ITIs, Polytechnics, community colleges, Vocational Jr colleges etc has been focused upon. The present scenario and its limitations have been discussed and reforms suggested thereafter.

Chapter 6 discuses grant of associate degrees to students of community colleges. The chapter addresses the issues of lack of vertical mobility and suggests measures to provide upward/lateral mobility to the students through associate degree programs.

Chapter 7 is dedicated to the reforms for vocationalization of higher/tertiary education. In the present system, vocational degree programs are not offered at University level. The concept of Vocational University has been deliberated upon in and the legislative framework of the Vocational University proposed through an Act of legislature.

Chapter 8 gives details of strategies for implementation. These strategies include the regulatory framework for VET sector through establishment of Maharashtra Tertiary and Vocational Education and Training Commission (M-VEC), Maharashtra Vocational Education

and Training Quality Council (MVQC) and linkages with schools, colleges, universities, community, industry & Government.

In Chapter 9, the roles of various government and non-government organizations at State and Central level have been listed down. The industry plays an important role in the success of the VET model. The role of industries has been comprehensively covered in this chapter.

Chapter 10 summarizes the feedback received from vocational teachers, vocational students in ITIs and Vocational Colleges and the feedback received from the Industry. The feedback received from various quarters has been analyzed in great detail by the Committee and implementation strategies have been designed accordingly.

In Chapter 11, the focus is on teacher training and skill development. Teacher training and skill development is an important aspect of Vocational education and training and the Committee felt that a comprehensive chapter on teacher training must be incorporated in the recommendations.

Chapter 12 is a compilation of major recommendations contained in various chapters of the report.

1.5 **ACKNOWLEDGEMENTS**

The Chairperson and the members of the Committee would like to record with appreciation the immense help, spontaneous response, input, support and encouragement received from:

1. Shri. Sharad Pawar, Honorable Union Minister for Agriculture, Govt. of India.
2. National Knowledge Commission – Shri. Sam Petroda.
3. National Planning Commission – Shri. Narendra Jadhav & Shri. Pawan Agarwal.
4. Govt. of Sri Lanka, TVEC and Univotech and other officials
5. National Skill Development Corporation – Shri. Dilip Chenoy, Shri. Basab Banerjee & Shri. Ranjan Choudhary.
6. Ministry of Human Resource Development (MHRD) – Shri. Subhash Kunthia, Smt. Anshu Vaish, Smt. Dr. Alka Bhargava and Shri. Bhawsar.
7. Ministry of Labour and Employment (MoLE) – Shri. Sharada Prasad, Shri. R.L. Singh.
8. FICCI – Smt. Shobha Mishra
9. Govt. of Maharashtra – Honorable Chief Minister Shri. Prithiviraj Chavan
10. Govt. of Maharashtra – Department of Higher & Technical Education
11. MCCIA, Pune
12. Shri. Gautam, Commissioner, Employment, Self-Employment and Skill Development, Govt. of Maharashtra
13. Shri. R.R. Deshpande, Joint Director, Dept. of Higher Education, Govt. of Maharashtra
14. Mr. Chandrakant Ninale, District Vocational Officer, Pune

1.6 GLOSSARY OF TERMS

a) "Vocational Education , Training and Skill Development (VETSD) "means all forms and levels of the educational process involving, in addition to general knowledge and academic skills , the study of technologies and related sciences, the acquisition of practical skills, know-how, attitudes and understanding relating to occupations in the various sectors of economic and social life.

b) "Accreditation" means the formal recognition of a vocational education and training course by accreditation body in accordance with the NVEQF Standards or the quality standards set by the State.

c) "Apprenticeship training" means a course of training in any industry or establishment undergone in pursuance of a contract of apprenticeship and under prescribed terms and conditions which may be different for different categories of apprentices.

d) "Associate Degree" means degree offered by Community colleges which build a foundation for a more advanced degree by allowing the students vertical mobility into third year of undergraduate program.

e) "Certificate" means an official document, issued by an awarding body, which records the training achievements of an individual following a standard assessment procedure.

f) "Community College" means an alternative system of education, which is aimed at the empowerment of the disadvantaged and the underprivileged through appropriate skills development leading to gainful employment in collaboration with the local industry and the community.

g) "Competency standard" means an industry-determined specification of performance which sets out the skills, knowledge and attitudes required to operate effectively in employment. In vocational education and training, competency standards are made up of units of competency, which are themselves made up of elements of competency, together with performance criteria, a range of variables, and an evidence guide.

h) "Continuing vocational education and training" means education training after initial education or entry into working life, aimed at helping individuals to improve or update their knowledge and/or skills, acquire new skills for a career move or re-training, or continue their personal and professional development.

i) "Credit Point System "means a method to measure the workload of a student's learning effort

j) "Credit transfer" means the process in which credits already obtained from one qualification is recognized completely or partially, towards obtaining a new qualification.

Credit transfer allows students to transfer credits from one programme to another within the same institution or across institutions.

k) "Further Education" means post-secondary education, including higher education, adult education, and vocational education and training.

l) "Learning outcomes" are statements of what a learner is expected to know, understand and/or be able to demonstrate after completion of a process of learning.

m) "Pre-vocational training " means training arranged primarily to acquaint young people with materials, tools and standards relating to a range of occupations, to prepare them for choosing an occupational field or a line of training.

n) "Recognition" means the formal approval of training organizations, products and services operating within the vocational education and training sector.

o) "Recognition of prior learning" means the acknowledgement of a person's skills and knowledge acquired through previous training, work or life experience, which may be used to grant status or credit in a subject or module.

p) "Jan Shikshan Sansthas (JSS)" are volunteer agencies which are provided financial assistance for taking up vocational training programmes for illiterates and neo-literate people belonging to socio-economically weaker sections, disadvantaged groups, unskilled and unemployed youths in the age group of 15-35 years. There are a total of 217 JSSs across India.

q) "Community Polytechnics (CP)" are selected AICTE Polytechnics that run vocational programmes in the local area/region for Community Development under the Community Development Through Polytechnics (CDTP) scheme. Each CP runs short term non formal skill development programs through 5-10 extension centers in nearby villages. There is no age or qualification bar for trainees under this scheme and no fees are charged to students. There are a total of 703 CPs have been selected out of which 479 have been provided financial assistance to carry out this scheme.

1.7 **INTRODUCTION**

Vocational Education and Training (VET) is an important element of nation's education initiative. For Vocational Education to play its part effectively in the changing global environment, it is imperative to redefine the objectives of vocational education and training and to make it flexible, contemporary, relevant, inclusive and creative. The Government realizes the importance of strengthening and revamping the vocational education sector and has already taken a number of important initiatives in this area.

Vocational education can no longer be terminal in nature. It needs to be redefined as a preparatory stage for the vocational students to enter the portals of University education. A unified system from secondary education to university education is the need of the hour. Even other countries across the world have upgraded their education system by integrating academic and vocational education.

Over the years, several committees and commissions have also been set up to make recommendations for Vocationalization of the education sector. The National Policy on Education also emphasizes on vocationalization of education.

The **National Policy on Education (NPE), 1986 (modified in 1992**), states that "The introduction of systematic, well planned and rigorously implemented programmes of vocational education is crucial in the proposed educational reorganization. These elements are meant to develop a healthy attitude amongst students towards work and life, to enhance individual employability, to reduce the mis-match between demand and supply and to provide an alternative for those intending to pursue higher education without particular purpose or interest." The policy also states that graduates of vocational courses will be given opportunities, under predetermined conditions, for professional growth, career improvement and lateral entry into courses of general, technical and professional education through bridge courses.

Central Advisory Board for Education (CABE) Committee report on Universalization of Secondary Education, 2005 has also proposed the following reforms:-

a) Ensuring that vocational education is not a dead end and by allowing well performing students in the vocational education track to proceed onto higher education will ensure that the vocational stream is not seen as an option of last resort by prospective students.

b) Ensuring private sector participation in management of institutions and curriculum design to ensure a direct connection to the labor market for graduates, and an effective medium for bringing about organizational and productive innovations.

c) Strengthening the general education component of these programs for providing basic knowledge in humanities and sciences, preparing students to work in various occupations, teaching them to solve problems and encouraging them to continue learning.

d) Funding and budget allocations - moving from a system which is exclusively financed by the government to a system which is increasingly financed by the private sector and by students paying user fees. The private sector would be willing to contribute only if they see that the system is producing relevant graduates. Students are likely to contribute if they see accrual of labor market benefits from vocational education.

The Government of India at the national level is also in the process of establishing a "National Vocational Education Qualifications Framework". Central Advisory Board of Education (CABE) has set up an inter-ministerial group which includes representatives of State Governments to develop guidelines for such a National Framework.

The unified system of national qualification will cover schools, vocational education and training institutions and higher education sector. NVEQF will be based on nationally recognized occupational standards which details listing of all major activities that a worker must perform in the occupation or competency standards – a detailed listing of the knowledge, skills and attitude that a worker should possess to perform a task written by the particular employment-led sector skills council.

The National Skill Development Policy 2009 has proposed the following features for the framework:-

a) Competency based qualifications and certification on the basis of nationally agreed standards and criteria

b) Certification for learning achievement and qualification

c) A range of national qualification levels – based on criteria with respect to responsibility, complexity of activities, and transferability of competencies

d) The avoidance of duplication and overlapping of qualifications while assuring the inclusion of all training needs

e) Modular character where achievement can be made in small steps and accumulated for gaining recognizable qualification

f) Quality Assurance regime that would promote the portability of skills and labour market mobility

g) Lifelong learning through an improved skill recognition system; recognition of prior learning whether in formal, non-formal or informal arrangements

h) Open and flexible system which will permit competent individuals to accumulate their knowledge and skill through testing & certification into higher diploma and degree

i) Different learning pathways – academic and vocational – that integrate formal and non-formal learning, notably learning in the workplace, and that offer vertical mobility from vocational to academic learning

j) Guidance for individuals in their choice of training and career planning

k) Comparability of general educational and vocational qualifications at appropriate levels

l) Nationally agreed framework of affiliation and accreditation of institutions

m) Multiple certification agencies/institutions will be encouraged within NVQF

The Kothari Commission Report has also emphasized on full-fledged vocational education in vocational institutions and schools after VIII+ and X+ as well as at higher secondary levels.

In recent years, the Hon'ble Prime Minister of India has announced 1600 new it is and Polytechnics, 10,000 new vocational schools and 50,000 new skill development centers will be opened to ensure that annually, over 100 lakh students get vocationally trained.

To incorporate this vision of our Hon'ble Prime Minister and the various reforms in the Vocational education sector, a major restructuring of the system is required to be done.

With this as an objective and with an aim to cover the complete spectrum of vocational education in the State of Maharashtra, the Government of Maharashtra has set up an 11-member committee to formulate the Vocational education policy for the State of Maharashtra. The scope of Vocational Committee covers secondary school education, higher secondary education and tertiary education.

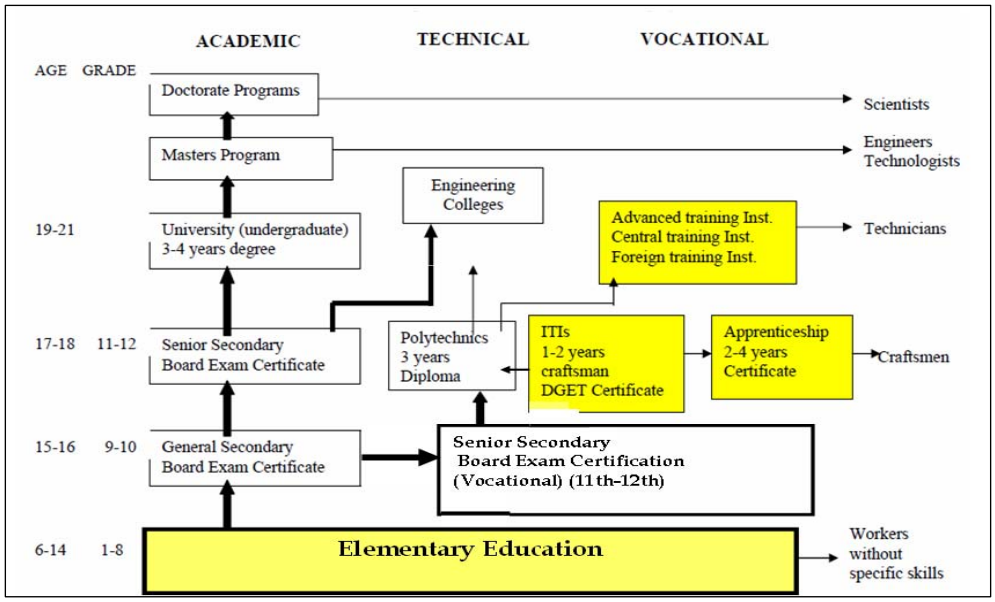
1.8 VOCATIONAL EDUCATION & TRAINING SCENARIO – INDIAN AND INTERNATIONAL PERSPECTIVE

Vocational education and training is an important component for socio-economic growth of any country. The countries that have adapted to the changing global scenario by upgrading the VET sector to provide higher and specialized skills are better placed in the world of work.

India can also gain from the international experience by contextualizing the learning in the Indian context. The present vocational scenario in India and some of the successful international VET systems are outlined in the following pages.

1.8.1 **Present Scenario of Vocational Education in India**

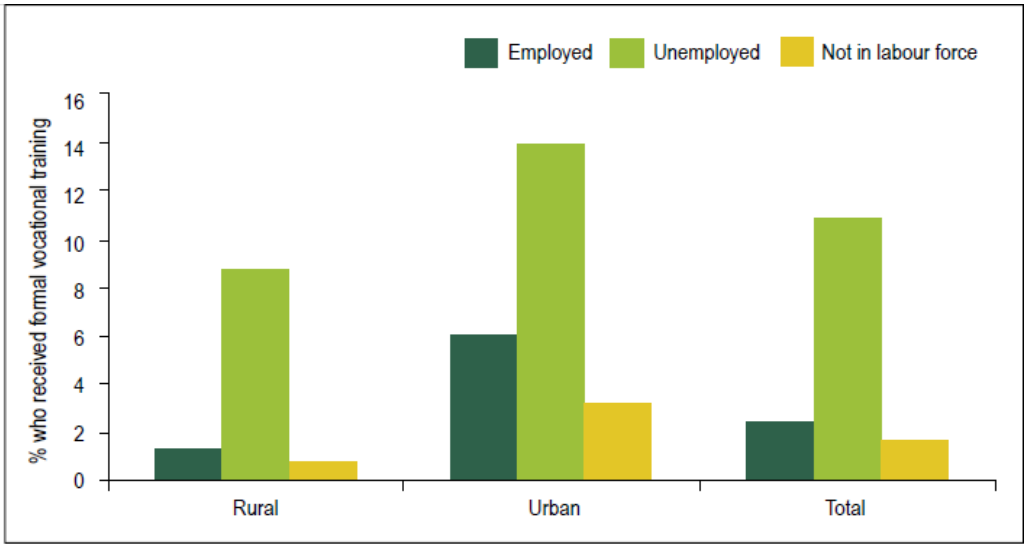
The structure of current education system can be described as below:-



(Source -World Bank Report 2006)

In India, skill acquisition takes place through two basic structural streams – a small formal one and a large informal one.

Status of Vocational Training received: Only about 2.5 million vocational training seats are available in the India whereas 12.8 million persons enter the labour market each year (Source – Meeting of State Education Ministers on NVEQF 28th Jan, 2011 – Report from MHRD). Similarly, the World Bank Report, 2006 shows that among persons of age 15-29 only about 2 per cent reported to have received formal vocational training and another 8 per cent reported to have received non formal vocational training. The proportion of persons (15-29 years of age) who received formal vocational training was the highest among the unemployed. The proportion was around 3 per cent for the employed, 11 percent for the unemployed and 2 per cent for persons not in the labour force. The activity of persons receiving vocational education is as shown below-:



Source: Status of Education and Vocational Training in India, 2004-05, NSS 61st Round

Comparison with other Countries: World Bank Report suggests that less than one per cent of students who had entered Grade 1 over the last decade or so would have eventually participated in vocational education. In comparison the status in various other countries is as shown below-:

Country	Secondary enrolment ratio	Number of students (thousands)	Vocational-technical share (per cent of total secondary enrolments)
Russia	88	6277	60
China	52	15300	55
Chile	70	652	40
Indonesia	43	4109	33
Korea	93	2060	31
Mexico	58	-	12
Malaysia	59	533	11
South Africa	77	-	1

Source: World Bank, 2006

Proportion of Students in Vocational Education at +2 level in India as compared to other countries:

Country	**Percentage of Students at +2 level in vocational education**
Germany	Above 65 %
Japan	40 %
India	4.8 %

The above table indicates the low percentage of vocationally trained students at +2 levels inspite of the existing schemes in place.

1.8.2 **Problem Areas in present Vocational Education and Training System**

Vocational Education is presently offered at Grade 11, 12th – however students reaching this Grade aspire for higher education. Since the present system does not allow vertical mobility, skills obtained are lost. Enrollment in 11th & 12th Grade of vocational education is only 3% of students at upper secondary level. About 6900 ITIs & ITCs enroll about 9.5 lakhs students. Students with 12th std vocational/two-year ITI certification are not given lateral entry into equivalent academic year in polytechnic diplomas.

International experience suggests that what employers mostly want are young workers with strong basic academic skills and not just vocational skills. The present system does not emphasize general academic skills. The relative wages of workers with secondary education are increasing.

Private and Industry Participation is lacking. There are no incentives for private players to enter the field of vocational education.

Present regulations are very rigid. In-Service Training is required but not prevalent today. There is no opportunity for continuous skill up-gradation.

There is a lack of experienced and qualified teachers to train students on vocational skills. In foreign countries Bachelors of Vocational Education (BVE) is often a mandatory qualification for teachers. However, in India no specific qualifications are being imparted for Vocational Education teachers.

Vocationalization at all levels has not been successful. Poor quality of training is not in line with industry needs.

There is no definite path for vocational students to move from one level / sector to another level / sector. Mobility is not defined and hence students do not have a clear path in vocational education.

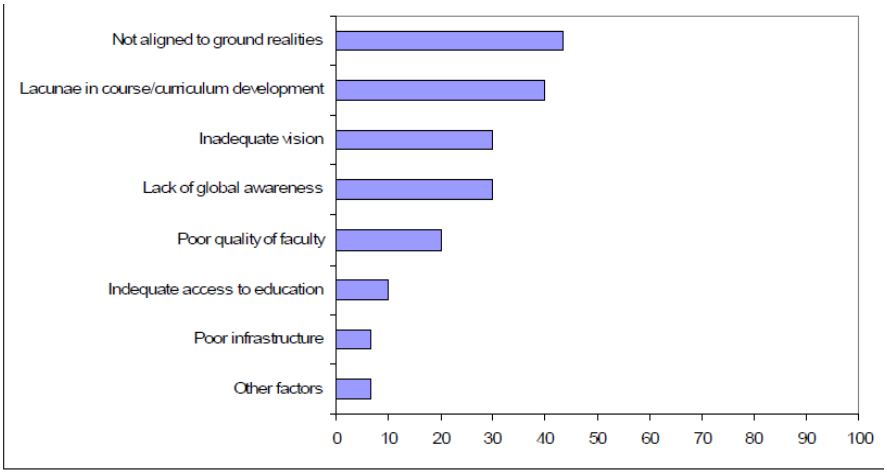
No clear policy or system of vocational education leading to certification / degrees presently available for the unorganized / informal sector. No Credit System has been formulated for the same.

Expansion of vocational sector is happening without consideration for present problems.

1.8.3 **Trends related to Labour Market**

An analysis of the labour market has brought the following issues to the fore-:

1. Labour market requirement for skilled workers without general education skills is declining. The industrial concern on vocationally qualified work force is as illustrated:-



Source: FICCI (2002)

2. High growth sector related vocational courses are not being widely offered. There has been a decline in minimal skilled jobs which require lower educational qualifications. For example: there are 4.0 million trained and skilled persons required in high growth sector in Maharashtra alone by 2012, out of which minimally skilled required are only 1.1 million. Composition of employment in industrial sector is indicated below-:

Table 1.3: Composition of Employment by Industry Sector

Sector	Employment Share (%)			GVA per Worker (Rs) 1999-2000	Annual Growth (%) over 1993-94
	1961	1993-94	1999-2000		
Agriculture	75.9	63.8	59.9	12,323	3.2
Mining and Quarrying	0.5	0.7	0.6	116,863	7.7
Manufacturing	9.5	11.6	12.2	40,741	5.8
Electricity, gas and water supply	0.1	0.4	0.3	269,323	12.0
Construction	1.5	3.2	4.4	33,334	-0.1
Trade, hotels and restaurant	4.3	7.6	9.4	45,344	4.5
Transport, storage and communication	1.7	2.9	3.7	57,245	3.2
Financial, insurance, real estate and business services	0.3	1.0	1.2	193,247*	7.2
Community, social & personal services	6.1	8.8	8.4	45,818	8.2
All sectors	**100.0**	**100.0**	**100.0**	**27,722**	**5.8**

Source: Narain (2005)

As indicated above, the high growth sectors are transport, communication, finance, insurance, real estate and business services. Vet sector should concentrate on high growth sector related skill development courses.

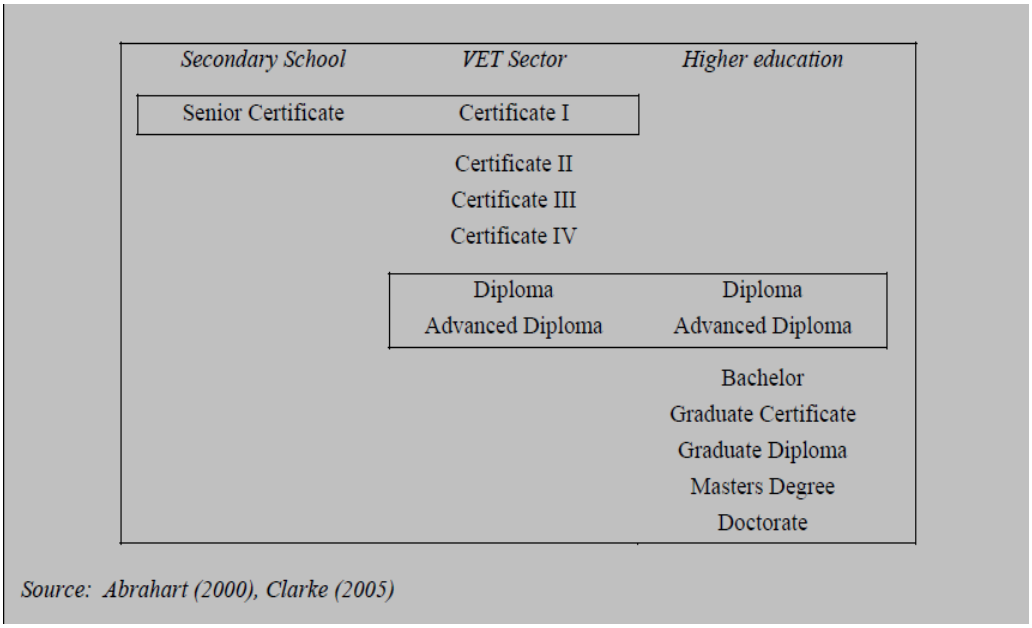
3. Labour force participation is declining while student participation is increasing. Thus more students are joining higher secondary education and looking for vertical mobility.

1.8.4 **Vocational Education & Training Scenario – International Perspective**

Australia

Australia has a well defined National Qualification Framework. Australia has developed 'foundation' vocational skills courses offered through VET schools and standardized by the Australian National Training Authority, the single tripartite body responsible for training standards.

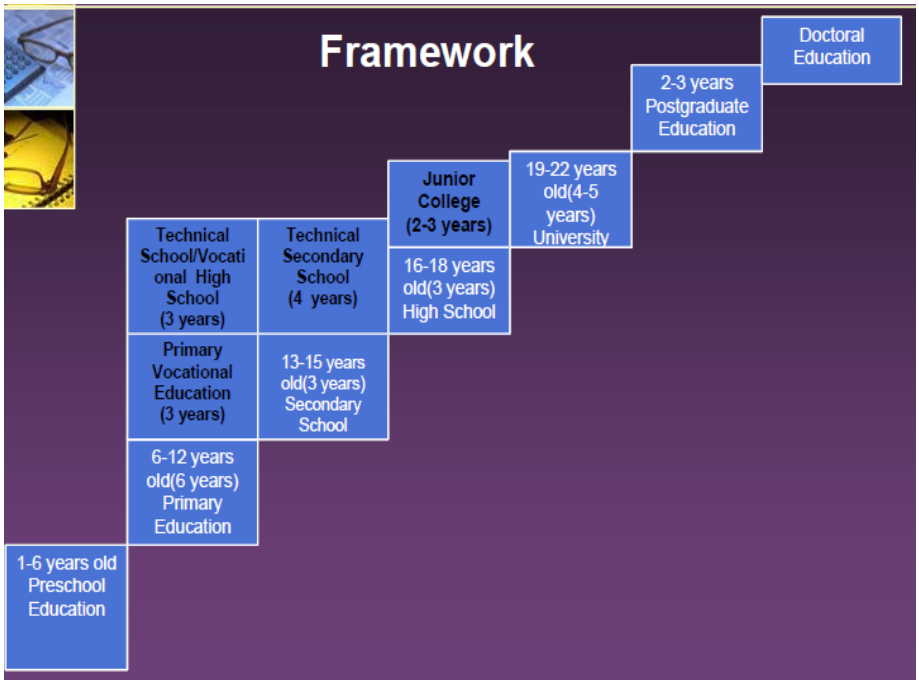
Level-I Certificates from the VET system are regarded as educationally equivalent to Senior Certificates from secondary schools, and Diplomas and Advanced Diplomas may be issued by the VET system or by higher education institutes. Depending on the courses of study, credits are allowed to be accumulated as participants choose to move between the three sectors. Some VET certificates may now be issued with little or no formal training, for example, to enterprise workers who have obtained their skills over a number of years on the job.



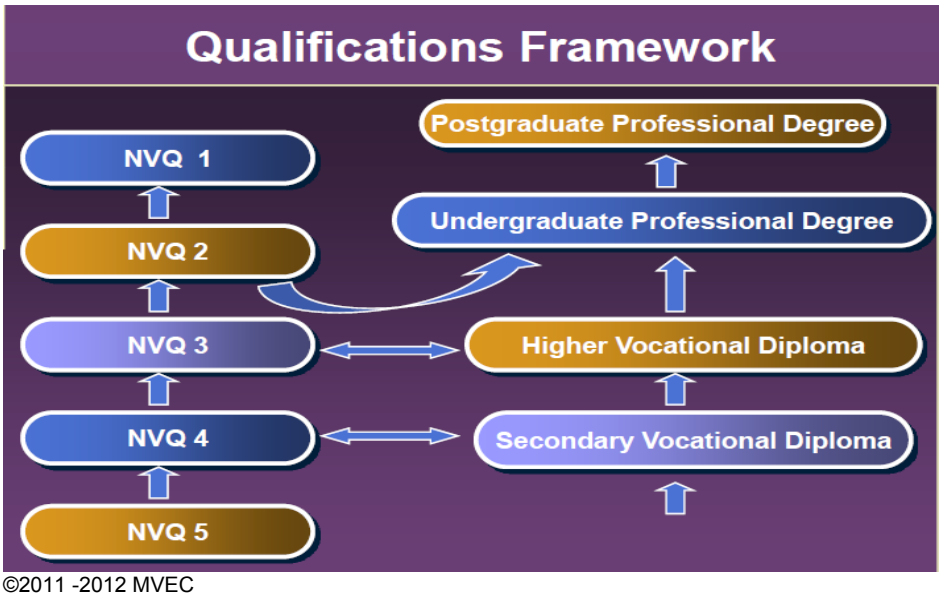
Source: Abrahart (2000), Clarke (2005)

China

In recent decades, China's vocational and technical education has produced a large quantity of low-level technical workers, low-level managerial professionals, and skilled workers. Vocational education in China is primarily associated with two or three-year institutions, and specialized training institutions closely linked to local industry and business needs. Postsecondary education in China is divided into four categories: formal four-year higher education institutions (Benke in Chinese), three-year or two-year vocational education institutions/Universities (Zhuanke), private institutions (Minban), and adult universities (Yeyu).The framework of education system in China is as follows:-



The Vocational Qualification Framework in China has divided into 5 levels (unlike the British system of 9 levels). Schematic presentation of NVQF is as shown-:



Korean Vocational Education System

The Korean vocational education system has evolved considerably since it was set up in the early 1960s. While initially the emphasis was on churning out semi-skilled workers for the industry, the current focus is on equipping students with basic knowledge and skills and providing them with a foundation which will enable them to learn further. Some key features of the system include:

a) Delaying streaming into vocational education till high school (for three years after grade 11). All students undertake a common national curriculum in the first year of high school, following which they choose to enter the general or vocational stream for the remaining two years – however the vocational stream includes extensive elements of general education;

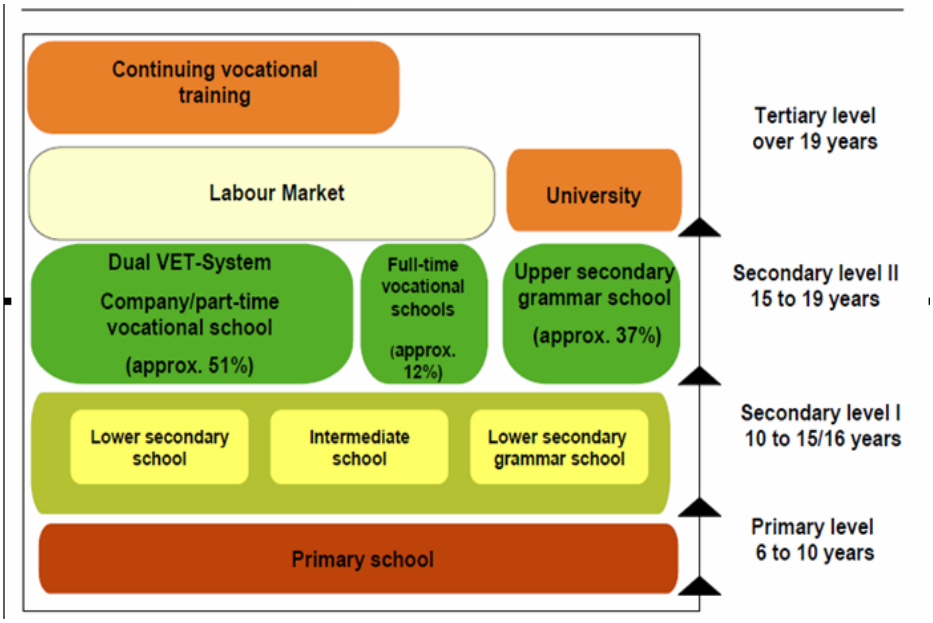
b) Ensuring the vocational stream is not dead-end – by allowing vocational students to proceed to higher education;

c) Financing vocational education through government and private resources – about 40 percent of financing for vocational education comes through entrance and tuition fees;

d) Linking up vocational schools with specific industries to ensure that curriculum and outputs match industry needs.

German Vocational Education System

The structure of education system is as illustrated:-



In Germany, vocational education is provided at secondary level (age group 15 to 19 years) through dual VET system and full time vocational schools.

Vocational Universities in Germany called as Universities of Applied Sciences offer Bachelors and Masters Degree Programs in Vocational Streams. There are a total of 160 Universities of Applied Sciences in Germany. The Universities of Applied Sciences offer practical university-level education and training focusing more heavily on teaching rather than research and by offering degrees tailored to specific jobs and industries. Courses at these Universities are in great demand as they increase the status of vocational training by providing opportunity to vocational students to pursue University level courses. In fact today in Germany Universities of Applied Sciences currently train nearly all of Germany's social workers / social educators, two-thirds of all of its engineers and about half of its economists and computer scientists.

CHAPTER II

VOCATIONALIZATION OF SECONDARY SCHOOL EDUCATION

2.1 PRESENT SCENARIO OF SECONDARY EDUCATION

Research shows that as compared to other developing and neighboring countries, India has a major deficit at the secondary level and not at the primary level (Source – The World Bank Report, 2006).

There is a high drop out rate at Secondary level. There are 220 million children who go to school in India. Of these only around 12% students reach university. A large part of the 18-24 years age group in India has never been able to reach college. Comparing India to countries with similar income levels – India does not under perform in primary education but has a comparative deficit in secondary education.
A comparison with other countries is indicated below:-

Table 1.6: Levels and Distribution of Educational Attainment (Ages 25 years and Above)[31]

Country	Average Years of Schooling	Proportion of Adult Population with:			
		No Education	Some Primary	Some Secondary	Some Tertiary
India	**4.9**	**51.0**	**31.6**	**11.7**	**5.7**
Argentina	8.5	5.8	49.6	24.9	19.7
Brazil	4.6	21.3	56.8	13.5	8.4
Chile	7.9	5.3	42.9	36.0	15.8
Mexico	6.7	12.4	47.3	29.0	11.3
Korea	10.5	8.0	26.6	47.4	25.8
Malaysia	7.9	13.9	35.6	43.0	7.5
Singapore	8.1	12.6	28.3	48.5	10.6
Australia	10.6	1.7	21.1	38.6	29.8
Norway	11.9	1.2	11.5	62.5	24.8

Source: World Bank database

Statistics indicate that the drop rate between grade 1 to 8 is 43 % where as the drop out rate at grade 9 to 10 is about 57 %

To address this huge deficit & drop out at secondary level, the Vocational Education & Training system may be looked at as a viable alternative. In fact, it is noticed that many school children are not comfortable with theoretical subjects but at the same time are inherently inclined to some skill or hobby. Such students will especially find the VET system attractive if introduced at an early age. Further linkages to VET system within higher education will motivate students and their parents to pursue VET as a career option.

The National Policy of Education, 1986 states that "vocationalization of secondary education through specialized institutions or through refashioning of secondary education will provide manpower for economic growth". The policy suggests that pre-vocational

programmes provided at lower secondary stage will also facilitate the choice of vocational courses at higher secondary stage.

The Kothari Commission recommended diverting 20% of 8th std + students and 50% 10th std + students predominantly in the vocational education. The Centrally sponsored scheme of vocationalization of secondary education was launched in the year 1998. The scheme was implemented through States, Union Territories and NGOs / other agencies in the formal and non formal sector respectively. The scheme envisaged selection of vocational courses on basis of assessment of manpower needs. The main objective of the scheme as spelt out in the National Policy of Education, 1986, were to provide diversification of educational opportunities, so as to enhance individual employability, reduce the mismatch between demand and supply of skilled manpower and to provide an alternative to those pursuing higher education. Since inception of this scheme 9619 schools across India, with about 21,000 sections have been created, with an intake capacity of about 10.3 lakh students. This scheme was implemented in all States but without uniformity or success. The objective of introducing vocational education at secondary school level was to provide pre-vocational training to the students which would help to orient them towards the world of work. In many States the schools associated the local School Board implemented only a handful of vocational subjects at the secondary level, that too, as an optional subject. Further, there was no incentive or weightage given for these vocational subjects in the final 10th grade marksheet. As a result, the scheme failed to gain popularity as a viable alternative at the secondary level and did not meet the objective with which it was laid out.

The Vocational Committee deliberated on the existing scheme of SSC in the State of Maharashtra and suggested some changes to popularize vocational education at school level in schools affiliated to the Maharashtra State School Board.

The present secondary school structure for schools affiliated to the Maharashtra State School Board consists of 9th & 10th grades. Students get an SSC certificate upon passing the 10th grade examination which is conducted by the Maharashtra State School Board.

Approx 36,617 students enrolled in vocational subjects at 9th grade in 2010 because pre-vocational education does not form a compulsory component of school education at 9th and 10th level.

The SSC scheme implemented at the secondary level in these schools is as under :-

Sr. No.	Subject	Max. Marks
1.	Language I	100
2.	Language II	100
3.	Language III	100
4.	Mathematics	150
5.	Social Science	100
6.	Science	100
	Total	650

Besides the above mentioned subjects, the students also study Environmental Sciences and Physical education.

Students are also given optional vocational subjects at the 9th & 10th grade, without any weightage in the final marksheet. However, only the grade obtained for such optional vocational subjects is recorded on the final marksheet.

Vocational subjects presently offered to secondary school students under this scheme are:-

V1 – Introduction to basic rural technology
V2 – Elements of mechanical technology
V3 – Elements of Electrical and Electronic technology

In addition to above, students also have option of taking vocational subjects instead of Work Experience as part of their SSC curriculum.

The Maharashtra State Board of Secondary and Higher Secondary Education plans to expand the vocational subjects to provide further opportunities to students.

2.1.1 **Benefits of existing SSC scheme**

The following benefits are given to students opting for Vocational subjects at SSC level:-

2. 40% reservation in bifocal stream at 10+2.
3. 25% reservation in ITIs
4. 15% reservation in Polytechnics
5. Students can obtain certificates from MSBVE by directly appearing for the examination for corresponding MSBVE course.

Despite, the following advantages, there is only 4.3% enrollment in vocational subjects of the total students admitted in 8th grade. The reason for poor enrollments is given in the next section.

2.1.2 **Problems of SSC scheme in State of Maharashtra**

1. Since these vocational subjects are optional, students who do not have aptitude for academic subjects cannot pursue these subjects as a career stream.

2. Further, less emphasis is given by schools to motivate students to opt for such vocational courses, these schools do not have adequate infrastructure and trained staff to undertake the same.

3. Besides since these vocational subjects are not given weightage in the final marksheet, students do not feel motivated to opt for them.

4. Time period required for these courses is 20% of the total workload which is over and above the student's regular coursework and requires the students to undertake additional practical work which is not given any marks. This further discourages students to opt for vocational courses.

5. The type of vocational subjects offered is very limited. At present only technical vocational subjects as mentioned above are offered.

2.2 RECOMMENDATIONS

The Committee has made the following recommendations:-

1. Students should be given choice of many more vocational subjects to opt for. It would be desirable to offer non-technical vocational subjects in the high growth sectors also.
2. The vocational subjects introduced at secondary school level are recommended to be credit based and modular in nature.
3. It is recommended that the vocational subjects offered at SSC level should be linked to high growth sectors and also to HSC level vocational groups. This mapping of vocational subjects offered at secondary (9^{th} & 10^{th}) level to the HSC (Vocational) groups to be taken at 11^{th} & 12^{th} level will enable students and their parents to clearly understand the vertical mobility available to them as will help in popularizing this scheme as an alternative to the academic sector.
4. The vocational subjects offered at secondary level must have linkage with vocational streams offered at 10+2 (HSC level), so as to provide vertical mobility guidance to students who may wish to pursue vocational stream at higher levels.
5. Vocational subject option should be provided as an alternative to third language within the core group so as to take effect in the overall weightage of SSC marks.
6. The proposed model for SSC is as follows:-

Sr. No.	Subject	Max. Marks
1.	Language I	100
2.	Language II	100
3.	Elective (Vocational Subject)	100
4.	Mathematics	150
5.	Social Science	100
6.	Science	100
	Total	650

6. The above proposed scheme will enable students to opt for vocational subject as an Elective / as an alternative to third language and should also carry weightage in the final SSC marksheet thus increasing their motivation to opt for such vocational subjects.

7. NVEQF certificate I (level 1) may be introduces as an elective for 9th std and NVEQF certificate II (level 2) may be introduced as elective for 10th std. This will enable students to enter the NVEQF framework and obtain dual certification at school level.

2.2.1 Benefits of the new proposed SSC scheme

1. By introducing vocational subject as an Elective vocational subject carrying weightage in the final SSC marksheet, the students will be motivated to opt for the vocational stream at secondary level. Further, the linkages to HSC (Vocational) stream will enable them to pursue vocational stream as a viable alternative.

2. It will enable students to obtain additional certificates of pre- vocational training in line with NVEQF.

3. It will lead to introduction of vocational education at school level similar to education models in other foreign countries like China.

4. Introduction of vocational electives at school level will enable promotion of vocational education and expose the parents to alternate streams of education.

5. It will provide students with an opportunity to understand and make the right choices in selecting vocational courses at senior / higher secondary or tertiary levels during their academic tenure.

6. It will provide students with an opportunity to pursue new streams in Vocational Education at higher education level and get exposed to the world of work.

7. Vocational education at school level will provide students some basic pre-vocational skills which can be further developed at higher secondary level.

8. It will help expand the vocational education base at school level and will be in line with the national policy of skill development of Central Government and Vocationalization of secondary education policy of the Government of India.

9. It will enable integration of academic and vocational education and training.

CHAPTER III

VOCATIONALIZATION OF HIGHER SECONDARY EDUCATION

3.1 PRESENT SCENARIO

As per the National Education Policy of 1986, based on the recommendations of Kothari Commission, the Govt. of India introduced +2 level i.e. 11th & 12th (HSC) Vocational stream in 1988-89. This stream has been implemented by almost all States initially. The objectives of this stream were to create an alternative system of education for students at the Higher Secondary level and to divert the flow of students from conventional higher education to vocational education thereby reducing the pressure on conventional universities. The Government also envisaged that a large pool of employable youth of the age group between 16-18 years would be generated through this alternative stream. There are about 1.6 crore children at the +2 level out of which about 25% (i.e. 40 lakh students) diversion into vocational stream is envisaged. According to the evaluation conducted by Operations Research Group, 1996, the proportionate share of vocational students vis-à-vis total enrollment at higher secondary stage was 4.8 % and 28 % of the vocational pass outs were employed or self employed. In several States 2 year courses or Diplomas are offered at 10+2 level. It is apparent that the vocational education courses available at higher secondary level have been unable to attract a large student population as compared to the conventional education courses due to various reasons.

In Maharashtra State a total of about 150 vocational courses are offered at +2 level in major vocational areas of Agriculture, Business and Commerce, Engineering and Technology, Health and Paramedical, Home Science and Humanities, Science and Education. the MSBVE also offers some courses at 10+2 level.

Presently in Maharashtra, approx 1444 senior schools are running 150 vocational courses with total intake capacity of 88020. However, approx 59,854 students appeared for HSC (Voc) examination in 2011.

Similar to the HSC (Vocational) scheme, the Government of Maharashtra also introduced BIFOCAL scheme at +2 level in 1977-78. The objectives of this scheme are providing opportunities of employment / self-employment for students at + 2 level and also an opportunity to pursue higher education. This scheme is very popular in Maharashtra and has gained acceptability amongst all stakeholders.

HSC (Vocational) Scheme

The present HSC (Vocational) scheme is given as under:-

Sr. No.	Subject	Teaching Period/Week		Examination	
		Theory	Practical/ Tutorial	Theory	Practical Internal
1.	English	5	--	80	20
2.	Second Language	5	--	80	20
3.	GFC	5	--	80	20
4.	Vocational Subject I	4	8	100	100
5.	Vocational Subject II	4	8	100	100
6.	Vocational Subject III	4	8	100	100

3.1.1 Benefits of HSC Vocational Scheme

1. This scheme is offered to students of Maharashtra at a nominal fee. As such it has created an affordable education system.

2. This scheme is supported by Vocational (Technician) Apprenticeship Training. This enables the students to get exposed to world of work and also earn a stipend in the process.

3. The students completing HSC Vocational in technical stream get admission into 2nd year of Polytechnic Diploma in the respective branch.

4. The students completing HSC Vocational also get admission into 1st year of undergraduate / Bachelors of Arts and Commerce programs in some of the Universities.

5. Some banks also give priority to HSC Vocational students while granting loan for start-up business proposals.

3.1.2 Problems of HSC Vocational Scheme

The lack of vertical and lateral mobility has resulted in a decline in the popularity of HSC Vocational courses amongst the student population. In many States across India, this scheme has been completely discontinued. At present only 2% of total student population at the 10+2 level are opting for vocational education at national level against the 25% envisaged by the Kothari Commission. In Maharashtra, the scene is promising where the enrollment is 6.8% of the total student population at the 10+2 level [Report –

National Workshop on Equivalence, Vertical Mobility of vocational courses at 10+2 level & Placement prospects of vocational pass-outs, 13th May 2010]. Some of the other limitations of the HSC(Vocational) Scheme are as under:-

1. Presently, only HSC (Vocational) students of technical stream get limited entry into 2nd year of Polytechnic Diploma. However, other stream students do not have this option.

2. There is a lack of trained vocational teachers at +2 vocational level. There is no institute dedicated to teachers training and resource development.

2. Recruitment rules unchanged to accommodate vocational students.

3. Lack of establishment of a state-level board to design vocational curriculum and create specialized learning material for such students

4. Lack of equivalence in the relevant scheme with conventional universities/colleges to facilitate movement from vocational to academic sector and vice-versa. Not all Universities provide vertical mobility into bachelors programs for HSC (Vocational) students. Presently entry is limited only to BA/Bcom/BBA. For example - Students pursuing HSC (Vocational) in Agriculture stream are not given admission in B.Sc Agriculture.

5. Limited number of vocational streams are offered at HSC (Vocational). The scheme was introduced in six streams covering 30 courses in 1986. Since then, no new courses have been introduced under this scheme

6. The curriculum of HSC (vocational) is rigid. It is neither modular nor competency based.

7. There is a lack of industrial linkages at HSC (vocational) level. The HSC (vocational) students are not market ready and hence do not get readily employed.

8. HSC (vocational) students lack general academic skills like problem solving, numeracy, analytical skills, computer literacy, team work, basic communication skills, leadership etc

9. HSC Vocational is not considered equivalent to ITI and Polytechnic courses by industries for employment purposes.

10. HSC Vocational students get admission into 2nd year of Polytechnic Diploma. Thus there is a loss of one academic year.

11. HSC (voc) students are not eligible to apply for all applicable/relevant entrance tests. For example:- HSC Vocational students are not allowed to appear for Engineering and Medical entrance exams in Maharashtra.

12. Apprentice Act 1956 has been amended in 1986 for vocational students as Vocational technician apprenticeship Act. However, unorganized implementation of the Act has resulted in depriving the HSC students from obtaining hands on industrial experience.

13. No financial assistance has been provided to vocational education institutes since 1991, the scheme was handed over by Central Govt. to State Govt. This has led to ill-equipped labs and workshops for training purposes. Some States have discontinued this Scheme due to lack of funding from the Center.

14. In spite of the introduction and subsequent expansion of vocational education at both SSC and HSC levels, the Government has failed to create any separate infrastructure/organization/ bodies for preparation of books, curricula, quality assessment, technology development, teachers training and other administrative setup as is available for general school education such as SCERT, Bal Bharati, Bal Chitravani, Student Guidance Cells etc.

15. There is a lack of industrial linkages at HSC (vocational) level. The HSC (vocational) students are not market ready and hence do not get readily employed.

3.2 **RECOMMENDATIONS**

1. Research has indicated that Industry require people with not only vocational training but also those having basic academic skills and life coping skills like problem solving, numeracy, analytical skills, computer literacy, team work, basic communication skills, leadership etc. It is thus recommended that general academic skill based courses should be included as a compulsory component of HSC Vocational syllabus. These general academic skill based courses should have different teaching-learning pedagogy based on practical, role play, interactive method and separate continuous assessment system.

2. In order to create opportunities of vertical mobility, the syllabus should comprise of applied subjects such as applied mathematics, applies sciences etc. These subjects may be introduced as electives as core component of the syllabus. The 'Applied' subjects should ensure coverage of core topics required for vertical mobility into respective undergraduate programs.

3. Conventional Universities and colleges should give equivalence to HSC Vocational students in order to facilitate lateral/vertical entry into undergraduate / bachelors programs in respective academic areas. Presently this lateral/vertical mobility is only possible for Arts and Commerce stream however, other streams such as Nursing,

Medical, Para Medical, Engineering, Agriculture etc do not allow entry to HSC Vocational students.

4. HSC Vocational students should be allowed to appear for Engineering and Medical entrance exams as well as other relevant entrance exams for admission into conventional bachelors degree programs.

5. HSC Vocational scheme should be expanded to cover high growth sector related courses such as Construction, Service, Retail, Banking & Insurance, Hospitality etc.

6. Courses of the HSC (Voc) curriculum should be modular and credit point based. A facility for credit banking and transfer should be created and available for students to make the curricula flexible and open.

7. In order to facilitate both vertical and lateral mobility into conventional academic sector, the following changes in HSC Vocational scheme are recommended. These changes will allow students to choose suitable groups as per their desire for mobility to other education sectors.

For 11th Std (Vocational)

S.No	**Subject**	**Teaching Period/Week**		**Examination**	
		Theory	Practical	Theory	Practical Internal
1.	English	5	--	80	20
2.	Elective I	5	--	80	20
3.	Elective II	5	--	80	20
4.	Vocational Subject I	4	8	100	100
5.	Vocational Subject II	4	8	100	100
6.	Vocational Subject III	4	8	100	100

Student can take any one subject in Elective I & II

Elective I	**Elective II**
Language viz Marathi, Hindi etc	General foundation course
Information Technology	Applied Science (Phy & Chem)
Applied Mathematics	Computer Application
Physical Biology (Botany & Zoology)	Business Mathematics
Business Economics	

For 12th Std (Vocational)

S.No	Subject	Teaching Period/Week		Examination	
		Theory	Practical	Theory	Practical
1.	English	5	--	80	20
2.	Elective I	5	--	80	20
3.	Elective II	5	--	80	20
4.	Life Coping Skills / Generic Skills	2	10	50	150
5.	Vocational Subject II	4	8	100	100
6.	Vocational Subject III	4	8	100	100

8. The students desirous of obtaining equivalence with NVEQF levels 3 & 4 may be given an exemption for the common modules covered under the HSC (Voc) syllabus. However, the prerogative for the same shall be with NVEQF.

9. It is also recommended that the HSC Vocational courses should be modified to be more 'competency-based' and in line with the NVEQF requirements in the future.

10. It is recommended that the focus should be on 'work-centered' education such as on-job training, industry visits, production-oriented training, apprenticeship, and industry liasoning etc thus creating industry-ready youth.

11. It is recommended that each college/school providing HSC Vocational should have tie-up with the local industry, NGOs and other community stakeholders through the Industry Management Committee thus facilitating inputs in project work, teacher training, guest lectures, student grooming, summer placements, in-service training of industry employees etc.

12. It is recommended that each college/school providing HSC Vocational should have a Placement Cell, Entrepreneurship Development Cell and Finishing School/Department.

13. Liaisoning with Sector Skill Councils to engage industry and community is recommended to be carried out. PPP models with incentives for industry participation may be encouraged.

14. The HSC Vocational pass out should be given parity (declared as alternate qualification) to ITI and Polytechnic pass out students for the purposes of recruitment in Govt and non-Govt organizations.

15. The recruitment rules of the Public Service/ Govt/ Semi-Govt Departments should be suitably modified to recognize HSC Vocational qualification for employment purposes.

16. The HSC (Vocational) Junior Colleges or Schools may get affiliated to the Vocational University in order to offer diplomas under the aegis of the University.

17. The HSC (Vocational) Junior Colleges or Schools will be required to have all their courses assessed by Maharashtra Vocational Education and Training Commission (M-VETC) so as to ensure quality & standardization as per M-VETC requirements.

18. The curricula and evaluation methodologies for HSC (Vocational) should be as per M-VETC guidelines.

19. Teacher training is required to orient the vocational teachers to the new teaching learning methodology, scheme and curricula.

20. It is recommended that in the future the activities related to assessments, examinations and declaration of results of HSC (Voc) students or other students pursuing courses / diplomas at 10+2 level may be conducted by MSBTE.

3.2.1 **Benefits of the new proposed HSC (Vocational) scheme**

1. The above recommendations will provide an impetus to the enrollment of students in the vocational education sector.

2. The changes and enhancements to the HSC Vocational syllabus will improve the employment opportunities to students. The inclusion of general academic skills and industry liasoning will result in better acceptability of students within the local industry.

3. The change in recruitment rules will provide guaranteed employment options to vocational students.

4. Lateral and vertical mobility into and from academic sector to vocational sector will be achieved through introduction of applied subjects as electives.

5. The options of vertical and lateral mobility will also popularize and expand the vocational sector amongst students and thus facilitate higher enrollment into this sector.

6. The linkage to NVEQF will also ensure alignment with Central Govt. plans. Credit based and modular curricula will be of great benefit to students especially the provision for credit banking and transfer.

7. Popularization of vocational education will lead to increase in GER at the 10+ level.

8. Higher enrollment into the vocational sector will reduce the burden on conventional colleges and universities and will open new opportunities of learning for students.

9. Bringing the higher secondary vocational education under the purview of Maharashtra vocational education and training commission will lead to standardization, improved efficiency, smooth functioning and better quality.

10. The affiliation to the Vocational University will create opportunities of higher education in the form of diplomas for students while continuing to study in the same school or Junior College.

11. By offering M-VEC recognized courses the HSC (Vocational) stream will receive further recognition and will result in standardization of curricula.

3.3 **BIFOCAL SCHEME**

The Bifocal stream which was introduced in 1977-78 by the Govt. of Maharashtra, is offered through 1575 Vocational Jr Colleges including 49 Govt colleges, 129 aided non-govt colleges and 1397 non-aided private institutions. The intake capacity of these colleges is 1, 65,350. This scheme is popular with students in the technical stream as it gives option of one bifocal subject (200 marks) in lieu of two other subjects (one language, biology). Students prefer these bifocal subjects instead of the more theoretical subjects. It is apparent that students look at the BIFOCAL stream only to get additional marks in the HSC examination, with the objective of pursuing conventional education and not because of their liking for vocational education.

The bifocal scheme is offered in four vocational groups consisting of 16 subjects.

The present BIFOCAL scheme is given as under:-

Sr. No.	**Subject**	**Teaching Period/Week**		**Examination**	
		Theory	Practical/ Tutorial	Theory	Practical Internal
1.	English	5	--	100	--
2.	Mathematics	5	--	100	--
3.	Physics	4	4	80	20
4.	Chemistry	4	4	80	20
5.	Vocational Subject I	4	4	80	20
6.	Vocational Subject II	4	4	80	20

3.3.1 **Benefits of HSC Bifocal Scheme**

1. This scheme provides vertical mobility into undergraduate programs.

2. The scheme provides a platform for the students who wish to go for professional degrees like Engineering and Medical.

3. This scheme is popular with students and experience suggests that meritorious students join this scheme.

4. It gives rebate of two general subjects to students who are inclined and determined to go for professional / conventional education in future.

5. The Vocational subjects are practical oriented and hence enables the student to obtain high scores and thus a better overall result and higher percentage ont eh HSC Marksheet.

3.3.2 **Problems of HSC (BIFOCAL) Scheme**

1. Very few students opting for HSC Bifocal are entering the labour market.

2. Many institutes have not created separate infrastructure to cater to the training needs of vocational education and training

3. 40% seats in bifocal are reserved for pre-vocational students. However, these seats are not fully utilized as the feeder channel does not provide sufficient technical students for this scheme. These seats are later given to the non-technical students.

4. The bifocal stream does not allow students to opt for any vocational subject of his choice. The option of vocational subject is restricted to the bifocal stream the student is enrolled in.

5. The periodic revision of curriculum is not taking place for this scheme.

6. It is apparent that students look at the BIFOCAL stream only to get additional marks in the HSC examination, with the objective of pursuing conventional education and not because of their liking for vocational education.

3.3.3 **RECOMMENDATIONS**

1. The curriculum revision should take place periodically in consultation with industries to keep it in line with the market needs.

2. It is recommended that the focus should be on 'work-centered' education and on-job training, industry visits and production-oriented training must be made a compulsory component of the curriculum

3. The marking scheme of bifocal stream must give 50% weightage to theory and 50% weightage to practical.

4. Options of various vocational subjects as electives must be given to students without any restrictions. A multi-disciplinary approach is recommended to be adopted.

5. Separate infrastructure with state of art equipment must be established to conduct hands on training for the bifocal students

6. The theory workload of the teaching staff should be increased by atleast one hour per week. The teaching staff must also take responsibility for project work and industry visits of the students.

7. The scheme must be continued with 200 marks allotted for vocational subjects.

CHAPTER IV

VOCATIONALIZATION OF UNORGANIZED SECTOR

4.1 PRESENT SCENARIO OF UNORGANIZED SECTOR

Over 90% of employment in India is in the unorganized sector. For this large section of the population attainment of Vocational education and training is crucial. Within this unorganized sector, 40% are employed by enterprises/companies, while about 60% are self-employed. Male workers constitute about 60% of the informal employment in manufacturing and services sector, while female workers constitute about 40%. As of 2007, about 427 million persons were employed in various sectors, with agriculture accounting for about 50%-55% of the employment. (*Source: Human Resource and Skill Requirements in the Unorganized Sector Study by National Skill Development Corporation*)

The National Skill Development Policy, 2009 has identified the target groups in the unorganized sector as own-account workers, workers and apprentices in micro enterprises; unpaid family workers; casual labourers; home-based workers; peripatetic workers and migrant labourers; out of school youth and adults in need of skills; farmers and artisans in rural areas, among others.

The various sectors and areas of occupation in the Informal/Unorganised Sector are illustrated below:-

Sector	Job title
Manufacturing Sector	
Wearing Apparel; Dressing and Dyeing of Fur	Stitchers, tailors, sewing machine operators, dress makers, sewers, upholsterers
Leather and leather goods	Stitchers, tanners in tanneries, cutters
Tobacco Products	Tobacco and beedi makers
Food Products and Beverages	Operators, packers, sorters, cleaners, inspection
Textiles	Stitchers, tailors, sewing machine Operators
Furniture; Manufacturing	Carpenters and wood workers
Other Non-Metallic Mineral Products	Machine operators, workers, helpers
Fabricated Metal Products, Except Machinery and Equipment	Welders, Electricians, Fitters, Machinists
Chemicals and Chemical Products	Machine operators, workers, helpers
Construction	Workers, Masons, Carpenters, Plumbers, Electricians, stone cutters
Sector	**Job title**

Services Sector	
Hotels and Restaurants	Cooks, stewards, waiters
Transport, Storage, and Communication	Drivers, helpers, loaders, workers
Other community, social, and personal services	Domestic workers, cleaners, beauticians, security guards, hair dressers, and other related areas
Retail	Show owners (kirana), assistants, Salesmen

Source : NSSO, and IMaCS analysis

The National Policy of Education, 1986 (as modified in 1992) in para 4.14 states that a critical development issue today is the continuous upgradation of skills so as to produce manpower resources of the kind and number required by the society Special emphasis will, therefore, be laid on organization of employment/self employment oriented, and need and interest based vocational and skill training programmes.

The training in the informal sector is mainly carried out through NIOS which offers 85 courses through 700 providers, Community Polytechnics which train about 45,000 annually, Jan Shikshan Sansthan (JSS) offering 255 types of vocational courses.

However, no mechanism exists that recognizes the experience and the skill attained by a person in the non formal sector which will enable him to upgrade his skill through formal vocational training.

4.2 **MODULAR EMPLOYABLE SCHEME (MES)**

Under the skill development initiative programme of Government of India, scheme on Modular Employable Skills (MES) for training, assessment and certification of the school drop outs, existing workers who have acquired proficiency through informal means, agriculturists, women, physically challenged persons etc has been introduced in 2007. This scheme aims to help the people in the unorganized sector to access the decent jobs in the word of work.

MES courses are provided through 855 Vocational Training Providers (VTPs). The MES courses are available in 65 sectors covering nearly 1400 courses. New courses are being introduced at regular basis as per the market demands.

The salient features of the scheme are as under:-

(a) Course duration - 90 hrs to 300 hrs
(b) Fee reimbursement is done to the passout students from Govt of India.

(c) It is a totally flexible scheme

(d) The assessment is done by third party/assessing body appointed by DGET.

(e) National level certificate of NCVT is given to MES a passout student which enables them to seek a job.

(f) MES certificate is also given to persons in unorganized sector who have acquired skill through informal training by carrying out an assessment as a direct student.

4.2.1 **Problems of MES Scheme**

1. There is no standardization of assessment for MES courses.

2. For each of the MES courses parameters such as requirement of infrastructure, staff, equipment, assessment criteria, course content etc are not defined.

3. The reimbursement of fees to the students is often delayed.

4.2.2 **RECOMMENDATIONS**

1. It is recommended that the MES courses should be brought under the ambit of the M-VEC and certificates may be offered by the M-VEC/Commission.

2. It is recommended that for each MES course the assessment criteria should be well defined. Standardization of assessment methodology must be done through M-VEC.

3. Synchronization of testing, certification ad reimbursement of fees must be properly done under the M-VEC.

4. The VTPs must take the responsibility of linking jobs to MES scheme.

5. The resource requirement such as infrastructure, teaching staff, labs etc must be pre-defined for each of the MES courses to enable standardization of quality of training being imparted by various VTPs.

6. A district wise survey is recommended to undertaken to map the sector wise requirement of manpower in the unorganized sector. MES courses can be then designed to meet the specific market requirement.

7. After NCVT training and certification, six month industrial training must be made mandatory. A dual certificate for NCVT courses may be offered through M-VEC.

4.2.3 **Other Problems of Vocational Training in unorganized sector**

1. The provision of recognition of prior learning (RPL) does not exist in any of the formal vocational training providers like ITIs, Polytechnics etc. Thus, public sector vocational training providers have a limited role in the training of the unorganized sector.

2. The training needs of the informal sector cannot be addressed through traditional vocational education and training methodology. The sectors of occupation identified for the unorganized sector are not covered by any of the formal vocational training providers.

3. Additional bridge courses are not offered by any of the VTPs to enable people in the informal sector to enter mainstream vocational education sector.

4. The national policies on education has focused on providing primary education in the informal sector rather than alternate skill oriented training coupled with general academic skills.

5. The informal apprenticeship training which is predominant in our country is based on traditional methods of training and quality of training delivered depends on the skill of the artisan. The basic foundation of general education is missing and only functional skills are being passed from generation to generation.

6. Entrepreneurs in the unorganized sector require additional skills like life coping skills, numeracy, problem solving, analytical skills, quality control, marketing, legal regulations etc. These skills are not being imparted by any vocational training provider.

7. The unorganized sector students who acquire vocational training find it difficult to easily obtain financial assistance both for vocational training and for starting their own business. As such students from this sector do not see a huge benefit in the vocational training stream and are not readily open to pursuing this stream.

8. The Industry does not emphasize for formal vocational training for the unorganized sector work force due to which there is no motivation or compulsion on such workers to obtain vocational certification.

9. Industry recognition for MES courses is not very high.

4.3 **RECOMMENDATIONS**

1. Recognition of Prior learning (RPL) is recommended to be given to the persons in the unorganized sector for the skills obtained by them through life experience and informal training. Department for Recognition of Prior Learning are required to be established in formal vocational training institutions to give credit to the students coming from the

unorganized sector. Bridge courses can be designed to enable the students with informal training to enter the formal vocational training sector. The RPL will offer courses in line with NVEQF. The Dept. of RPL will give joint certification along with M-VEC.

2. Specially designed modular courses must be provided through non-government vocational providers and NGOs to meet the diverse requirement of the informal sector.

3. In service training for the workers and apprentices in micro enterprises is recommended to be provided in public private partnership.

4. Non Formal education offering SSC or its equivalent certification in vocational stream is recommended to be created for the unorganized sector. Such students can be given bridge courses enabling them to acquire SSC or its equivalent 10th grade certificate. The Maharashtra Institute of Open Education (MIOE) has proposed to roll out such a scheme through SIOS. The Committee recommends that MIOE considers existing problems of the unorganized sector and tailor its proposed scheme in line with the above recommendation of this committee.

5. The students appearing for SSC/10th grade through NIOS must be allowed admission to HSC (Vocational) by relaxing the academic requirements and norms.

6. At Vocational University level, Department of Recognition of Prior Learning and Department of Continuing Education will address the vocational training needs of the unorganized sector by offering specially designed modular courses and this committee has put forth such recommendation in the later sections of this report.

7. Continuing vocational training programs must be offered through VTPs which are affiliated to the Vocational University or under M-VEC, both in the public and private sector.

8. Formal educational requirements may be relaxed to give access to vocational education and training for the unorganized sector.

9. Industry needs to emphasize on formal vocational training for its entire workforce including those from the unorganized sector. Thus, it is important that the industry emphasizes a vocational training certification from M-VEC for the unorganized sector at the time of retaining them or within a stipulated period of time after joining the industry.

CHAPTER V

VOCATIONAL, TECHNICAL TRAINING & SKILL DEVELOPMENT

5.1 INDUSTRIAL TRAINING INSTITUTES / CENTERS

The DGE&T in Ministry of Labour and Employment conducts vocational training courses through 8306 ITIs/ ITCs across India (2140 are Govt. ITIs and 6166 are private ITCs) in 114 trades for school leavers. Such vocational courses are of 6 months to 3 years in duration and 8th to 12th pass students can seek admissions to these courses.

In the State of Maharashtra, there are a total of 416 ITIs and 310 ITCs with an intake of approximately 1,50,000 (113644 in ITIs and 35512 in ITCs) students. Total of 116 NCVT vocational courses are available across India out of which the State of Maharashtra has introduced 89 courses in these ITIs and ITCs. These courses range from 6 months to 3 years duration and cover wide range of sectors such as Engineering and Non Engineering. The Non Engineering sector includes Food, Textile, Services, Para Medical etc.

Sr. No.	**Subject**	**Examination Scheme**			
		Theory	Sessions	Practical Internal	Total
1.	Employability Skills (Quality mgmt, Communication skills, English, safety environment, leadership & teamwork)	50	-	-	50
2.	Engineering Drawing	50	20		70
3.	Workshop Calculations & Science	50	10		60
4.	Trade Theory	100	20		120
5.	Workshop Trade Practical	-	100	300	400
6.	IT Literacy	Not reflected in the marksheet			
	Total	250			700

5.1.1 **Benefits of pursuing Industrial Training Institute programs**

1. The curriculum is designed at national level in consultation with industry and is uniform across all ITIs

2. ITI pass outs obtain National level trade certificate of NCVT.

3. Training is practical oriented and skill based which is more suitable for technical trades required in the industries. This improves the employability of the students in the organized industrial sector.

4. CTS scheme is supported by well structured apprentice training scheme which gives facility to all ITI pass out students to get industrial exposure with on-job training on stipend basis which makes them industry-ready and fully skilled.

5. A nominal fee is charged in Govt ITIs.

6. As the scheme has been in place since 1950, it has more industrial acceptance.

7. 2% seats are reserved for ITI students in respective branches of Polytechnic Colleges.

8. The ITI pass out students can enroll into vocational diploma programs under artisan to technocrat scheme.

5.1.2 **Problems of Craftsman Training Scheme (ITIs)**

1. ITI courses are mostly available in the engineering trades. Non Engineering and Service sector courses are not widely available in ITIs.

2. The salaries received by ITI students are relatively low in comparison to the training received.

3. ITI students get placed in low level jobs with very few emoluments.

4. No general academic skills like life coping skills, numeracy, analytical skills, etc are compulsory part of the syllabus. Industrial experience suggests that the prospective employers want workers with these general academic skills in addition to hard skills.

5. The curriculum is not competency based. The teaching-learning pedagogy is not well developed for competency based assessment.

6. No modern techniques of teaching and training are employed. Use of ICT in training is minimal.

7. The faculty is not well trained and lacks the necessary qualification. Faculty often does not have latest skills. Further continuous skill upgradation through periodical refresher training courses is not available or emphasized. This fact is supported by feedback received from faculty working in ITIs and Vocational Colleges across Maharashtra .

8. The syllabus is rigid. The system does not allow for any changes to be incorporated in the curriculum as suggested by the local industries on a continuous basis.

9. The curriculum revision procedure is lengthy and takes more than 5 years which results in the syllabus getting outdated.

10. The ITI courses are generally opted by students with low aptitude for academics and belonging to economically backward sections and rural population.

11. 30% reservation has been given to female students in all trade of ITIs, yet only 3% girls enroll for ITI courses.

12. Vertical mobility is limited to 2% seats in Polytechnics for two year duration ITI courses. Students pursuing non technical courses do not have an option of career advancement.

13. As the training imparted is out of date, the industries need to re-train the students before employing them. Thus, the students passing out of ITIs are not market ready.

14. Modernization has led to specialization in the skills required by the industries. Certificate level training is not sufficient for students to undertake complex jobs. This has created a need to offer further specialization through vocational diploma and vocational degree programs to vocational sector students.

15. As no standard procedure has been adopted for sector wise skill mapping and future manpower projection, the selection of courses and thereby the supply of manpower is not in line with market needs.

16. The procedure for setting up of ITCs is rigid in nature. This discourages private industries and other private players from coming forward and establishing ITCs.

5.2 RECOMMENDATIONS

1. It was recommended that students undergoing 2 year ITI courses after passing 10th std may be given an option of obtaining HSC pass certificate by meeting the following compliances:-

(a) The students shall have to appear for following subjects externally:-
- English (core subject)
- Applied Mathematics/Information Technology (Elective I)
- Life Coping and General Academic Skills (Vocational Subject I)

(b) Exemption shall be given for Elective II against Trade theory II covered under the ITI scheme.

(c) Exemption for Vocational subjects II and III shall be given against Workshop practice.

Sr. No.	HSC(Vocational)	Mapping for ITI two -year Engg Courses
1.	English	Appear Externally
2.	Elective I	Applied Maths/Information Technology (Appear Externally)
3.	Elective II	Trade Theory (exempted)
4.	Life Coping Skills / General Academic Skills	Appear Externally
5.	Vocational Subject II	Workshop Practical (exempted)
6.	Vocational Subject III	Workshop Practical (exempted)

Note: The proposed scheme for ITI students to get HSC (Voc) certificate is applicable only for Engineering trade -two year courses and three year courses only. Non Engineering trades – Certificate courses of ITI in this group are only upto one year duration and as such they will not be considered for HSC (Vocational) mapping.

2. The ITIs courses should be in line with NVEQF and should be regulated through M-VEC.

3. Systematic skill mapping and labour market analysis is required to be carried out and curriculum revised in line with NVEQF.

4. The existing qualification of ITI faculty needs to be of higher standard with compulsory component of industrial experience. Emphasis should be given to teachers training and skill upgradation. Vocational University can undertake the responsibility of faculty training and development

5. The curriculum revision should be undertaken on annual basis in line with the industry needs. The curriculum should be modular, competency based with multi entry exit option.

6. Research has indicated that Industry require people with not only vocational training but also those having basic academic skills and life coping skills like problem solving, numeracy, analytical skills, computer literacy, team work, basic communication skills, leadership etc. It is thus recommended that general academic skill based courses should be included as a compulsory component of ITI syllabus. These general academic skill based courses should have different teaching-learning pedagogy based on practicals, role play, interactive method and separate continuous assessment system.

7. The equipment and machinery used to impart training should be advanced, modern and similar to machinery used in industries for production purposes.

8. Strong linkages are required to be developed with local industries through in-service training of employees, industrial visits for students, apprenticeship training, guest lectures, skill exchange and placements, production oriented training, industrial consultancy projects etc.

9. Private organizations should be encouraged with relaxed norms to establish ITCs.

10. Formalization of Recognition of Prior Learning scheme must be done by ITIs.

5.3 MAHARASHTRA STATE BOARD OF VOCATIONAL EDUCATION (MSBVE)

Presently, Maharashtra State Board of Vocational Education (MSBVE) is offering 1014 courses of duration varying from 6 months to 2 years and covering school drop outs, minimally educated and graduates. Approx 70,000 students are enrolled in MSBVE courses across Maharashtra. Many courses / diplomas are offered by MSBVE at 10+2 level. These courses are however, terminal in nature and do not provide any vertical mobility options to the students.

5.3.1 RECOMMENDATIONS

1. The MSBVE courses should be brought under the M-VEC (under suitable departments).

2. MSBVE short-term certificate courses (of 1 year or lesser duration) should go under the M-VEC and offered as M-VEC courses.

3. MSBVE 2 year duration courses after 10th std should be converted to HSC (Vocational).

4. The MSBVE is recommended to be merged with MSBTE and additional MSBVE staff appointed to the Department of School Vocational Education under M-VEC.

5.4 MAHARASHTRA STATE BOARD OF TECHNICAL EDUCATION (MSBTE)

Maharashtra State Board of Technical Education (MSBTE) offers diploma courses in 23 disciplines through polytechnics and affiliated institutions.

Maharashtra has 1077 Polytechnics (385 – AICTE approved, 183 – Pharmacy/Non AICTE & 509 other Govt approved Institutes running short term courses and diplomas). Total Intake capacity in Polytechnics is 1,46,169 out of which actual enrolled are 1,30,000 students. Polytechnics offer diploma courses of one year to three year duration after 10th, 12th, diploma and graduation. These course are in various disciplines such as Engineering, Hotel Management, Catering Technology, Pharmacy, Fashion Technology, Wine Technology, Management, Industry & Fire Safety, Computer & IT and Travel, Tourism. Several scholarships are also offered to deserving students.

AICTE diploma programs have gained tremendous popularity in the Engineering sector as the vocational students have clear vertical mobility paths into Engineering Colleges as these students get direct entry into 2nd year Engineering. Students can also take admission in 1st year engineering if seats remain vacant. In 2010-2011, 22,023 seats were vacant in engineering 1st year. Non AICTE diplomas are mostly terminal in nature with limited vertical mobility options.

The Polytechnics also run non-AICTE diploma programs which do not provide any vertical mobility options to the students. However, these diplomas are viable options for vocational students who do not have other options of higher education.

5.4.1 Benefits of the Scheme

1. There is a 20% quota for Polytechnic students in Engineering College. These students get direct entry into 2nd year of Engineering without appearing for an entrance exam.

2. State Board has given AICTE diploma equivalence to HSC

3. Besides the 20% quota, seats which remain vacant in 2nd year Engineering are being offered to Polytechnic students. The concurrence of the Govt and AICTE has been obtained.

4. Permission has been granted to desirous Engineering colleges to start a separate Division for Polytechnic Diploma holders

5. AICTE also allows Engineering Colleges to admit Polytechnic students in 1st year Engineering if seats remain vacant. No entrance test is required for the same.

5.4.1 **RECOMMENDATIONS**

1. Students pursuing MSBTE courses of 2/3 years duration should be given vertical mobility into undergraduate degree programs in their respective disciplines in conventional Universities/Institutions.

2. MSBTE courses in non engineering sectors should be increased to meet the requirements of high growth service sector.

3. Students completing Polytechnic may be allowed to appear for HSC exam externally if they desire to enter academic sector.

4. The curricula and evaluation methodologies of all MSBTE courses should be as per M-VEC guidelines.

5. The Polytechnics of MSBTE may become affiliated to the Vocational University in order to offer diplomas and associate degrees at 10^{th}, 12^{th} and graduate levels.

6. MSBTE is recommended to be restructured under M-VEC for conduct of examinations, assessment, declaration of results, and all related activities for M-VEC courses, diplomas, certificates and any other programs at secondary, higher secondary and tertiary level as assigned by the M-VEC from time to time, other than the programs offered by the Vocational University.

7. All MSBTE courses/programs should be conducted by the M-VEC. Nevertheless the AICTE recognition and control should continue for the AICTE recognized diplomas.

8. The Maharashtra Secondary and Higher Secondary Examination Board presently conducts examinations and declares results for HSC (Voc) students. It is recommended that this activity may be taken over by the MSBTE in the future.

9. The MSBTE should undertake any activities as may be assigned by M-VEC from time to time

8. The MSBTE Act - 1997 can be to suitably amended to make the above provisions.

CHAPTER VI

COMMUNITY COLLEGES

6.1 PRESENT SCENARIO

The Community College is an alternative system of education, which is aimed at empowerment of the disadvantaged and the underprivileged (Urban poor, Rural poor, Tribal poor and Women) through appropriate skills development leading to gainful employment in collaboration with the local industry and the community and achieve skills for employment and self employability of the above sections of people in the society. The Community College is an innovative educational alternative that is rooted in the community providing holistic education and eligibility for employment to the disadvantaged.

The Community College scheme was rolled out by the Govt. of India in 2008, by appointing IGNOU as the nodal agency. There are 128 Community Colleges established as of date under the aegis of IGNOU. Community Colleges generally have a 2-year curriculum that either leads to an Associate degree with a facility for further transfer to an undergraduate program in a college or leading to the students' direct entry into any occupation or trade.

6.1.1 Present Scheme

1. Associate Degrees of 2 years duration are offered at +2 level by Community Colleges and other Vocational Institutions in India.

2. Community Colleges also offer short term certificate courses and diploma programs. The certificate is from the College or joint certificate with IGNOU.

3. Present courses are in various vocations ranging from hospitality, tourism, para medical, technical, services etc.

6.1.2 Problems with present scheme

1. The Associate Degrees are not yet available in a wide range of vocations and are not popular amongst students as this scheme is not implemented in all States.

2. There is no uniformity or standardization of course content, curricula or certification.

3. Vertical Mobility is not clearly defined - The purpose of this scheme was to award associate degrees in the Community Colleges and also to provide vertical mobility into under graduate programs at IGNOU or other Universities/Colleges. However, this scheme

did not gain popularity as the mobility options are not clear and provided for. Other than IGNOU, no conventional colleges or Universities accept Community College students.

4. The benefits of this scheme were not clearly defined and communicated to potential students. All stakeholders including UGC, Conventional Universities and Local Colleges have not given a buy-in for this scheme as such it has remained restricted.

5. The overall implementation has remained fragmented and ineffective.

6. Vertical Mobility into other Universities for undergraduate programs or into Polytechnics for diplomas is not available.

7. Credit Transfer across other Universities (other than IGNOU) is not available.

8. The certificate courses although vocational in nature do not focus on skill development and hands-on training. Further such certificates do not have any recognition through DGET or any other national body – other vocational training providers offer NCVT certificates which are nationally recognized. However students completing certificate courses from Community Colleges in vocational areas do not get NCVT certificate or any other nationally or State recognized certificate automatically.

9. There is no mechanism for quality check and no emphasis on the vocational teaching learning pedagogy. As a result the quality of teachers, and teaching in Community Colleges is questionable as compared to other accredited vocational training providers.

10. Community Colleges do not have standardized infrastructure, laboratories or equipment as compared to accredited vocational training providers as such the quality of hands-on training is questionable. This scheme has not been recognized by any State Govt or UGC as such there are no 'defined' parameters for establishing or maintaining a Community College.

6.1.2 **Benefits of this scheme**

1. The objective of the Community College scheme to create opportunities for the local community by interacting and liasoning with all local stakeholders is immensely beneficial from the context of creating youth who can be gainfully employed within the local community. This benefit of having close ties with local community is the spirit with which community college schemes become successful.

2. The local contextualization of curricula and courses can be tremendously beneficial to the student population as well as local industry.

3. The facility of vertical mobility from certificate courses to diplomas to 2 year associate degrees after 12th (+2 level) is extremely attractive as it offers a modular, open education system with multi-entry and multi-exit options.

4. The cost effective fee structure offered in community colleges is attractive for the target student population who generally come from under privileged, economically backward strata.

5. The community colleges admit a wide spectrum of target audience representing varied age groups, socio-economic & culturally diverse backgrounds. This diverse student population representing the local community creates a rich ethos within the community colleges.

6. In addition to vocational courses, the community colleges are also meant to offer all kinds of liberal arts, social science, traditional crafts related courses required by the local region for example swimming, singing, musical instruments, weaving, personal tax filing, home décor, parenting etc.

6.1.3 **RECOMMENDATIONS**

1. The Community Colleges abroad especially in USA have become extremely successful in creating employable youth required by local industry, thus contributing to the local community development. This scheme in its spirit is highly effective and beneficial provided the implementation meets the objectives. It is therefore recommended that Community Colleges be setup under the aegis of the State Govt. with linkages to M-VEC and the Vocational University, especially for award of certificates /degrees, quality assessment, accreditation and standardization of curricula.

2. The Community Colleges should be affiliated to the Vocational University for the purpose of offering diplomas and associate degrees. Further, they may also offer short term certificate courses recognized by M-VEC with a 'dual certificate' from the College and M-VEC. This will be of tremendous benefit to the local student population as the certificate/diploma/associate degrees will be M-VETC recognized.

3. State Govt. should ensure that local universities and colleges give recognition to diplomas and associate degrees awarded by the Community Colleges for the purposes of admission into their system.

4. Community Colleges should ensure that the vocational teaching learning pedagogy is followed by recruiting trained faculty and must also ensure quality of education provided to students. The college must emphasize hands-on and on-job training, field visits, project work etc for students pursuing vocational courses. For this the college must create adequate infrastructure as per guidelines laid down by M-VEC or the Vocational University.

5. The Community Colleges must establish linkages with the local industry, NGOs and other community stakeholders for the purposes of placement, internships, project work, guest lectures, filed visits etc.

6. The Community Colleges must emphasize on localization and contextualization of content and curricula so as to benefit the local community and industry.

6.1.3 **Benefits of proposed implementation of the Community Colleges**

1. By ensuring that the certificate/diplomas/degrees offered by the Community Colleges are M-VEC recognized, the students will be benefited by getting a standardized curricula and quality. Students and industry will also benefit through creation of employable youth who have skills that have been measured and assessed by M-VEC.

2. Community Colleges will benefit by being affiliated to the Vocational University for providing vertical mobility options to all their students. This will also increase the popularity of the courses and thus the Community Colleges.

3. By allowing Community Colleges to be opened, the State Govt. can ensure localization of vocational education & training while at the same time the local community and industry will benefit and grow.

4. Since the courses offered by Community Colleges will be recognized M-VEC as well local Universities and colleges, students passing out will readily find entry options into local conventional universities and colleges for further education as well as employment options with local industry.

5. Localization and contextualization of content and curricula will enable the Community Colleges to contribute to the local community & socio-economic development as well as industrial growth.

CHAPTER VII

VOCATIONALIZATION OF HIGHER / TERTIARY EDUCATION

7.1 PRESENT SCENARIO

In the changing global scenario, employment possibilities of graduates and post-graduates of general subjects are becoming increasingly limited. The education imparted at degree level is not oriented to the market needs and neither is it skill based.

Attempts to restructure the Indian education have been made over a period of time. However, the vocational education system has remained terminal in nature. The students pursuing courses in the vocational streams do not have an option of vertical mobility into degree programs in their chosen vocational sector. This coupled with other reasons of quality, standardization, recognition and fragmentation have led to the failure of various vocational schemes introduced at both National and State level.

University Grants Commission (UGC) also launched the scheme of vocational education in the academic session of 1994-95. This curriculum of vocational education was introduced as a part of undergraduate courses of Arts, Science, Commerce, and Engineering & Technology. At present this scheme is being implemented in 100 Universities covering 1317 colleges. However, this scheme has not been successful. Evaluation of Vocational Education Scheme of UGC done by Institute of Applied Manpower Research suggests that lack of infrastructure, absence of trained teachers, poor quality of training, lack of on the job training and practical oriented approach were the major reasons for the failure of this scheme.

The failure of the above scheme also indicates that vocationalization of tertiary education cannot be done through conventional universities. The different teaching learning pedagogy of Vocational education and training cannot be imparted through existing colleges and Universities without training the faculty and creating infrastructure or linkages with industry which are critical components for success.

In the State of Maharashtra, Vocationalization of higher secondary education has been implemented through introduction of the MCVC scheme popularly known as HSC (vocational) scheme. However, survey conducted by the Committee indicates that students undergoing HSC (vocational) aspire for higher education. Thus, vocational education at higher secondary level must be viewed as a preparatory stage for students to enter higher / tertiary education system rather than as a terminal stage. Furthermore the Community Colleges, Polytechnics and other VTPs need to have a comprehensive vocational education system with clear vertical mobility options in order to make the vocational stream successful and popular. Today, many parents and young children do not see the vocational stream as a viable alternative to the academic stream inspite of the fact that they may have

more aptitude for 'hands-on' courses rather than theoretical subjects. The creation of a clear, well defined vocational education system starting at school level going upto higher secondary, graduate and post graduate level will give birth to a popular alternate system of education which will create skilled human resources suitable for employment and entrepreneurship within the local industry and community.

Worldwide, such a comprehensive vocational education and training system is not only available as an alternative system but is also extremely popular and successful. In fact in many countries such as Germany, China, Korea and others students prefer the VET system over the academic sector as it offers tremendous potential for gainful employment. One of the key factors for the success of the VET system in other countries has been the opportunities for vertical and lateral mobility into higher / tertiary vocational education programs. Such higher / tertiary vocational education programs are offered in other countries through dedicated Vocational Universities, Universities of Applied Sciences, Dual Mode Universities and Community Colleges. In Germany for example, the Universities of Applied Sciences have become extremely popular over past few decades and have trained majority of the country's workforce. It is seen that industry preferred students passing out from such Universities in Germany as compared to conventional / academic Universities. Today there are about 160 Universities of Applied Sciences in Germany. A similar situation exists in China, Korea and Australia where students have started opting for the vocational system and are participating in large numbers in the vocational higher / tertiary education programs. It is seen that such universities have also become a bee-hive for industrial employees to obtain advanced skill development and continuous skill upgradation.

A critical component for the success of the VET system will therefore be, the creation of a Vocational University in the State of Maharashtra. The Vocational University will perform an integral role in the development of a vocationally trained human resource pool as well as trained teachers, trainers and assessors. The Vocational University will create a platform for students to obtain advanced skills and training in various vocational areas. Furthermore, the University will also provide opportunities for continuous life long skill upgradation, entrepreneurship, career growth, research into labour market trends / requirements, acquiring advanced skills, building foundations for theory and concepts etc.

With this in mind, the Committee recommends establishment of a Vocational University in the State of Maharashtra. The concept of the Vocational University is elaborated in subsequent pages.

7.2 VOCATIONAL UNIVERSITY

7.2.1 Vision of the Vocational University

To create a University which blends education & training in order to develop skill based competencies in line with market needs, thus, facilitating human resource development and socio-economic growth of the community & society.

7.2.2 Mission of the University

To create an environment which fosters learning, research, skill development and training in various vocations, bringing students, faculty & industry together on a common platform.

7.2.3 Objectives of the University

The primary objective of the Vocational University is to provide vertical mobility to students in vocational stream by offering Bachelors, Masters and Doctoral programs in vocational studies and offer various specializations as required by local community & industry.

The specific objectives of the University are:-

(a) To provide a teaching learning pedagogy focused on hands-on training and skill development in line with market needs.

(b) To conduct research in labour market requirements in order to understand emerging trends and offer suitable curricula, courses & programs.

(c) To offer facility for recognition of prior learning and credit banking/transfer system

(d) To provide students an opportunity of life long and continuous training through University courses.

(e) To employ flexible modular approach to training thereby enabling multi entry and exit option.

(f) To conduct pedagogical and skill enhancement training and development programs for faculty and trainers who are involved in imparting vocational education & training.

(g) To encourage industrial participation through establishment of innovation labs, in-service training centers and active participation in all aspects of governance, curricula design, placement, internships etc.

7.2.4 **Mode of Education & Teaching – Learning Pedagogy**

1. Vocational University shall emphasize on a different teaching – learning pedagogy with a special focus on skill based and hands-on learning and training. Teaching will take place in the form of lectures supported by practicals, seminars, filed visits, etc. At the same time the University will ensure that a strong foundation of required theoretical inputs is given to students.

2. Vocational University shall offer vocational programs through online, distance and life-long learning mode in addition to face-to-face mode. This will be especially helpful for continuous skill up-gradation.

3. Vocational University Curriculum shall emphasize life coping skills, general educational skills such as English competency, analytical skills, problem solving, entrepreneurial skills, team work, leadership, management, soft skills etc. A 'Finishing School' concept will be implemented as part of each program of study. Multi skilling shall be emphasized. For sample curricula see Annexure I for course presently offered by Univotech, the Vocational University of Sri Lanka. The curricula emphasizes on a student obtaining knowledge and training in diverse areas related to the Construction sector including electrical systems, environmental considerations, project management, accounting systems and legal aspects. All these areas form an integral part of the curricula in addition to the core subjects related to the Construction sector. This enables the student to develop a holistic approach resulting in a high demand for such pass-outs from the industry.

4. Vocational University shall offer flexible modular courses with credit banking and transfer facility. Flexible timings including evening classes shall also be conducted.

5. There shall be a compulsory component in each program in the form of 1-2 semesters of practical training integrated within the study courses. During these 'practical semesters' the students would work in industry / organizations / administrations etc to obtain on-job training and become market-ready.

6. Research at the University will be in the form of industry driven projects done by faculty and students in collaboration with industry partners.

7. The University will also encourage 'Production oriented labs' setup in collaboration with industry partners. Practicals and training in such labs will be integrated as part of the program curriculum.

7.2.5 **Governance Model**

1. **Public - Private Partnership** Private Participation is critical to the success of a Vocational University. A Government –Academia –Industry partnership model may be adopted in which land shall be provided by Government, Private Educational Institution shall create

infrastructure, manages academic and administrative areas, governance & all other activities concerned with the University and Industry shall collaborate setting up of labs, equipment, trainers, internships, placements for students, training of students & faculty, participation in governance, quality checks, curricula design etc. Collaboration with government bodies and banks shall be established for fund support.

2. **Authorities of the University** Authorities of the University shall have active Industry participation. The administrators of the University must have industrial experience. Industry participation shall be sought on the Board of Management. Board of Management will have members from Government, Industry and Educational Institution. Other authorities of the University shall be:-

(a) Academic Council (Department wise)

(b) Board of Studies (Department wise)

(c) Central Administration Office

(d) Academic Departments

(e) Faculty Training Department

(f) Research Center

(g) Other Departments

4. **Academic Departments** The Vocational University shall have various Academic Departments for disciplines / programs that it wishes to undertake. The University will however, always focus on offering academic programs related to high growth sectors identified from time to time by M-VEC and other community stakeholders. The Labour Management Information System under the M-VEC will act as an input to introduce academic programs at the University.

5. **Other Departments** The Vocational University shall have the following other Departments initially:-

(a) Department of Faculty Training & Academic Development – The department will design, develop and roll out teacher training programs for purposes of teacher development. These could be arranged as workshops, refresher programs or training programs and will focus on the vocational teaching-learning pedagogy. Teachers/faculty will be encouraged to attend these at periodic intervals to upgrade skills. Skill training through industry on live environments will be emphasized. Assessor training will also be conducted by this department on a continuous basis. The Academic Development wing of this department will

focus on curricula and syllabus design, content development, electronic and media development, designing of policies for standardization and quality assurance for academic courses/programs, credit system designing and implementation. The Academic Development wing will also lay down policies related to implementation of NVEQF as applicable to the University.

(b) Department of Life Long Learning – This department will create a system and lay down policies for providing life-long learning opportunities for students. The department will coordinate with the Industry liasioning and RPL departments of the Commission and the University to understand requirements of students who wish to pursue life-long learning opportunities. The department will also provide input to the University in developing modular courses which can be beneficial to students for continuous skill enhancement.

(c) Department of Open & Distance Learning – The department will mainly focus on offering open and distance learning system as a supplementary delivery model for the benefit of learners located in distant areas and who cannot reach the University. The department will provide all inputs and create policies, procedures, courses/programs, standards and mechanisms for effective implementation of courses in the open and distance learning model.

(d) Department of Applied Research – The department will coordinate with the Industry Collaboration Department of the University and the Commission (M-VEC) to understand research needs of the local industry. The department will try to take up projects which are outsourced by the industry. The department will also carry out research projects for benefit of the local Community. The University will allocate a separate fund through industry and community collaboration for research activities which will contribute to the socio-economic growth of the region. The research projects will be carried out with the help of faculty, students and local agencies.

(e) Department of Industry Collaboration – The department will liaison and partner with various industry and community representatives for purposes of industry and community engagement in all aspects of the University. The department will also assist the University in establishing collaboration with local industry and community or purposes of carrying out research projects, placements, apprenticeship, in-service training and other such activities. The department will also work with the industry and community to study and assess local needs, self-employment opportunities and employment potential. The department will also coordinate with the Industry Liasioning department of the M-VEC and other concerned State/Central Government bodies/agencies and NGOs etc for carrying out its activities. The department will conduct regular meetings with the industry and community to carry out its activities effectively.

(f) Department of Entrepreneurship Development – The department will focus on understanding local industry and community needs from the stand point of creating self-employment or entrepreneurship opportunities for the University Students. The department

will also create and foster an environment including 'incubation labs' to provide impetus to budding entrepreneurs.

(g) Department of Computer & Network Management – The department will establish, develop and maintain all IT and Computer, Networking components and systems for the University. It will also lay down IT policies of the University.

(h) Department of Student Care Services – The department will lay down policies, norms and practices for effective student support management. The department will develop innovative student care services for facilitating all aspects of the students academic tenure at the University.

(i) Department of Affiliation – The department will primarily focus on granting affiliations to colleges who apply to the University for this purpose. It will also lay down norms, policies and practices for the purposes of affiliation and governance and quality assurance of the affiliated colleges. The department will follow the general guidelines and policies laid down by the M-VEC for this purpose.

(j) Department of Recognition for Prior Learning – The department will enable the recognition of prior learning which will be of great benefit to students from the informal sector. The department will also do the necessary mapping to understand skill or competency levels of applicants and advise them accordingly for further education at the University. The department will develop policies and practices for facilitating students with RPL to pursue further education or courses at the University. The department will liaison with the Department of RPL at M-VEC and follow the overall guidelines and policies laid down by the M-VEC in this regard. The department will also lay down policies for implementation of NVEQF and mapping of students completing NVEQF levels who wish to continue other courses at the University.

7.2.6 **Infrastructure Requirement**

Land, construction and infrastructure requirement must be in line with the teaching leaning pedagogy of a Vocational University. In order to provide hands-on training to the students, the infrastructure requirement may focus on the need for creation of the following: -

(a) Production Oriented Labs

(b) Training centers / workshops / Laboratories

(c) Innovation/testing labs & Incubation Centers

(d) Finishing School

(e) Placement Cell

(f) Research Cell

7.2.7 **Characteristics of the University**

1. Vocational University shall offer recognition, equivalence and credit for prior learning/training.

2. Special credit banking and modular course structure will be offered for the informal and non formal sector with limited formal education. University will have facility of external mode, part-time students and open system of education.

3. University will collaborate with local colleges, training providers, industry, agriculture farms etc for providing hands-on training to students where such facilities are suitably available.

4. University will be involved in continuous interaction with industry, NGO's and other community stakeholders to understand requirements and opportunities of manpower.

5. University will be continuously engaged in applied research to understand changing trends and needs in various segments of the industry and labour market.

6. University will be involved in assessing and affiliating suitable Community Colleges, Polytechnics and other vocational institutions who may wish to offer diplomas, degrees of the University. The University will also engage in accrediting courses / programs of such affiliated institutions in collaboration with M-VEC.

7. The University will be involved in 'Assessor Training'. This training will create assessors who can carry out competency based assessments of students who wish to receive the M-VEC certificate.

8. The University will be engaged in continuous 'Teacher Training Programs' and workshops to train faculty and trainers on the vocational teaching learning pedagogy as well as in competency based course curricula development and assessments.

9. The University shall collaborate and partner with agencies, establishments, organizations, industries, government bodies, VTPs, institutions and universities of repute from within the State, outside the State and foreign countries for purposes of exchange of information, faculty and other resources, for giving and receiving grants, equipment, machinery computers and other resources and for purposes of offering joint courses/programs.

7.2.8 **Academic Degrees**

1. Vocational University will offer all kinds of Bachelor, Masters, Doctoral degrees and Diploma programs in vocational higher education sector. The University shall also offer a separate Bachelors degree for Vocational Education teachers.

2. New degrees of Bachelors, Masters and Doctoral Programs in Vocational Studies should be created by UGC as per the provisions of Sec 22 (3) of UGC Act, 1956 for students pursuing vocational higher education in Vocational Universities.

3. University shall offer diverse vocational specializations.

4. Separate degree called Bachelors in Vocational Education or B.Ed with specialization in Vocational Education may be created for vocational education teachers & trainers.

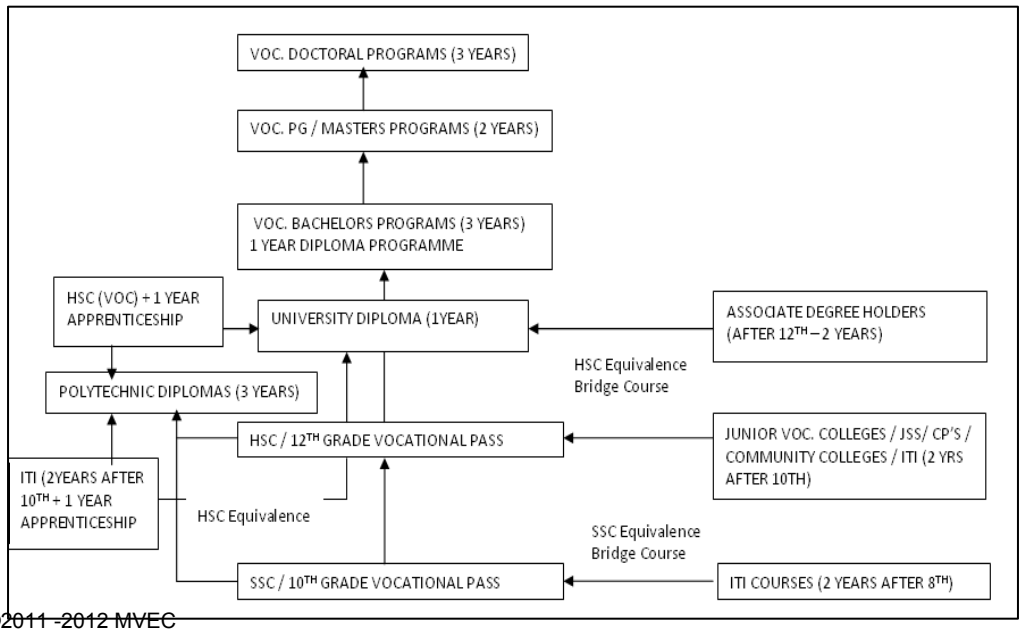
7.2.9 **Affiliation**

Vocational Education Junior Colleges offering HSC (Vocational), Agencies / Community Colleges offering Associate Degrees or Diplomas may be given affiliation to the Vocational University to provide entry into the Bachelors Programs.

Existing ITI's and ITC's, Polytechnics or other vocational training providers may offer University recognized courses or diplomas to provide opportunities to local students. The Department of Affiliations will be responsible for processing and granting affiliations to colleges applying for the same to the University.

7.2.10 **Multi Entry - Exit Option**

The Vocational University shall offer a clear mobility pathway to vocational students with multi entry exit option at each level. The proposed mobility path from higher secondary to tertiary education is illustrated below-:



7.2.11 **Credit System**

1. The University shall have a well defined Credit Banking and Transfer System on the broad guidelines laid down by the M-VEC. The credit system will be student centric and will enable a closer link between educational programmes and labour market requirements. The Credit System will reflect the nature of competency based courses.
2. The Credit System will provide more flexibility to the students by allowing multi-entry and multi-exit at each level of learning.

3. The Credit System will also enable students to pursue opportunity for life-long learning and skill development by making programmes more flexible and facilitating the recognition of prior achievement.

4. The modular courses will be of varying duration and will enable the student to accumulate and transfer the credits over a period of time. This would be especially useful for the non-formal sector.

7.2.12 **Student Profile**

1. **Eligibility Criteria** The eligibility criteria for admission of students shall be as under:-

   (a) 10+2 in vocational stream (HSC(Vocational))

   (b) 10+2 in conventional stream in combination with relevant bridge course.

   (c) Associate degree holders are eligible for 1 year diploma programs

   (d) ITI students with 2 year apprenticeship shall be eligible for diploma programs

   (e) Special regulations shall be designed for vocationally qualified without formal entrance level qualification

2. The University will promote scholarships and fee concessions apart from an Affirmative Action Plan for the needy.

7.2.13 **Financial Assistance to students**

The University will promote scholarships and fee concessions apart from an Affirmative Action Plan for the needy.

Provision of bank loans for economically backward and those wanting to start their own business shall be provided.
'Earn While You Learn 'policy will be promoted through:-

- Stipend
- Apprenticeship Model
- Internships
- Production oriented schemes (Industry sponsored)

7.2.14 **Industry participation**

1. Industry participation is critical to a Vocational University. Industry representation shall be sought on the Board of Management.

2. Industry representatives will also be involved in governance and curriculum design. The learning outcome for each academic programme shall be in line with the Industry requirement. The University will collaborate with the industry to understand labour market trends and needs on a continuous basis.

3. **Adjunct Faculty Service** The industry shall have the corporate responsibility to provide industrial trainers for training of the students of the University. Incentives may be given to the employees for undertaking this responsibility.

4. **Production Oriented Laboratories** Production Oriented Research and Innovation Labs will be setup in collaboration with Industry to promote regional and economic growth. The industries will provide the latest state of art machinery and equipment for carrying out hands on training of the students. These laboratories shall also pioneer new products and carry out research specific to the requirement of the Industry. The University shall employ the industrial trainers for imparting training on the equipment specific to that industry.

5. **In-Service Training** In-service training shall be organized and industry encouraged to send employees for regular skill development and up-gradation.

6. **On the job training** On the job training in Industries shall form a compulsory component of the curricula. The industry shall undertake on the job training atleast two times in a week.

7. **Apprenticeship Model** Apprenticeship/Stipend/Scholarship/ Fellowship Models will be devised in consultation with the Industry partners.

7.2.14 **Teachers Education and Training**

1**. Eligibility** Industrial experience will be a mandatory requirement for Vocational teachers. A separate degree called Bachelor in Vocational Education (B.V.Ed) or B.Ed with specialization in vocational education is proposed to be introduced.

2. **Department for Teachers Training and Development** Teachers training will be given special emphasis by the University. The Vocational University will setup a separate

Department for Teachers Training and Development in order to build teaching resources and research component. Continuous teacher training programs shall be emphasized by the University Management. The training will emphasize the vocational teaching – learning pedagogy.

3. **Department of In-service Training** The University will set up a department of in-service training. The industries will be encouraged to send their employees for training to this department. This will also ensure additional income for vocational teachers.

4. Continuous teacher training programs shall be emphasized by the University Management. Only qualified teachers with desired skills will be recruited.

7.2.15 **Other Features**

1. **Center for Entrepreneurship Development** Center for Entrepreneurship Development shall be established to create a platform for emerging entrepreneurs.

2. **Career Guidance and Counseling Cell** Career Guidance and Counseling Cell shall be established to enable students to plan their movement towards their desired vocation.

3. **Business Incubation Centre** shall be established to aid entrepreneurship among students. The Incubation Centre shall offer on-site business facilities such as office space, computers, printers, communication systems, equipment and Internet connectivity etc.

A Vocational University will thus not only benefit the local industry, society, community and the State of Maharashtra but also our country as a whole. The Vocational University will popularize the Vocational Education and Training (VET) sector as an alternate career option by providing a clear vertical mobility pathway to students.

7.2.16 **Legislative Framework**

The Committee has prepared the draft of the Maharashtra Vocational Universities Act which comprises above points for Vocational University. The Committee believes that a separate Umbrella or enabling Act for establishment of a Vocational University is required. The Act will enable the State to establish one or more Vocational Universities in a PPP Model. The PPP model itself has been thought appropriate by the Committee for establishing a Vocational University as it will bring all enable the engagement, collaboration and participation of all three stakeholders who are critical for the success of the University and the VET sector namely, the Government, the Academia and the Industry. As the parameters of a Vocational University both from standpoint of establishment as well as its characteristics, are reasonably unique and different than those of a Conventional Academic University, the Committee felt a separate Act which contains this unique flavor be created for purposes of establishment of a Vocational University in the State. The draft of the Maharashtra Vocational Universities Act has been submitted separately for further consideration and action.

CHAPTER VIII

STRATEGIES FOR IMPLEMENTATION

8.1 PRESENT SCENARIO

The integration of Vocational Education and Vocational Training is critical to the success of the VET model. The present Vocational Education System is fragmented both at National and State level. Presently, Vocational education falls under the purview of MHRD while Vocational / Industrial training is under Ministry of Labour. This has lead to a duplication of effort with a large number of agencies offering similar types of courses with no standardization causing confusion amongst the student community as well as the industry. The industry also finds it difficult to recruit persons as the competency of the individual cannot be judged by the certificate he/she carries.

There is no uniform policy governing Vocational Education and Training system in the State of Maharashtra. The quality of vocational education imparted by a number of VTPs is also questionable as no quality standards and measures are in place. The Govt. of Maharashtra also has several bodies offering varied vocational education and training courses of disparate duration without any uniformity or standards. The Maharashtra State Board for Vocational Education (MSBVE), the Maharashtra State Board for Technical Education (MSBTE looking after Polytechnics), the Department of Vocational Education (offering HSC-Voc), the Department of Vocational Training (looking after ITIs, ITCs) and other Vocational Providers are all offering vocational courses/industrial training courses/diploma programs at various levels. However there is no regulation or single statutory body to control, create policies or guidelines for standardization.

8.2 VOCATIONAL EDUCATION AND TRAINING ACT

The Committee discussed the various implementation strategies that must be designed, developed and implemented to meet the objectives of achieving a single comprehensive and integrates Vocational Education and Training system from secondary school level to tertiary level in the State of Maharashtra.

The Committee feels that a comprehensive Vocational Education and Training Act must be formulated for the State of Maharashtra. Draft of the Maharashtra Vocational Education and Training Act has been prepared and submitted separately for further consideration and action.

The scope of Vocational Education and Training Act shall be:-

1. To achieve integration of Vocational Education, Training and Skill Development and create a Unified System.

2. To lay down policy and norms for development and coordination of Vocational Education, Training and Skill development (VETSD) at all levels.

3. To evolve a mechanism to regulate and maintain uniform standard of quality, research and development, examinations, certification, affiliations, registration and accreditation across all levels of VETSD.

4. To provide for establishment of the Maharashtra Vocational Education and Training Commission (M-VEC).

5. To provide for establishment of the Maharashtra Vocational University.

6. To provide for establishment of the Maharashtra Vocational Education and Training Quality Council.

8.3 MAHARASHTRA VOCATIONAL EDUCATION & TRAINING COMMISSION (M-VEC)

After due deliberation and discussion, the Committee has reached the conclusion that a single statutory body namely, Maharashtra Vocational Education & Training Commission (M-VEC) herein referred to as the "Commission", must be established to plan, promote, regulate, develop, co-ordinate and standardize vocational education, training and skill development at all levels in the in the State of Maharashtra. All vocational education, training and skill development courses/programs shall come under the purview of the Commission (M-VEC). The courses/programs offered by MSBVE and MSBTE shall also come under M-VEC. The Commission shall collaborate with the industry and community for the understanding labour market needs and trends thus creating a robust Labour Information System (LIS).

8.3.1 Objectives of Maharashtra Vocational Education & Training Commission (M-VEC)

The primary objectives of the Commission shall be:–

a) Planning, co-ordination and development of vocational education, training and skill development (hereafter referred to as VETSD) at all levels in line with human resource development & industry needs of the State.

b) To achieve integration of vocational education, training and skill development (VETSD) in the State of Maharashtra;

c) To formulate policies and norms for development and coordination of VETSD at all levels;

d) To evolve a mechanism to regulate and maintain uniform standards of quality, research and development, examinations, awards and distinctions, affiliations, registration, recognition and accreditation across all levels of VETSD;

e) To develop practices for providing high quality VETSD by laying down guidelines for development of curricula, content and deployment of courses and programs in this sector;

f) To maintain academic, training & skill development standards in VTPs;

8.3.2 **Structure of the Commission**

The Commission shall consist of: -

a) Chairman; *ex officio*; shall be the Minister for Higher & Technical Education

b) Vice Chairman; *ex officio;* shall be the State Minister for Higher & Technical Education

c) Director General – Member Secretary, to be appointed by the State Government, and

d) Thirteen other members, to be appointed by the State Government.

The Commission shall constitute an Executive Committee consisting of the following members:-

a) the Chairman of the Commission;

b) the Director General (Member Secretary) of the Commission;

c) Principal Secretary, Higher & Technical Education Department, GoM

d) Director, MSBVTE

e) Director, School Vocational Education (Secondary & Higher Secondary), M-VEC

f) Director, Higher Vocational Education, M-VEC

g) Director, Industrial Training, M-VEC

h) Chairman, M-VETQC (Quality Council)

i) Chairman, M-VETRAB (Accreditation Board)

j) One member nominated by the Chairman of the Commission from the vocational education, training and skill development sector

The Commission shall constitute the following Departments in order to carry out the activities of the Commission and meet its aims and objectives:-

a) Department of School Vocational Education (Secondary & Higher Secondary) :
The Department, in addition to observing the general guidelines and policies of the Commission shall also be responsible for:

i) Co-ordination of vocational education & training courses/programs at School level, namely, Secondary or Higher Secondary level.

ii) Formulating policies, standards, norms, practices and guidelines for effective implementation of vocational education, training and skill development courses/programs at school level in the State.

iii) To award certificates upon successful completion to students pursuing courses offered and recognized by the Commission at the School level.

iv) To coordinate with the Department of Recognition of Prior Learning to assess the prior learning or pre-acquired skills of persons and facilitate further education for such persons based on the recommendation of this Department.

b) Department of Higher Vocational Education (at 10+2 level including Polytechnics, Community Colleges) : The Department, in addition to observing the general guidelines and policies of the Commission shall also be responsible for:-

i) coordination of vocational education & training courses/programs at Higher Education (10+2) level.

ii) formulating policies, standards, norms, practices and guidelines for effective implementation of vocational education, training and skill development courses/programs at higher education level in the State.

iii) awarding certificates or Diplomas upon successful completion to students pursuing courses offered and recognized by the Commission at the higher Education level.

iv) coordinating with the Department of Recognition of Prior Learning to assess the prior learning or pre-acquired skills of persons and facilitate further education for such persons based on the recommendation of this Department.

c) Department of Industrial Training (liaison with DGET, ITIs, ITCs and MES scheme) : The Department, in addition to observing the general guidelines and policies of the Commission shall also be responsible for:

i) coordination of industrial training courses/programs through it is and ITCs.

ii) formulating policies, standards, norms, practices and guidelines for effective implementation of industrial training courses/programs through ITIs and ITCs in the State.

iii) coordination with DGET and Ministry of Labour and Employment for effectively implementing courses/programs through ITIs and ITCs.

iv) To award dual certificates upon successful completion to students pursuing courses offered by DGET and recognized by the Commission.

v) To coordinate with the Department of Recognition of Prior Learning to assess the prior learning or pre-acquired skills of persons and facilitate further education for such persons based on the recommendation of this Department.

d) Department of Industry Liasioning (Industry collaboration, employment and self-employment): The Department, in addition to observing the general guidelines and policies of the Commission shall also be responsible for:

i) Coordination and partnering with industry, CII, MCCIA, NGOs, Community stakeholders and other industry bodies /representatives to understand labour market needs and evolve mechanisms, schemes, practices, policies in order to create opportunities for students of VETSD sector.

ii) Carrying out research in labour market trends, requirements and evolving a Labour Information System (LIS).

iii) Coordinate and collaborate with concerned bodies/agencies, industry, market and the community for placement, apprenticeship and development of students pursuing vocational education, training and skill development courses/programs in the State.

iv) Evolving a system and procedure to promote entrepreneurship/self-employment amongst young students from the VETSD sector.

v) Evolving and developing various schemes, proposals and practices for promoting industry and community partnership for the larger benefit of students of the VETSD sector.

vi) Monitoring the activities related to employment, self-employment, industry partnership, NGO collaboration, Community collaboration etc in the State for development and growth of students.

v) To coordinate with the Department of Recognition of Prior Learning to assess the prior learning or pre-acquired skills of persons from the industry or Community and facilitate further education for such persons based on the recommendation of this Department.

The Department of Industry Liaisoning shall have the following Sub-Divisions:-

i) Division of industry partnership

ii) Labour management and research cell

iii) Placement cell (for employment)

iv) Entrepreneurship development cell for promotion of self employment

e) Department of Teacher Training and Academic Development: The Department, in addition to observing the general guidelines and policies of the Commission shall also be responsible for:

i) Coordination of teacher training, orientation, refresher and development programs for faculty/teachers involved in vocational education, training and skill development in the State.

ii) For formulating policies, standards, norms, practices, procedures and guidelines for effective implementation of teacher training and development programs in the State.

iii) Formulating policies and norms related to teachers appraisal vis-à-vis requirement for undergoing teacher training/development programs.

iv) Overall coordination and development of academic and training programs, curricula, content and delivery models.

v) Overall coordination and development of books, material, training manuals (print, electronic, online), CDs, DVDs, e-content, web based content, TV/Satellite based content for courses/programs offered by the Commission for benefit of students, teachers, assessors etc or providing such assistance to VTPs.

vi) Formulating norms, standards, practices and guidelines for VETSD academic and training courses/programs, curricula, syllabus, content, quality of instruction and delivery models.

vii) Designing courses/programs, overall academic structure of courses/programs, examinations, evaluation methodologies, competency based assessments, criteria for standard of passing, credit system, credit banking, transfer policy, conditions for award of certificates /diplomas/degrees and any other academic matters related to the courses/programs offered and recognized by the Commission.

f) Department of Implementation of NVEQF: The Department, in addition to observing the general guidelines and policies of the Commission shall also be responsible for:-

i) Overall coordination and implementation of National Vocational Education Qualification Framework (NVEQF) as outlined by the Central Government.

ii) Overall coordination with other departments of the Commission and other State/Central Government bodies for mapping and implementing NVEQF in the State at various levels.

iii) Mapping of NVEQF within the existing VET system and laying down norms, policies and practices for students to enroll and pursue NVEQF levels.

iv) Formulating norms, policies, standards for conducting examinations for students enrolled in NVEQF levels, competency based assessments of such students and award of relevant certificate to them.

v) Coordinating with the Department of Recognition of Prior Learning for purposes of mapping to the appropriate NVEQF level.

g) Department for Recognition of Prior Learning: The Department, in addition to observing the general guidelines and policies of the Commission shall also be responsible for:-

i) Formulating policies, standards, norms, practices, procedures and guidelines for Recognition of Prior Learning in the State.

ii) Overall coordination with Recognition of Prior Leaning Departments (RPL) departments of VTPs across the State for implementing RPL at various levels.

iii) Award of 'certificate of mapping' based on prior achievements or pre-acquired skills obtained by the applicant to enable the applicant to seek exemption or transfer courses across various VTPs registered under the M-VEC with the objective of continuing further vocational education, training or skill development.

iv) Facilitate measurement of credits earned by virtue of completion of learning or training for courses not registered with the Commission.

v) To coordinate with other Departments of the Commission, the Board, other State and Central level bodies/agencies for the purposes of assessment of prior learning or pre-acquired skills and for mapping as well as issuing certificate of mapping.

vi) To coordinate with various assessors or assessing agencies to assess prior learning or pre-acquired skills of persons for the purposes of issuing a certificate of mapping.

8.4 MAHARASHTRA VOCATIONAL EDUCATION & TRAINING REGISTRATION AND ACCREDITATION BOARD (M-VETRAB)

The Committee has recommended that as part of the Maharashtra Vocational Education and Training Act, a separate Board be established namely, the Maharashtra Vocational Education & Training Registration and Accreditation Board (M-VETRAB). This board shall be responsible for framing rules, regulations, policies, norms, procedures and conditions for Registration, Recognition and Accreditation of VTPs and ensuring that all registered VTPs follow the general policies and guidelines of the Commission. The powers, functions and structure of the Board have been elaborated in the Maharashtra Vocational Education and Training Act enclosed as Annexure.

8.5 MAHARASHTRA VOCATIONAL EDUCATION AND TRAINING QUALITY ASSESSMENT COUNCIL (M-VETQC)

The Maharashtra Vocational Education and Training Quality Assessment Council (M-VETQC) herein referred to as " Council " shall be an apex body for quality assessment of institutes, organizations, centers, agencies and establishments the Vocational University offering courses/programs at all levels, in the Vocational Education, Training and Skill Development sector and for coordinating with the Commission to the extent of meeting the Commission's objectives related to maintenance of Quality Standards by the VTPs and for participating in the Accreditation process of VTPs.

8.5.1 Objectives of the Council

a) To make quality the defining element of vocational education in the State through a combination of self and external quality evaluation, promotion and sustenance initiatives;

b) To stimulate the academic environment for promotion of quality of teaching- learning and research in vocational education institutions;

c) To encourage self-evaluation, accountability, autonomy and innovations in vocational education;

d) To co-ordinate and exercise general control over the quality assurance in vocational education.

8.5.2 **Structure**

The proposed structure of the Council shall be:-

a) Chairman - to be nominated by the State Government

b) Vice- Chairman - to be nominated by the State Government

c) Governing Council comprising of 7 – 11 members representing Industry, CII, NAAC, Govt Officials, SSC Nominee, Academicians of repute

d) Director – School Vocational Education (Secondary and Higher Secondary)

e) Director – Higher Vocational Education (at 10+2 level)

f) Director – Industrial Training (ITI,ITCs etc)

8.5.3 **Salient Features**

1. The council shall be an independent Body for quality control for all levels of VET.

2. Quality assessment mandatory for all VTPs within a specified period of 3 years)

3. Quality Council will assess and grade the institution on quality.

4. M-VEC shall make assessment through Quality Council mandatory at all levels of Vocational Education and Training.

5. Quality council shall also have the power not recommend an institution. Such institutes will be put on probation by the M-VEC till it fulfills all norms and is re-assessed.

6. An institution can be de-recognized in case it does not meet the quality parameters set by the Quality Council.

The legislative framework of the Quality Council is given in the Draft of the Vocational Education and Training Act for State of Maharashtra which has been prepared and submitted separately for further consideration and action.

The M-VEC or Commission shall evolve as a single statutory body to look at all aspects of vocational education, training and skill development in the State. The Commission will also have under its purview all VTPs, Institutions, Establishments and Agencies including but not limited to the Polytechnics, Vocational Junior Colleges, Technical Schools, Community

Colleges, ITIs/ITCs and their courses/programs, as also the Vocational University which may get established in the future. The courses/programs offered in the vocational education, training and skill development sector shall have standardized curricula based on modular credit system, in line with NVEQF and shall be competency based. The Registration and Accreditation Board will enable a database/registry to be available with the State Government of all VTPs in the State for access to all stakeholders desirous of working in the VET sector including students, parents, NGOs, industry and other members of the community. The Recognition and Accreditation processes will enable all VTPs to come on a common platform of standardized curricula and content for courses/programs, standardized evaluation/assessments, standardized training and vocational teaching-learning pedagogy and standardized certification or awards. Most importantly the Commission will ensure quality of vocational education and training through the Quality Council thus providing knowledgeable choices to students. The Commission shall also enable better industry and community engagement through the partnership schemes and PPP models. The focus on carrying a continuous labour research and labour data collection activity will enable the development of a Labour Information System which will be of great benefit to policy makers and academia especially from the standpoint of understanding and meeting latest industry needs. The outcome of this framework will be a highly skilled youth who will be readily employable and trained as per industry needs contributing to the overall productivity and growth of the industry and community as a whole.

CHAPTER IX

ROLE OF INDUSTRY AND COMMUNITY

9.1 ROLE OF INDUSTRY

Industry plays an important role in the Vocational Education, Training and Skill Development sector. In the past, the Industry has not played an active role in the development of this sector. High cost of training, inability to afford downtime and increasing overheads and costs associated with poor efficiency are all factors which have driven the industry to demand skilled workforce. As compared to countries such as Korea where over 90% of the workforce is vocationally qualified, India has only 5-7% of its workforce vocationally trained or qualified. Most skills obtained by workers are through an informal training system such as family inheritance or "guru-shishya parampara". As a result, it is very difficult to measure the competencies of skills or create any standards of competency levels. Inability to measure competencies or establish any standards for occupation to skill mapping makes it difficult for industry to associate optimal wages for skills of workers. One of the major reasons for limited success and popularity of the VET sector has been the inability of the industry to emphasize formal vocation qualifications or training for its workforce. As such majority of the industry workforce continues to be poorly qualified and do not go for further skill enhancement. There is no focus from the industry for in-service training and as such skill upgradation is not taking place. These aspects need to be seriously addressed by the industry as productivity is directly linked to skilled manpower.

The Committee conducted meetings and presentations with important industry representatives including CII, FICCI and MCCIA. The feedback from Industry was sought on various aspects of the VET sector, issues, challenges and proposed recommendations of the Committee. The industry concurrence was sought on the recommendations related to the Vocational University and engagement of industry in this regard. Sample of industry feedback received by the Committee has been attached as Annexure II.

Some of the major concerns of the industry related to the VET sector are:

1. Poor quality of training
2. Curricula of training not aligned to industry needs, lack of input of industry in academics
3. Lack of general academic skills such as numeracy, problem solving, presentation skills, entrepreneurship etc.
4. Lack of global awareness and understanding of specific industry needs
5. Lack of standardization in certification or content
6. Inability to judge competency or skill level
7. Lack of incentives from Government for industry participation

8. Lack of engagement from other stakeholders of the VET sector such as community and Government.

In spite of the above issues there is no denial that industry plays a vital role in the overall development and growth of the VET sector. As such industry needs to continuously engage and participate in all aspects of vocational education, training and skill development especially from an implementation perspective. No initiatives taken up by the Government bodies will be successful unless there is a complete involvement of the industry at every stage - from designing curricula, to contributing by way of equipment as well as student and teacher training. The alliance of "Government-Industry-Community-Academia-Students" needs to be developed and nurtured. Each stakeholder of this alliance plays an important role in overall development and success of the VET sector. The policies and initiatives should take into account the local needs of industry and community. The continuous interaction with industry and research into the labour market needs will enable development of courses and content which are in line with latest industry needs. Localization and Contextualization should be emphasized while designing policies related to the VET sector. In fact the courses to be offered can be significantly influenced by the local needs and will vary from one region to another. The Vocational University can also evolve as "specialized centers of learning and training" where a University will partner with the local industry and focus on the community needs to develop courses and programs of vocational education, training or skill development. This localization will contribute to the socio-economic growth and development of the community and the region.

9.1.1 **Industry Participation in NVEQF**

The National Policy on Skill Development-2009 of Government of India identifies National Vocational Education Qualifications Framework (NVEQF) as the main instrument for linking various education and training pathways. The Ministry of Human Resource Development (MHRD) is in the process of establishing the NVEQF. The NVEQF proposes to provide a common reference framework for linking various vocational qualifications and setting common principles and guidelines for a nationally recognized qualification system and standards. The Government has set up an inter-ministerial group which would also include representatives of State Governments, including the Minister for Education, Maharashtra, to develop guidelines for such a National Framework. The NVEQF will create flexible learning pathways, which will permit individuals to accumulate their knowledge and skills and convert them through testing and certification into higher diplomas and degrees. NVEQF will support lifelong learning, continuous upgradation of skills and knowledge. The basis for NVEQF will be inputs from the Industry in the form of the NOS. Thus, industry has an important role to play in the future of the VET sector. For purposes of implementation the National Skill Development Corporation of the Central Government has formed Sector Skill Councils (SSCs) in all States. The SSCs are responsible for coordinating with various industry sectors to gather skill requirements, competency needs and occupation standards. They will also provide input to finalize the NOS for each occupation within each industry sector.

The critical factors for the success of NVEQF will however remain the input from industry, acceptance of the industry for vocationally qualified manpower, participation and engagement of industry for implementation of NVEQF, curricula design for NVEQF based courses, designing competency based assessments and above all teacher training to deliver a competency based NVEQF course.

The Committee organized a 2-Day workshop on training vocational and ITI faculty on curricula design for competency based NVEQF courses. A sample curriculum of Retail sector NVEQF based course is available in the Annexure III. The workshop was well received by more than 30 faculty members. The challenge however was to develop a mindset for designing and administering a competency based course to students in the new model of NVEQF. The Committee, after receiving feedback from the faculty, concluded that substantial training would be required for faculty in the VET sector to design and deliver competency based courses in line with NVEQF. The State and Central Government will have to play an active role in arranging such training programs prior to rolling out the NVEQF model.

The Committee has recommended that the industry participation should be encouraged at all levels such as:

1. Curricula design and specifying needs for various job roles
2. Hands-on and on-job training for students
3. In-service training
4. Contribution by way of equipment, production oriented labs, research labs etc.
5. Internships, apprenticeship and placements for students
6. Participation in teacher training and skill upgradation
7. Continuous participation and contribution in the implementation of skill based training and vocation education courses to students.
8. Creation of Industry Management Committees for all VTPs including Vocational Junior Colleges and the Vocational University.
9. Participation in the PPP model for establishment of a Vocational University
10. Active participation in all aspects of the VTPs and the Vocational University including governance, curricula, labs, teacher selection and outsourcing of research projects to the University.
11. Participation in defining skills and competencies required for each occupation within their respective industry/sector. This input will be useful for establishing the National Occupation Standards (NOS) and National Vocational Education Qualification Framework (NVEQF) levels.
12. Participation in labour market research and needs analysis thus contributing to the Labour Information System to be maintained by the M-VEC.
13. Emphasizing the need for formal vocational qualification / certification as part of the recruitment rules or at the time of appraisal.

9.2 COMMUNITY PARTICIPATION IN THE STATE GOVERNMENT INITIATIVES FOR THE VET SECTOR

The Community plays an important and integral role in the overall development and growth of the vocational education, training and skill development. In fact the success of the initiatives undertaken by any local government body related to the VET sector will largely depend on the participation of the community. Without localization and contextualization of the vocational education and training courses/programs the growth of this sector will be limited. Having regard to this important role played by the Community, the Committee undertook interactions with important stakeholders of the local Community, students and faculty representing ITIs, ITCs and other Vocational Institutions/Colleges. The Committee undertook a survey of approximately 2300 students and about 350 faculty from varied regions of Maharashtra – rural, semi-urban and urban regions. The results of the survey were extremely motivating. Both faculty and students wish to increase participation with the local Community and feel that this is an important criteria for overall success of the VET sector. The informal sector form a large part of the workforce and the Community can play an important role in training and skilling of this large section of the Community. The creation of local opportunities for population will further inhibit migration to cities. Thus, the active involvement of local Community in the implementation of vocational education & training will eventually lead to socio-economic growth of the region.

The Committee therefore recommends that the local Community stakeholders such as NGOs, local government bodies, social workers and other locally operating agencies or establishments should be actively involved in defining the Community needs and designing vocational courses/programmes. The Community should also be involved in other aspects such as :

1. Motivating local population for undergoing skill training
2. Arranging special skilling or training programs for informal workforce through local trainers
3. Arranging local trainers such as craftsmen, artisans and other highly skilled persons who can train students and workforce in the local community
4. Creating Community Skill Development centers under the Maharashtra Vocational Education and Training Commission (M-VEC), where local population can be skilled/trained and common infrastructure/equipment can be contributed by the local community and industry
5. Arranging workshops, seminars and counseling sessions from local experts for benefit of students and workers
6. Providing input to the M-VEC about labour market needs, local needs of skilled manpower so as to contribute to the Labour Information System.

CHAPTER X

CREDIT BANKING & TRANSFER SYSTEM

10.1 CONCEPT OF CREDIT POINT SYSTEM

1. Credit Point System is a method to measure the workload of a student's learning effort. Each course of the curriculum is credit rated. The study hours or workload of the student includes both the time spent in class, in industry or labs, as also the time spent in preparation. The number of credits ascribed to each component is based on its weight, in terms of the workload the student needs to complete in order to achieve the learning outcomes. Study hours may comprise of the following-:

(a) Time spent directly with faculty and trainers

(b) Time Spent in the labs for hands-on training

(c) Time Spent in the industry for on-job training (internship, apprenticeship etc)

(d) Preparation and submission of assignments and exams

(f) Integrated learning

(g) Preparation of Projects/Research

(h) Other components of learning

2. The course description will basically comprise of two components-:

(a) 'Learning outcomes' which defines what students are expected to know, understand and be able to demonstrate after completion of the learning process. Each learning outcome will be expressed in terms of credits. The learning outcomes shall be defined in-line with the NVEQF and NOS.

(b) 'Workload' which defines the time & effort students will typically need to achieve the learning outcomes. The credits will be defined as a measure of the Workload.

3. The assessment system will reflect whether the student has successfully demonstrated the competency or skill acquired by completing the learning process and will be a direct reflection of his/her learning outcome. Competency based courses shall have "Competent" or "Not Yet Competent" result of an assessment system rather than "grades" of performance associated with a theoretical/conventional course.

10.1.1 **Objectives of Credit System**

The primary objective of credit system is to enable a student to transfer credits for vertical and lateral mobility across various sectors of learning through flexible learning pathways. It will encourage life-long or continuous learning in students. The credit system also allows a multi-entry, multi-exit environment and will create learning opportunities for the informal sector of our workforce enabling them to come into the mainstream of education.

10.2 **CONCEPT OF CREDIT TRANSFER**

Credit transfer is the process in which credits already obtained from one qualification is recognized completely or partially, towards obtaining a new qualification. Credit transfer allows students to transfer credits from one programme to another within the same institution or across institutions. This transfer can only take place if the degree-awarding institution recognizes the credits and the associated learning outcomes from other institutions. The Committee recommends that a Credit Banking and Transfer System be established across all VTPs including the Vocational University. In fact the Vocational University will not only promote such a system but will also have a Department of Recognition of Prior Learning which will recognize prior achievement and acquisition of skills and provide flexible learning pathways for students from the informal sector who wish to pursue courses at the Vocational University.

10.3 **RECOMMENDATIONS**

1. The vocational courses offered at SSC, HSC, certificate, diploma and degree level are recommended to be credit based and modular in nature thereby creating flexible learning pathways. The curricula and assessments systems need to re-designed in order to introduce credit based courses.

2. The students may be allowed to accumulate and transfer their credits across various VTPs registered and recognized by Maharashtra Vocational Education & Training Commission (M-VEC) the including the Vocational University as per the policies laid down by the M-VEC in this regard. The credits given by one institution /VTPs may be recognized for credit exemption by another institution/VTP. For example – If a student has done a course in Engineering Mechanics worth 4 credit points in a polytechnic institute his 4 credits may be recognized by all engineering colleges for credit transfer thereby enabling student to accumulate and transfer his credits for obtaining a degree.

3. For the informal sector, credit based modular courses of varying duration may be provided by Vocational University or any other Vocational Training Providers (VTPs) registered with the Maharashtra Vocational Education and Training Commission (M-VEC). These short duration courses will enable the workforce in the informal sector who are unable to pursue full time courses, to accumulate and transfer their credits for obtaining a

degree/diploma/certificate over a period of time. This will also encourage life-long learning and continuous skill upgradation.

4. The Department of Teacher Training and Academic Development of the M-VEC shall be made responsible for designing the overall credit system and credit transfer policy for vocational education, training and skill development courses at all levels. This will enable standardization of courses and enable students to transfer credits across various programmes or institutions/VTPs in the VET sector. The accredited VTPs including the Vocational University will be required to follow the broad guidelines laid down by the Commission for credit system but shall be free to evolve and implement the credit system with suitable changes in line with their own requirements.

5. The credit system policy designed by the Commission is recommended to be in line with the National Vocational Education Qualification framework (NVEQF) with the view to enable students to obtain credit exemption for the modules covered by them at SSC, HSC, Polytechnic, ITI, Diploma or certificate level within the State. The Department for implementation of NVEQF under the Maharashtra Education and Training Commission (M-VEC) may liaison with Sector Skill Councils and other Central agencies at the National level for the same.

6. The Department of Recognition of Prior Learning (RPL) under the Maharashtra Education and Training Commission (M-VEC) will define the Recognition of Prior Learning policy. The Commission shall Award 'certificate of mapping' based on prior achievements or pre-acquired skills obtained by the applicant to enable the applicant to seek exemption or transfer courses across various VTPs registered under the M-VEC with the objective of continuing further vocational education, training or skill development. The Department of RPL will facilitate measurement of credits earned by virtue of completion of learning or training for courses not registered with the Commission. The Department shall carry out assessment of prior learning through registered assessors of the Commission. For example:- A beautician with 10 years of experience can obtain a certificate of mapping by getting her skills assessed and get exemption for some of the foundation courses associated with a beautician program offered by any VTP or a Vocational University.

10.4 **BENEFITS OF CREDIT SYSTEM**

1. **Standardization:** Credit System shall enable standardization of student effort across various levels of learning. The credit points designated to a particular course will indicate the student effort required for the completion of that said course.

2. **Mobility:** Credit system will facilitate vertical and lateral mobility through credit transfer and accumulation. Mobility can be achieved between different educational sectors and contexts of learning i.e. formal, non formal and informal learning. Credit rating will make it

easier to compare qualifications and facilitate the recognition of achievements from one VTP to another.

3. **Encourages Life-long learning:** Credit accumulation and transfer will enable life-long learning. A number of adult students who cannot pursue full time degree programs can undertake stand alone educational programs and can accumulate and transfer those credits to obtain a formal certification/degree over a period of time. Credit system thus provides a clear learning pathway to part time students and encourages them to pursue life- long learning.

4. **Quality Assurance:** Credit system will ensure that quality standards are maintained and adhered by all institutions by clearly defining the learning outcomes and the student workload for each course in the curriculum.

5. **Framing of National Vocational Education Qualification Framework:** The National Vocational Education Qualifications Framework (NVEQF) sets out the levels against which a qualification can be recognized. All accredited qualifications are awarded an NVEQF level. If a qualification shares the same level as another qualification, they are broadly similar in terms of the workload a student is required to complete. However, qualifications at the same level can still be very different in terms of content and duration. Therefore, to formulate the National Vocational Education Qualification framework it is important to frame the credit system in which each level of qualification within the NVEQF is assigned its credit worth.

6**. Non formal and informal sector:** Credit system will enable institutions of higher education to recognize and grant credits for learning outcomes acquired outside the formal learning context through work experience, provided that these learning outcomes satisfy the requirements of their qualifications or components. The Recognition of Prior Learning scheme will allow the informal sector to come into the mainstream by assessing and mapping their prior learning or pre-acquired skills and giving exemptions in credits for courses thus enabling them to pursue further education and training.

7. **Flexible learning pathways:** The credit system shall provide flexible learning pathways to students by providing them multi-entry exit option, the ability to accumulate and transfer credits and lateral and vertical mobility across VTPs.

CHAPTER XI

FEEDBACK FROM FACULTY AND STUDENTS

11.1 SAMPLE DATA

The Committee thought it fit to take feedback from various sectors and stakeholders on all aspects of the Committees recommendations. The Committee conducted a survey of the Industry, Vocational students and faculty teaching in ITIs, ITCs and Vocational Junior Colleges. A sample of the industry feedback has been attached as an Annexure III.

For the student and faculty feedback, the sample data has been collected representing varied regions of Maharashtra – rural, semi-urban and urban regions, ranging from Karad, Latur, Wagholi, Prabhani, Baramati, Nasrapur, Bijapur, Mhavare, Mulshi, Pirangut, Daund, Bhor, Charholi, Narayangaon, Ambegaon, Junnar, Supe, Rajgurunagar, Indapur, Shirur to Pune. A total of 2375 students and 376 faculty members were surveyed. The students surveyed are either pursuing 11th, 12th (HSC) in Vocational Stream or 2 year ITI courses after 10th standard. The tool used for survey was a simple questionnaire administered in English and Marathi. The sample forms for students and faculty have been attached as an Annexure IV.

The results of the survey were very encouraging and supportive of the recommendations of the Committee.

11.2 GENERAL FINDINGS

11.2.1 Analysis of Students Feedback:

1. All students surveyed are aspiring for higher education and are enthusiastic about the Vocational University. They wish to continue higher education in their respective vocational stream and do not wish to move to the academic sector if a choice of Vocational Higher Education is available.

2. Students choose to pursue higher vocational education vis-a-vis entering the job market.

3. The most popular streams amongst students of both ITIs and Vocational Colleges is the Technical stream and for the later group the second popular choice is the Business/Commerce stream.

4. Majority of the students are IT literate having basic computer and internet literacy.

5. Students are extremely enthusiastic about the concept of vocational university and the possible opportunities of higher education in the vocational stream that would become available for them.

11.2.2 **Analysis of Faculty Feedback:**

1. All faculty feel that students studying in courses at 10+2 level aspire for higher vocational education rather than entering job market immediately. Surprisingly even students studying at ITIs aspire for higher vocational education.

2. Faculty feel that majority of students opt or choose the technical stream as compared to other vocational streams.

3. All faculty aspire for teacher development programs for further skill enhancement.

4. Majority of the faculty feel that they would like to do industry consultancy, projects or other collaborative work with the local industry while continuing to teach.

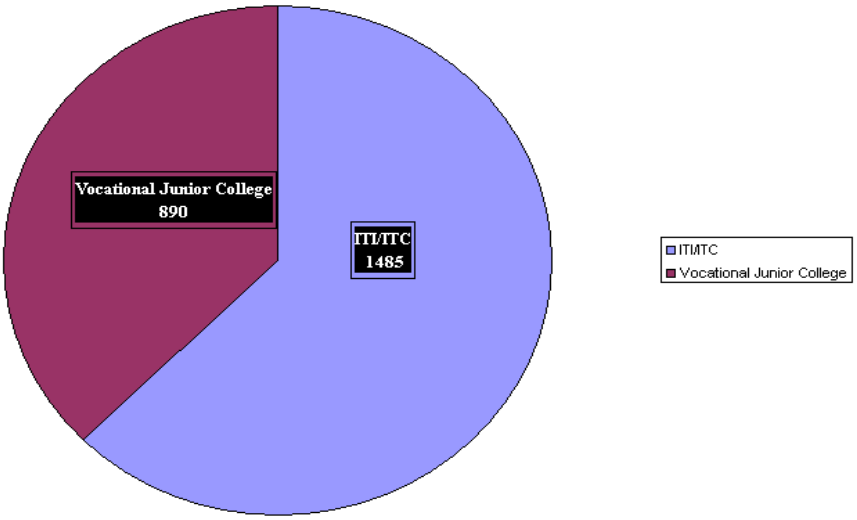
5. Majority of the faculty feel that a formal vocational education qualification such as Bed in Vocational Education would be desirable.

6. Many of the faculty would also like to go for PhD in vocational stream.

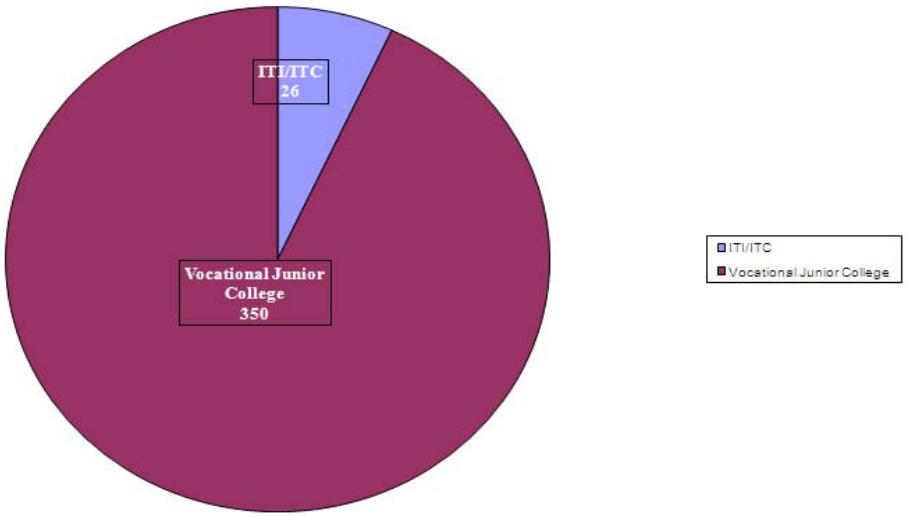
7. All faculty agree that the weightage for practical/hands-on component is important for in vocational education and training and feel that more than 70% weightage should be given to the practical component.

8. All the faculty are extremely enthusiastic and positive about establishment of the vocational university and feel that this will help provide vertical mobility options to vocational students. They also feel that a clearly defined path for progression with linkages to the courses offered at 10th level, will increase the popularity of the vocational education sector and the Vocational University will form an integral part of such a system.

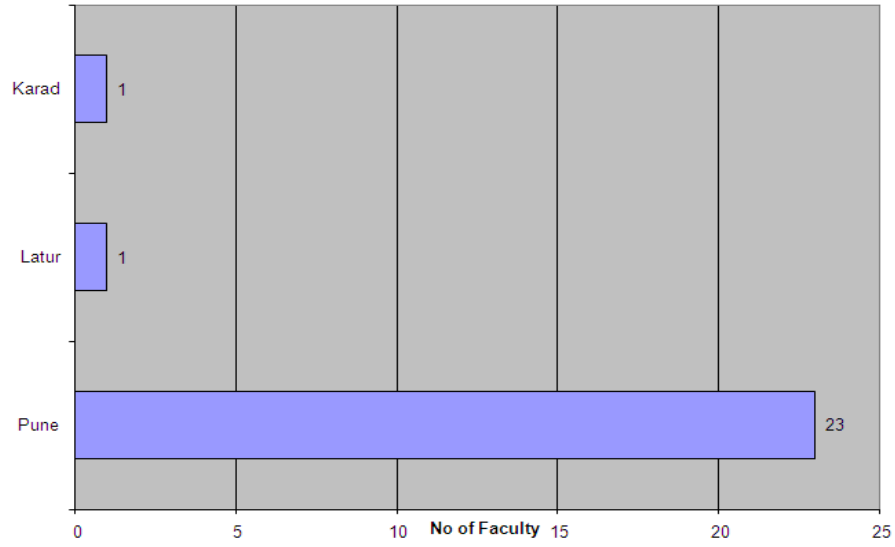
Total Student Survey Forms - 2375



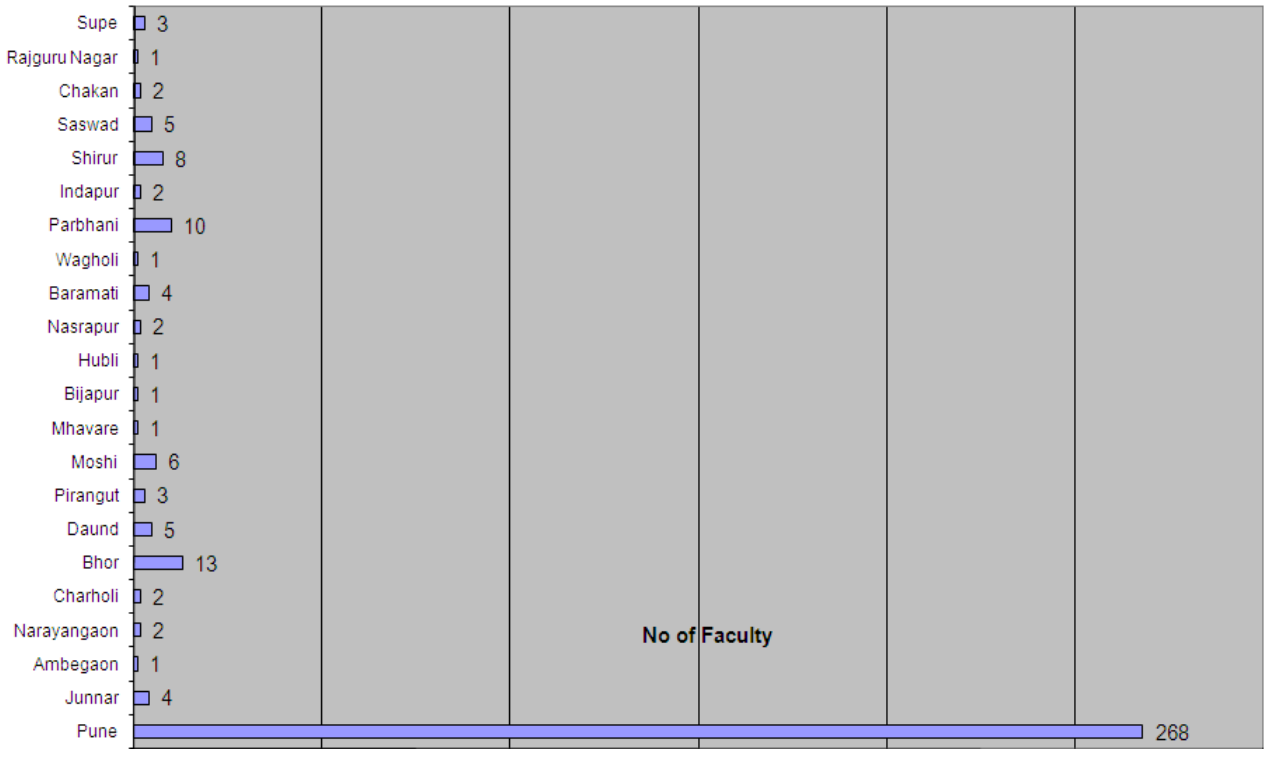
Total Faculty Survey Forms - 376



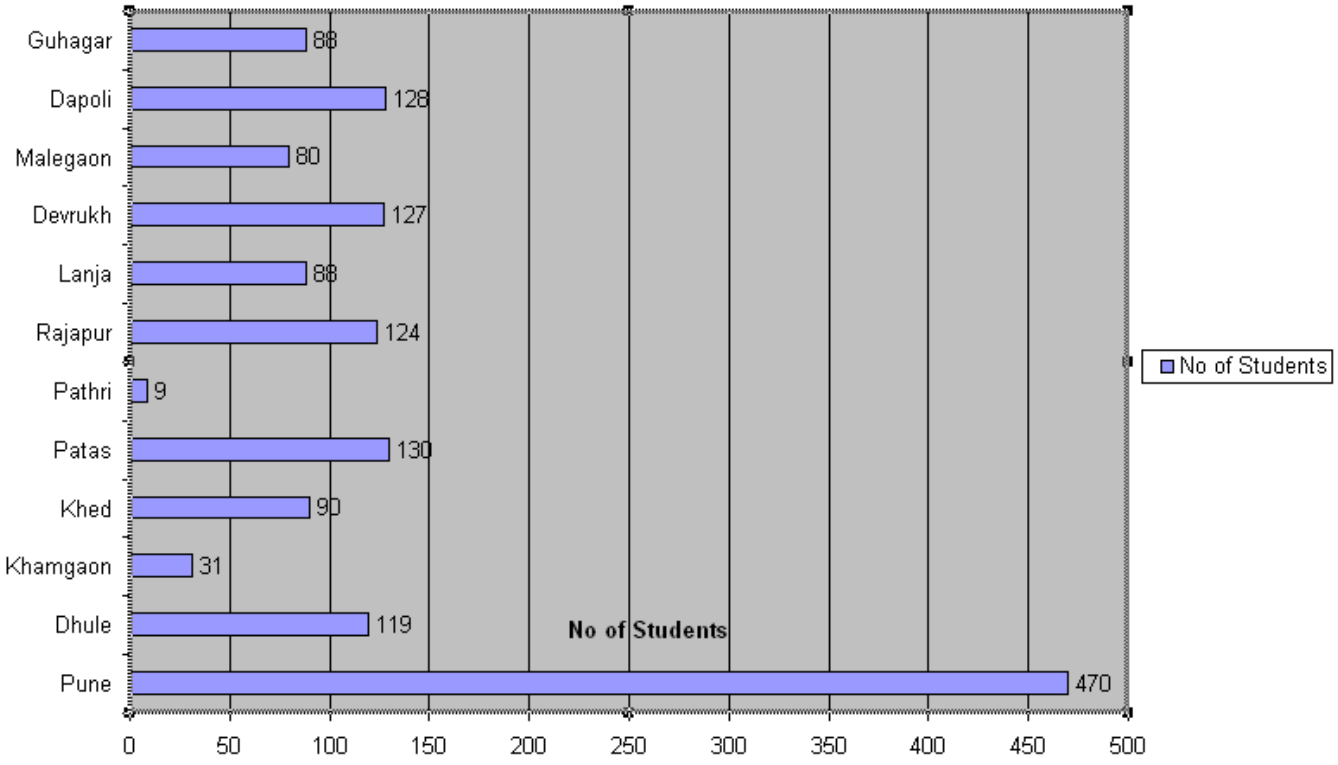
Geographical Distribution of Faculty in ITI/ITCs



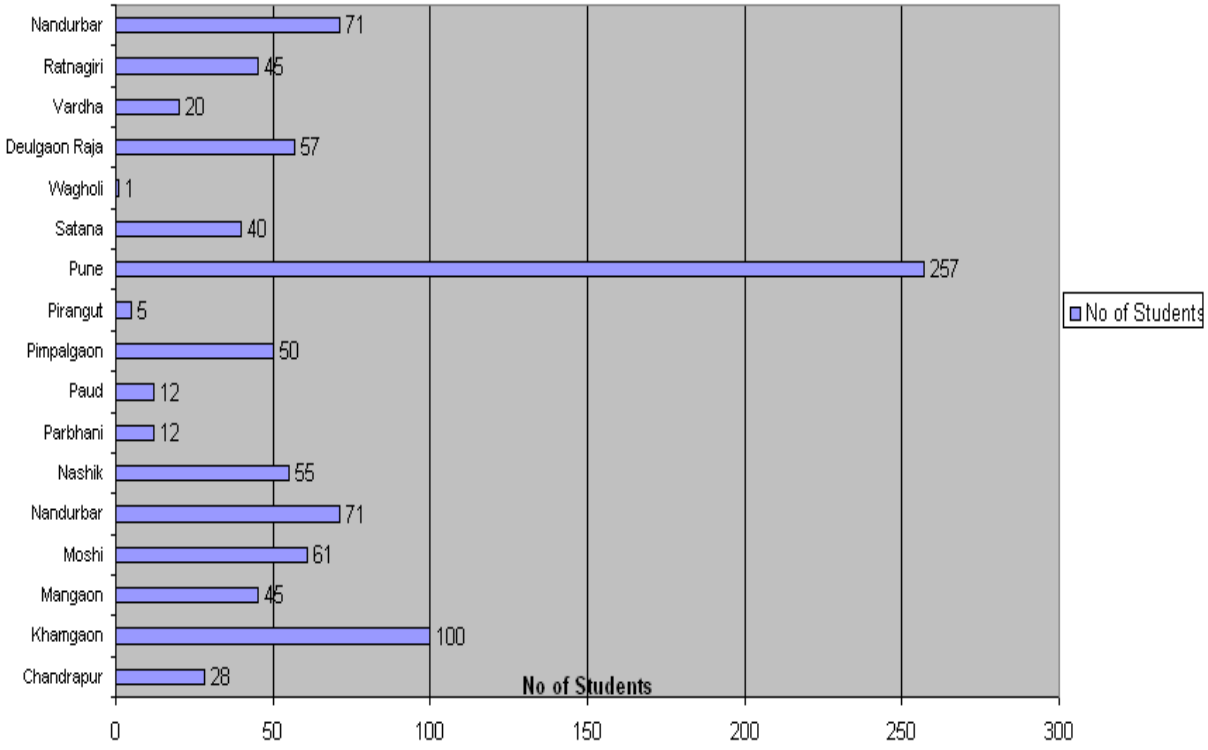
Geographical Distribution of Faculty in Vocational Junior Colleges



Geographical Distribution of Students in ITIs/ITCs

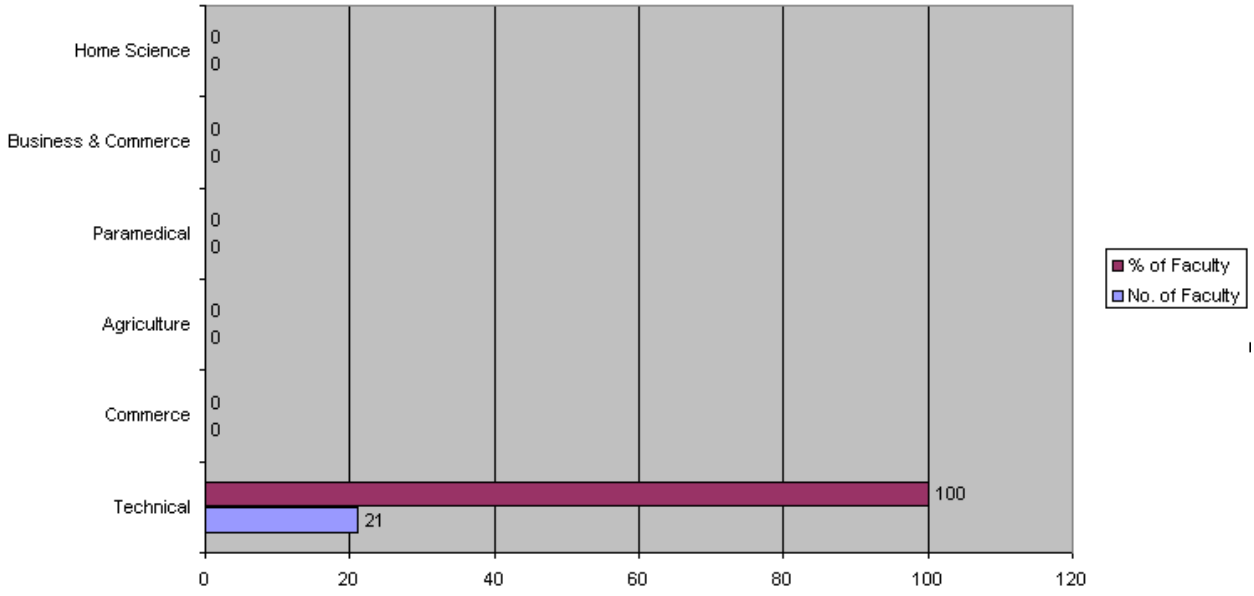


Geographical Distribution of Students in Vocational Junior Colleges

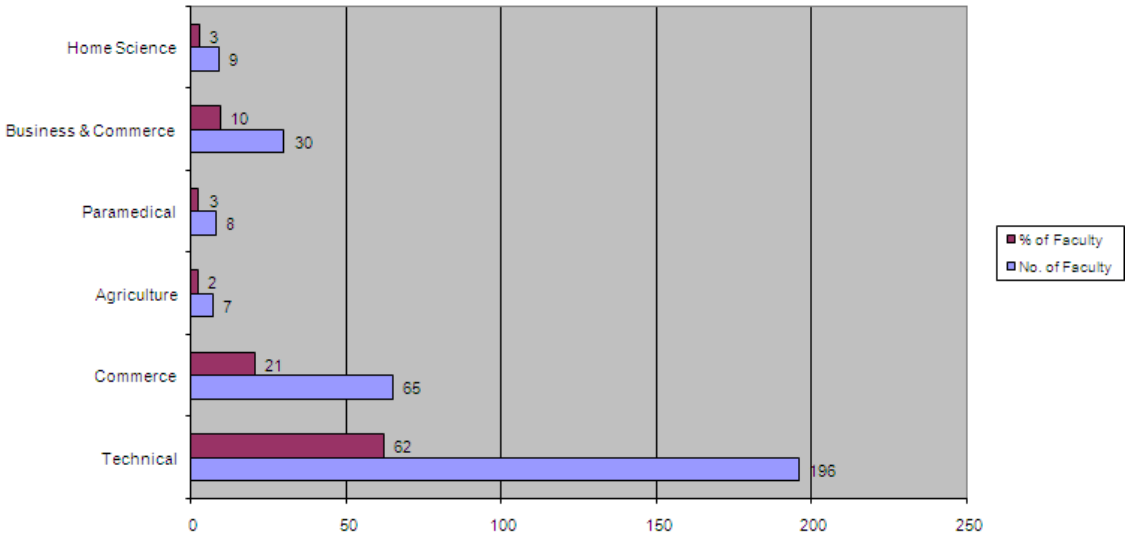


FACULTY FEEDBACK

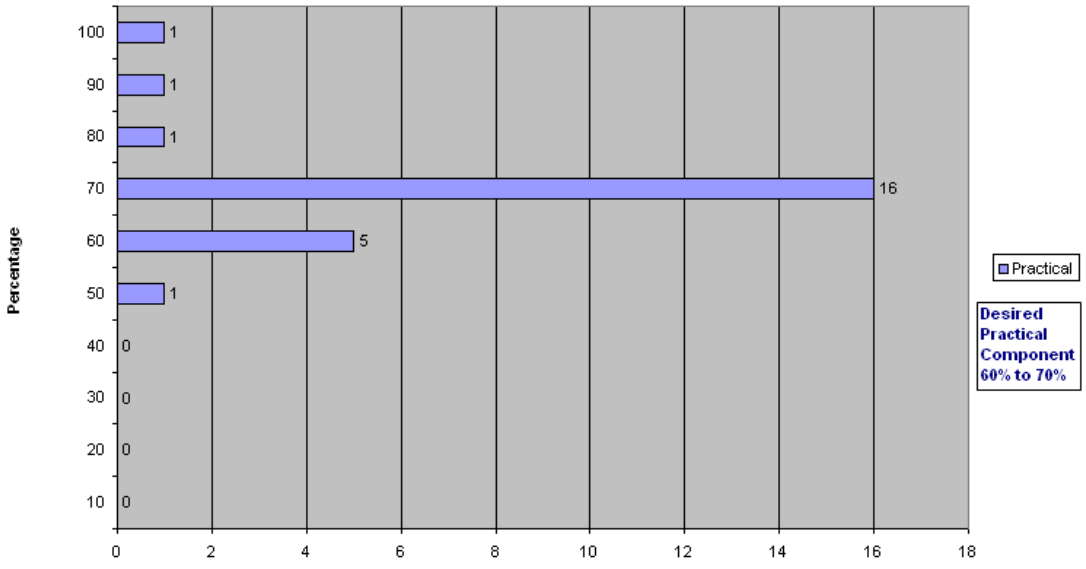
ITI/ITC Faculty Feedback: Student interest in Higher Education



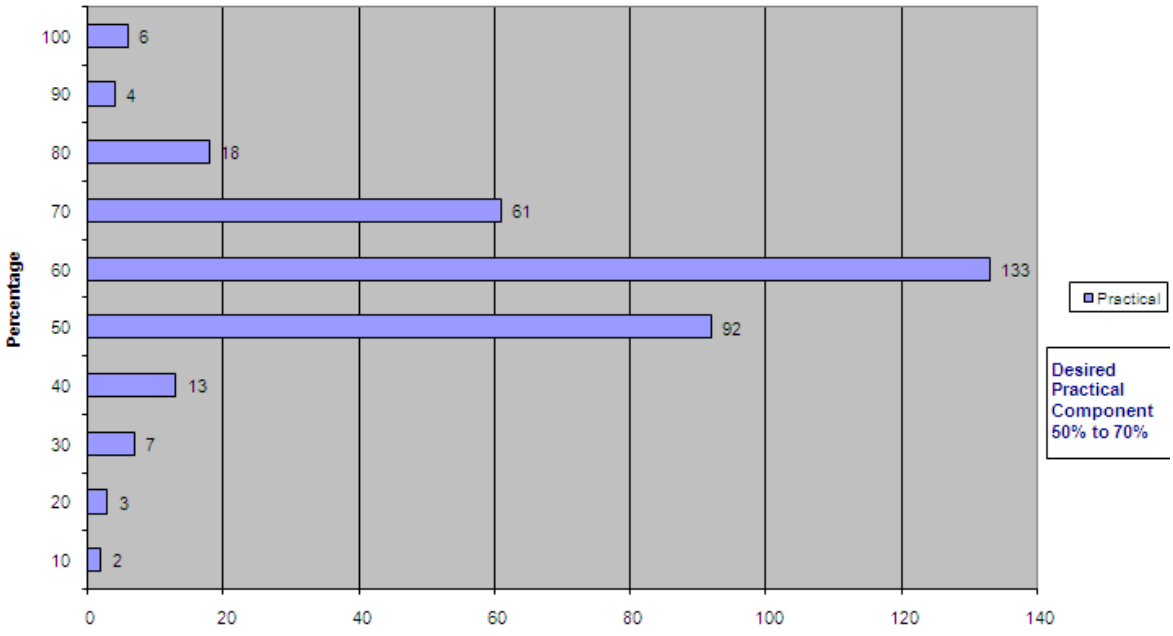
Vocational College Faculty Feedback: Student interest in Higher Education



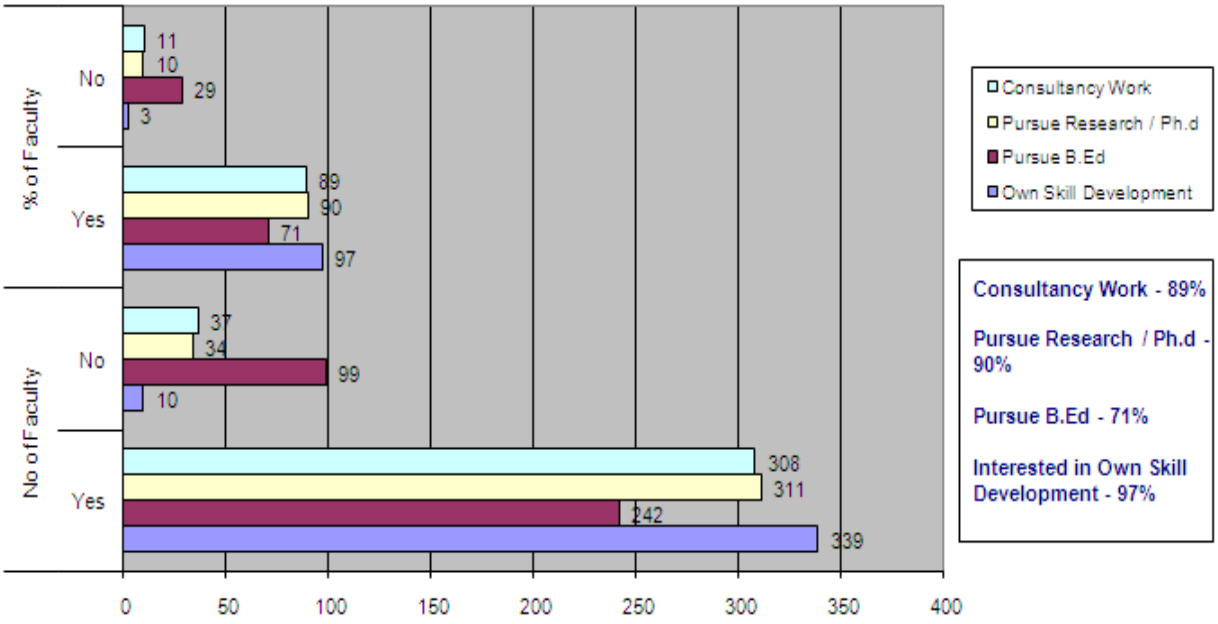
ITI Faculty Feedback: Desired weightage of Practical Component



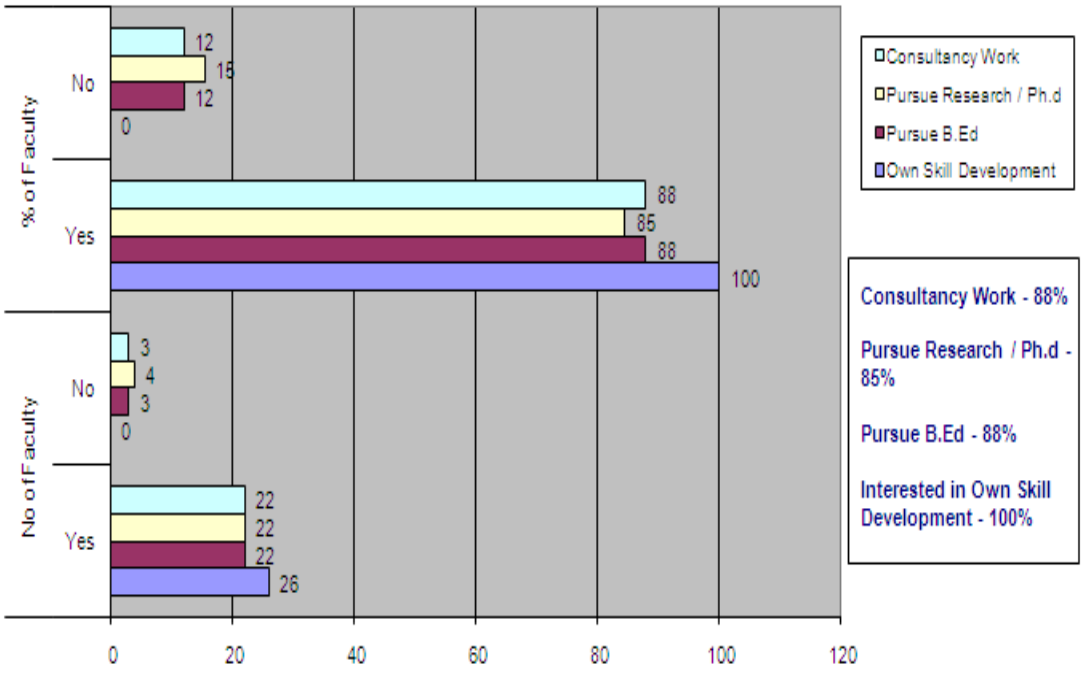
Vocational Junior College Faculty Feedback: Desired weightage of Practical Component



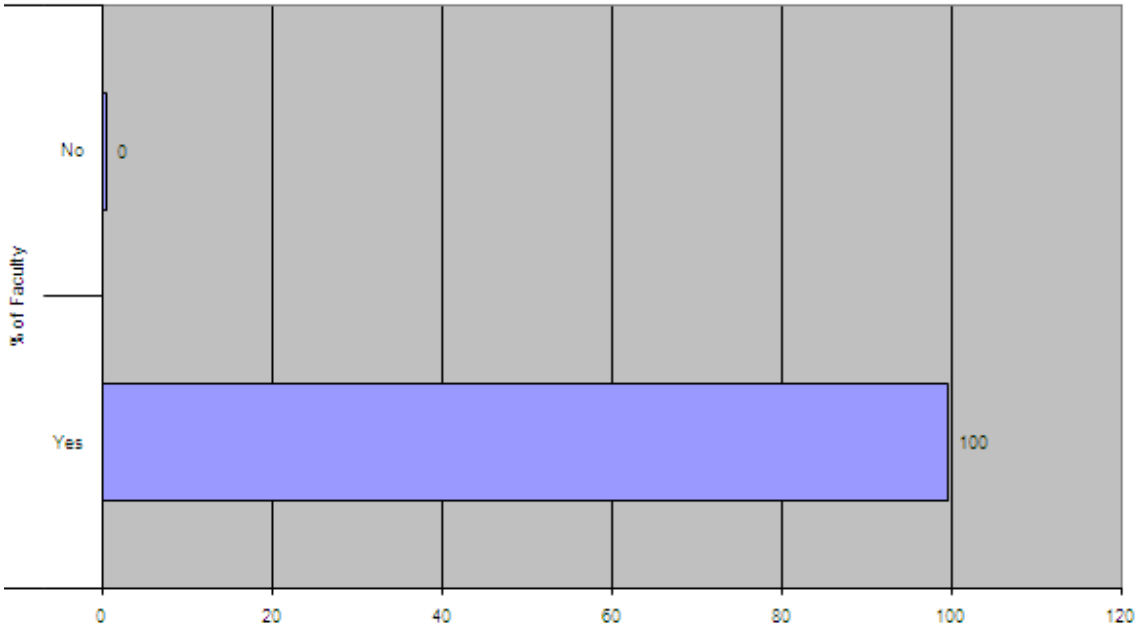
Career Aspirations of Faculty in Vocational Junior Colleges



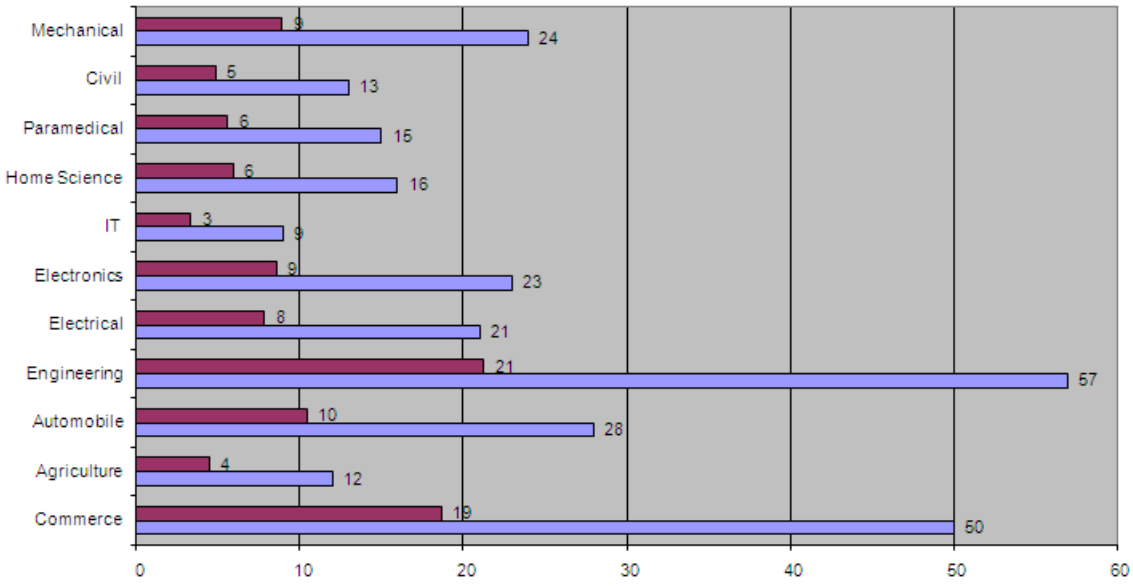
Career Aspirations of Faculty in ITI/ITCs



Faculty Feedback on Establishment of Vocational University

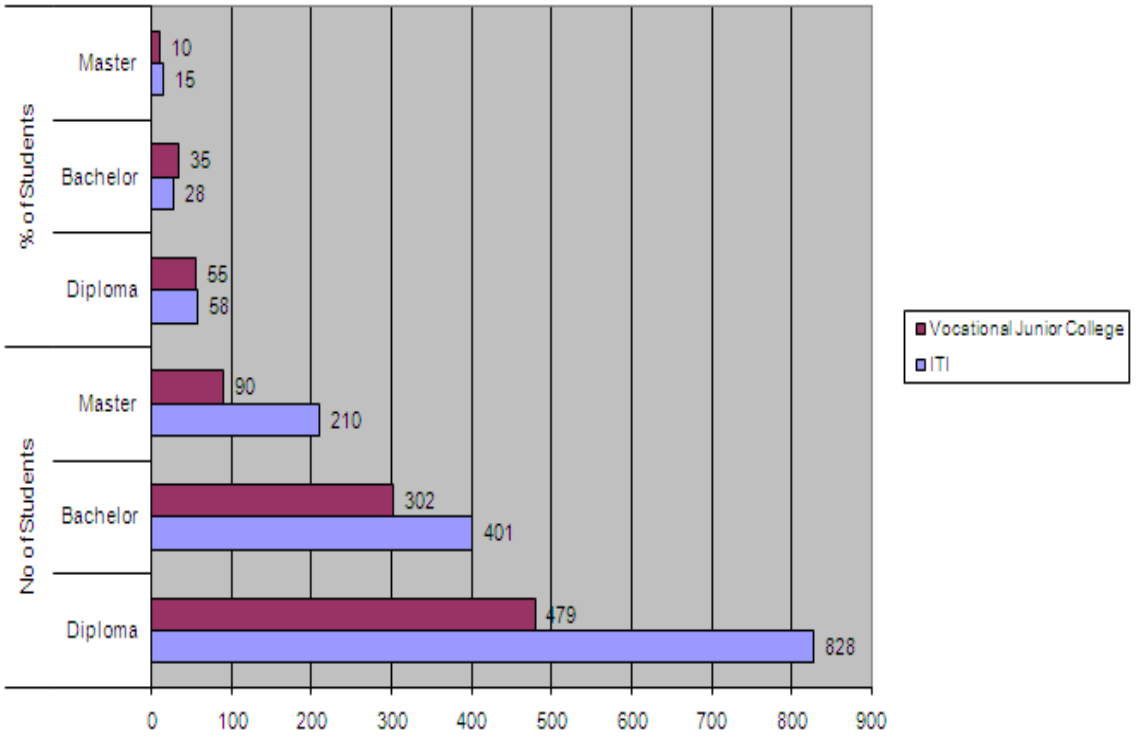


Faculty Feedback on types of Degrees to be offered by Vocational University

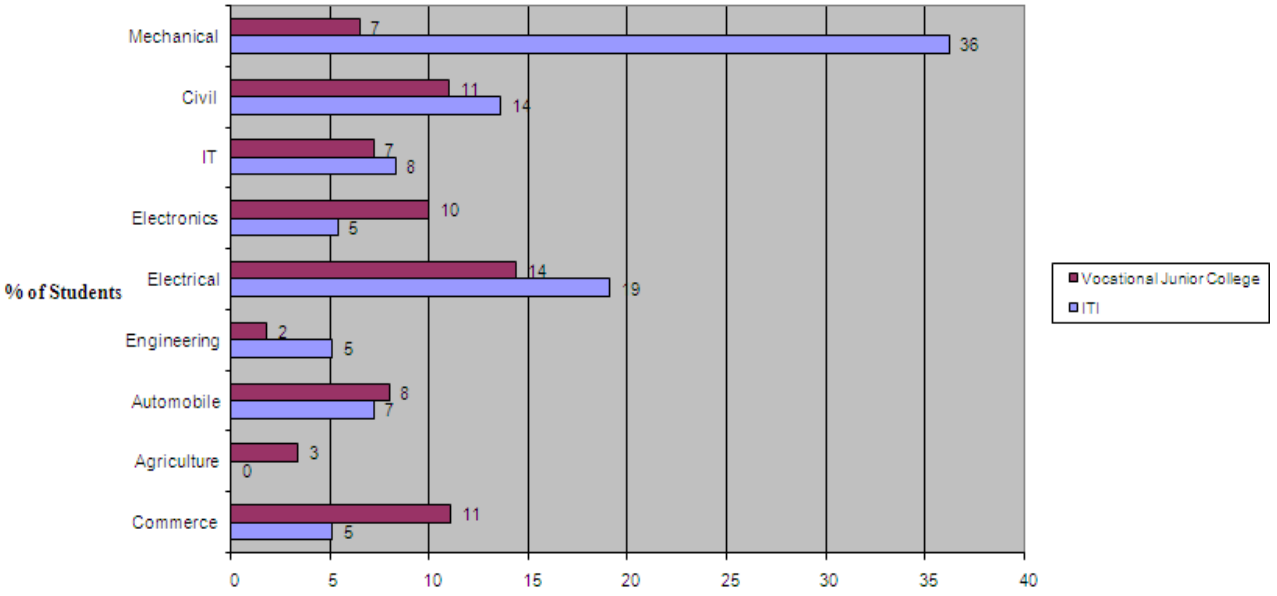


STUDENT FEEDBACK

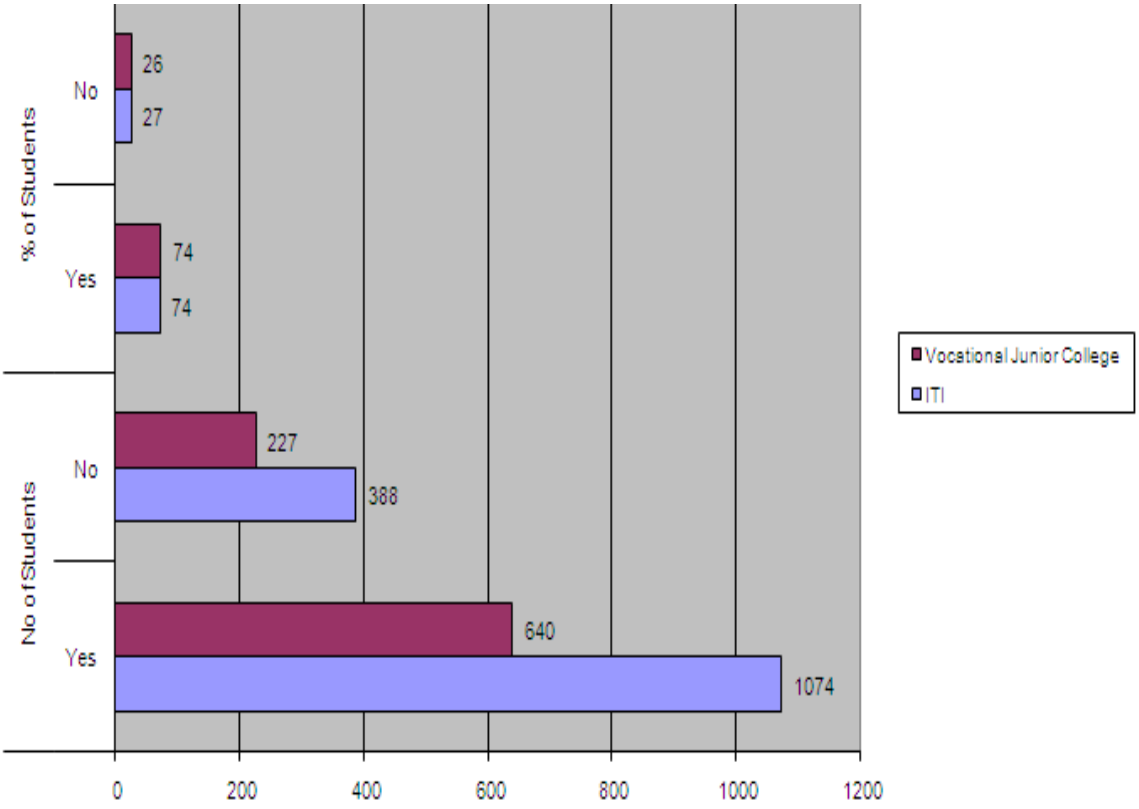
Student Aspirations for Higher Education



Preferred Vocational Streams for Higher Education



Computer Literacy of Vocational Students



CHAPTER XII

CONCLUSIONS

12.1 **Summary of Recommendations**

The Committee carried out several activities as part of its working including:-

1. Meetings with important persons

2. Presentations to policy makers to seek opinions

3. Public opinion by using web site and survey of over 2000 students and 300 faculty from the vocational sector and survey of industry

4. Individual meetings and discussions with foreign delegates and representatives of foreign governments involved in vocational/skill development sector like Germany, Australia and Sri Lanka

5. Visit to Sri Lanka for studying their vocational framework and vocational university

6. Publishing articles in print and electronic media for creating public awareness and take opinions of parents, students and faculty involved in the vocational sector

7. Workshops to orient faculty on NVEQF, vocational teaching-learning pedagogy and competency based curricula design

The Committee has carried out detailed research of various vocational models of foreign countries such as Australia, Germany, Sri Lanka, China, Korea, UK and Switzerland. The Chairperson of the Committee also held meetings/interactions with the various stakeholders such as FICCI, MCCIA, CII, NSDC representing the industry, MHRD, MoLE representing the Central Government, Chairman of Secondary & Higher Secondary Examinations Board, Joint Director, Higher Education Department, Commissioner, Employment, Self-Employment and Skill Development, Regional Director, Department of Vocational Education, District Vocational Officer and other officials representing the Maharashtra State Government, students and faculty of ITIs, ITCs and vocational colleges of Maharashtra. The Committee sought public opinion on the proposed concept of Vocational University and other findings as well as other recommendations by putting up these documents on the internet/web site. The Chairperson of the Committee also gave presentations to seek suggestions and opinions from important personalities representing politics, public administration, industry leaders and policy makers. Workshops were conducted on 3 occasions for faculty of the vocational sector

to orient them on the concept of NVEQF, curricula design for competency based courses and vocational teaching-learning pedagogy and for designing sample curricula for some courses.

In conclusion, the Committee has made the following important recommendations the details of which have been elaborated upon in the respective sections of the Report:

1. There should be a unified system of vocational education, training and skill development in the State offering standardized courses/programs at all levels for the benefit of students, industry and community as a whole.
2. There should be a single statutory body namely, the Maharashtra vocational Education and Training Commission (M-VEC) to plan, promote, regulate, develop, co-ordinate and standardize vocational education, training and skill development at all levels in the in the State of Maharashtra.
3. There should be an accreditation board namely, the Maharashtra Vocational Education and Training Registration and Accreditation Board (M-VETRAB) for registration, recognition and accreditation of all vocational training providers in the State.
4. There should be an independent quality council for the vocational sector namely, the Maharashtra Vocational Education and Training Quality Council (M-VETQC) for quality assurance of vocational training providers in the State.
5. The State should encourage establishment of one or more Vocational Universities in the State to popularize this sector, create opportunities of higher vocational education and for providing vertical mobility to students from this stream. The Committee has proposed an umbrella or enabling Act for establishment of Vocational University in a PPP model which will bring the industry, community, academia and State Government together. The Vocational University will operate in an affiliatory model.
6. The Committee recommends that a vocational act namely, the Maharashtra Vocational Education and Training Act be enacted to establish the M-VEC, M-VETRAB and M-VETQC. A separate Act namely, the Maharashtra Vocational Universities Act has been proposed by the Committee for establishment of the Vocational University.
7. Committee has recommended amendment of the MSBTE Act to take up additional activities of examinations, declaration of results etc for vocational courses and programs as per directives of the M-VEC. All the courses of MSBTE should be offered by the M-VEC although the recognition and control of AICTE for AICTE recognized diplomas will continue to remain so. Similarly all courses and programs of MSBVE should also be offered by the M-VEC. Thus both MSBTE and MSBVE should come under the aegis of the M-VEC.
8. Committee has recommended introduction of pre-vocational subjects at secondary level with some minor modifications to the existing SSC scheme.
9. Committee has recommended introduction of Electives and Life Coping Skills (Generic skills) in the HSC (Voc) curricula so as to enable vertical mobility for these students in conventional undergraduate programs and improve employability of students.

10. Committee has recommended some bridge courses which can be done by ITI students as external subjects to obtain HSC (Voc) certification.

11. Committee has recommended introduction of credit system including credit banking and transfers, modular course structure and introduction of life coping (generic) skills in all vocational courses/programs to enhance employability and create flexible learning pathways.
12. Committee has recommended alignment with Center's initiatives and in particular NVEQF for all vocational courses/programs.
13. Committee has recommended increased industry and community participation and engagement in all aspects of the VET system and especially with VTPs and the Vocational University. The Commission shall undertake the creation and maintenance of a Labour Information System to understand, track and record industry trends & needs.
14. Committee has recommended that existing polytechnics, VTPs offering +2 level programs and Community Colleges may become affiliated to the Vocational University.
15. Committee has recommended that a Recognition of Prior Learning scheme be introduced for the informal sector to come into the mainstream.

In conclusion, the Committee has recommended major legislative reforms which will create a comprehensive vocational education policy for the State of Maharashtra. The creation of a single statutory body, the M-VEC or Commission will enable the creation of an integrated system of vocation education, training and skill development in the State. However, it is important to note that the reforms and other recommendations suggested by the Committee will not add much financial burden on the State Government. The important suggestion of establishing India's first Vocational University in the State will be a landmark in the history of Maharashtra and India.

The Committee does hope that this Report and the recommendations will create an educated, trained and skilled human resource which will contribute towards productivity of the industry and growth of the society, community and country as a whole.

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CHAPTER XIII

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ANNEXURE - I

UNIVERSITY OF VOCATIONAL TECHNOLOGY

Faculty of Industrial & Vocational Technology
Department of Construction Technology

B.Tech. in Building Services Technology

Program Structure

YEAR 1
Year 1- Semester 1

No.	Module Code	Module	Type	Credits	Notional Hours	Lectures	Practical (hrs)	Field Visits (hrs)	Self-Study (hrs)	Evaluation	
										End Exam (%)	Assignment (%)
1	BST01	Mathematics I	C	04	100	80	-	-	20	60	40
2	BST02	Mechanics of Materials	C	06	150	80	20	-	50	60	40
3	BST03	Construction Technology I	C	06	150	80	-	20	50	60	40
4	BST04	Building Environment & Human Comfort	C	04	100	60	12	-	28	60	40
5	BST05	Presentation of Engineering Information	C	04	100	40	30	-	30	40	60
6	BST06	Drafting Techniques & CAD	C	06	150	80	20	-	50	-	100
Total				**30**	**750**	**420**	**82**	**20**	**228**		

C- Core Modules E – Elective Modules

Year 1- Semester 2

No.	Module Code	Module	Type	Credits	Notional Hours	Lectures /Tutorials(hrs)	Practical (hrs)	Field Visits (hrs)	Self-Study (hrs)	Evaluation	
										End Exam (%)	Assignment (%)
7	BST07	Fluid Mechanics	C	06	150	80	20	-	50	60	40
8	BST08	Construction Technology II	C	06	150	80	-	30	40	60	40
9	BST09	Applied Electricity	C	06	150	80	24	-	46	60	40
10	BST10	Applied Thermodynamics	C	06	150	80	24	-	46	60	40
11	BST11	Architectural Aspects of Building Services	C	06	150	60	30	20	40	40	60
Total				**30**	**750**	**380**	**98**	**50**	**222**		

C- Core Modules E – Elective Modules

YEAR 2
Year 2- Semester 1

No.	Module Code	Module	Type	Credits	Notional Hours	Lectures /Tutorials(hrs)	Practical (hrs)	Field Visits (hrs)	Self-Study (hrs)	Evaluation	
										End Exam (%)	Assignment (%)
12	BST12	Mathematics II	C	04	100	80	-	-	20	60	40
13	BST13	Lighting Systems in Buildings	C	04	100	60	10	10	20	60	40
14	BST14	HVAC Systems	C	06	150	80	10	20	40	60	40
15	BST15	Building Acoustics	C	04	100	60	10	10	20	60	40
16	BST16	Piped Services in Buildings	C	08	200	120	20	20	40	60	40
17	BST17	Building Services Integration Software	C	06	150	20	80	-	50	-	100
Total				**32**	**800**	**420**	**130**	**60**	**190**		

C- Core Modules E – Elective Modules

Year 2- Semester 2

No.	Module Code	Module	Type	Credits	Notional Hours	Lectures /Tutorials(hrs)	Practical (hrs)	Field Visits (hrs)	Self-Study (hrs)	Evaluation	
										End Exam (%)	Assignment (%)
18	BST18	Electrical Installation Technology	C	06	150	80	20	10	40	60	40
19	BST19	Ancillary Services in Buildings	C	10	250	150	20	20	60	60	40
20	BST20	Energy Management in Buildings	C	06	150	60	20	20	50	60	40
21	BST21	Measurement Practice & Estimating	C	06	150	100	-	-	50	60	40
Total				**28**	**700**	**390**	**60**	**50**	**200**		

C- Core Modules E – Elective Modules

YEAR 3

Year 3- Semester 1

No.	Module Code	Module	Type	Credits	Notional Hours	Evaluation
22	BST22	Industrial Placement	C	30	750	Final Evaluation (Report + viva) 100%
Total				**30**	**750**	

C- Core Modules E – Elective Modules

Year 3- Semester 2

No.	Module Code	Module	Type	Credits	Notional Hours	Lectures /Tutorials(hrs)	Practical (hrs)	Field Visits (hrs)	Self-Study (hrs)	Evaluation	
										End Exam (%)	Assignment (%)
23	BST23	Project Management	C	06	150	80	20	-	50	60	40
24	BST24	Business in Built Environment	C	06	150	80	-	-	70	60	40
25	BST25	Research Methodology	C	04	100	40	10	-	50	60	40
26	BST26	Project	C	14	350	350				Final Evaluation (Report + viva) 100%	
Total				**30**	**750**	**200**	**30**	**-**	**170**		

C- Core Modules E – Elective Modules

YEAR 4 (Optional)
Year 4- Semester 1

No.	Module Code	Module	Type	Credits	Notional Hours	Lectures /Tutorials(hrs)	Practical (hrs)	Field Visits (hrs)	Self-Study (hrs)	Evaluation	
										End Exam (%)	Assignment (%)
27	BST27	Construction Economics & Financial Accounting	C	06	150	100	-	-	50	60	40
28	BST28	Contracts & Procurement	C	04	100	70	-	-	30	60	40
29	BST29	Interior Designing & Building Services	C	06	150	70	20	20	40	40	60
30	BST30	3D Modeling for Buildings	C	10	250	50	150	-	50	-	100
31	BST31	Provision of Services in Conversion & Adaptation of Buildings	E	04	100	60	-	20	20	60	40
32	BST32	Building Management for Sustainability	E	04	100	60	-	20	20	60	40
33	BST33	Quality Management in Buildings	E	04	100	60	-	20	20	60	40
		Total		**30**	**750**	**350**	**170**	**40**	**190**		

C- Core Modules E – Elective Modules

Note: In the 4th year 1st semester, elective modules can be selected to satisfy the total credit requirement of 30. The electives to be offered in a particular year will be decided by the Academic Council of the UNIVOTEC.

Year 4- Semester 2

No.	Module Code	Module	Type	Credits	Notional Hours	Evaluation
34	BST34	Design Project	C	30	750	Final Evaluation (Report + viva) 100%
Total				**30**	**750**	

C- Core Modules E – Elective Modules

ANNEXURE – II (A)

CONCEPT OF VOCATIONAL UNIVERSITY

(Response from CUMMINS INDIA LIMITED)

1. Concept of Vocational University to provide vocational education at tertiary level (NVQF level 7), teachers training and curricula development.

Vocational Education cannot be confused with Conventional Education and to provide the focus there is a need for separate campus/concept / curriculum. Vocational education at tertiary level (NVQF level 7) is workable. Teachers, training and curriculum should be aligned accordingly.

2. Role of Industry in mapping of Occupational standards.

Industry has to engage itself in defining and mapping the Occupational standards. It would be an iterative process. Various section of the industry needs to participate and establish these standards. Clearly, they would need the support of the academia but ultimately as a user, they have a role to play.

3. Partnership of Industry with Vocational University for curricula development and periodic review by Industry.

One of the big customers of Vocational University will be the industry. Certainly Vocational University should also be creating entrepreneurs as well as trainers. If the biggest customer is industry then they need to be sharing their expectation with the university in terms of knowledge and skill they expect from the students. Hence industry has to participate for the meaningful output that they can use immediately.

Technology, Business and Market changes all the time and so there cannot be a standard curriculum and hence the need to review.

4. Inclusion of general academic skills in the curricula.

General academic skill provides a rigour and discipline required and hence they should be included in the curricula.

5. Training / apprenticeship of vocational students at Industry premises

In a structured manner, training /apprenticeship of vocational students should be included as is being done for the students who come from ITI (ACT Apprentices). The scope and depth in case of Vocational University's has to be much higher.

6. Industry aid for setting up Production Oriented labs

Industry aid for setting up Production oriented labs is a good concept but details need to be worked out to define the role of the industry.

7. Utilisation of University premises/labs for in-service training of employees

Make sense as employees also need refresher and upgradation.

8. Employability of Vocational degree holders in the industry

If the curriculum is linked to expectation and requirements of the industry, there is every reason to believe that employability of Vocational degree holder would be higher.

9. Role of industry in governance of Vocational University

Significant meaningful inputs can come from industry at all levels. It could go beyond curriculum development and participation of its employees. Industry brings with it certain professionals and practices which will be helpful in governance of Vocational University.

10. Provisioning of industrial Instructors (employees) for conducting hands-on training for Vocational University

Most certainly, this would make skills more relevant and students more employable. Industry will also effectively be upgrading its employees into good trainers.

11. Outsourcing industrial projects to Vocational University

Most certainly, as Vocational University upgrades itself, it could and should take up industrial projects.

12. Utilising Vocational University expertise to undertake R & D projects for the Industry

Once again, as the level of expertise increases in the University, it should do sponsored and Research and Development projects.

13. Any other feedback/suggestions

Time for Vocational University has arrived. There is no way we can meet the requirements of our Manufacturing, Service and Agriculture sector through Conventional Educational Institutions. Government, Industry and Academia needs to collaborate to create this machinery of Vocational University. We should pilot one and thereafter replicate it in many States.

ANNEXURE – II(B)

CONCEPT OF VOCATIONAL UNIVERSITY

(Response from PRAJ INDUSTRIES LIMITED, PUNE,

is given in blue text below)

1. Concept of Vocational University to provide vocational education at tertiary level (NVQF level 7), teachers training and curricula development.

This is a very novel concept and need of the hour not only from industry point of view but also from national point of view. It will have a great positive impact on overall employability of the youth and in turn on social health of India.

The last page of this response contains a snap shot of various opportunities available for a child after passing out 10th standard and one of which is to opt for ITI. The main reasons for children opting for ITI are socio-economical. Moreover, the post-school educational costs are rising day by day. There could be quite a lot bright and talented children who would be great engineers provided they have adequate financial support that time. This concept of Vocational University will provide a new opportunity for them to meet their ambitions.

Industry will be more than happy to have freshers who are productive from day one and would be ready to give fair chance to freshers coming from top class universities (IITs or regional colleges) , other engineering colleges, diploma holders and those from Vocational Universities. In our opinion, Vocational University pass outs would win because they will have blend of practical and theoretical skills as well as competencies.

2. Role of Industry in mapping of Occupational standards.

Industry would love take the responsibility provided adequate authority is provided by the university. It can be instrumental in upgrading the syllabus, providing opportunities for practical training, recruitment of faculty etc.

The constant flow of information from Industry to University to Industry is quite necessary. This will compel the University Faculty to upgrade itself constantly. The up gradation of Courses constantly will retain the relevance of the Courses and the Faculty will have to study as a routine. The Industry must constantly review its needs and requirements considering the ever changing environment. The University cannot be expected to be that flexible and agile all the times. The industry must take active part in settling the Course scope and coverage.

3. Partnership of Industry with Vocational University for curricula development and periodic review by Industry.

Under the Public Private Partnership program of Central Government, quite a few ITIs are adopted by the industry. These partnerships are benefitting the students, faculty and the industry. The details of this scheme are available on the web site of DVET (http://www.dvet.gov.in/Schemes/PPP.aspx). A partnership program on similar lines can be worked out for Vocational University also. ITI (Velhe) has been adopted by PRAJ INDUSTRIES under this scheme.

4. Inclusion of general academic skills in the curricula.

It is very much desired and possible also.

The Practical Training must be imparted by Industry to Students and Staff on regular basis. The students must be given the feel of actual industrial working on regular basis. The passed out student must not be a novice when he enters the Industry.

5. Training / apprenticeship of vocational students at Industry premises

It is very much desired and possible also.

6. Industry aid for setting up Production Oriented labs

It is very much desired and possible also.

7. Utilisation of University premises/labs for in-service training of employees

This needs to be checked on case to case basis. Industry response would depend upon the facilities available with the University.

8. Employability of Vocational degree holders in the industry

In our opinion, it would be quite high as explained in response to question # 1

The Industry must give fair chance to students passing from such Vocational University and other engineering Colleges. The Vocational University Student may have adequate practical experience but lesser theoretical exposure and Engineering College student may have enough theoretical exposure but lacks practical exposure. The objective should be to attain golden mean of the two. Hence giving fair opportunity to all students will go a long way in establishing the Vocational University Credentials and Acceptance.

9. Role of industry in governance of Vocational University

In general, to some extent the educational institutes are also profit oriented now-a-days and it is very much required to sustain in a professional manner. The performance of the Vocational University will largely depend upon the industry's involvement in the governance. Profit sharing concept can be thought of while working out the model of Industry – University partnership program. The ITI adoption scheme referred above does not have this profit sharing.

Vocational University can also request the partner industry to nominate its competent employee(s) on the governing body on full time basis to give justice to the role they have to play.

The Board of Studies of the University should also be represented by Industry nominee.

10. Provisioning of industrial Instructors (employees) for conducting hands-on training for Vocational University

Highly recommended.

11. Outsourcing industrial projects to Vocational University

This needs to be checked on case to case basis. Industry response would depend upon the facilities available with the University.

12. Utilising Vocational University expertise to undertake R & D projects for the Industry

This needs to be checked on case to case basis. Industry response would depend upon the facilities available with the University.

13. Any other feedback/suggestions

We must keep in mind that this is not just an academic issue but a larger socio cultural shift in the Indian context.

In the Indian mind-set and context a person's social 'value' is determined by her/ his professional qualification, competence, skills and accomplishment. Unless we make efforts to promote dignity of labour we will face challenges in promoting this concept.

If the Vocational University charges commercial rates then there are no issues but if one has to charge subsidized rates then the passed out students must be required to pay differential costs when he starts earning.

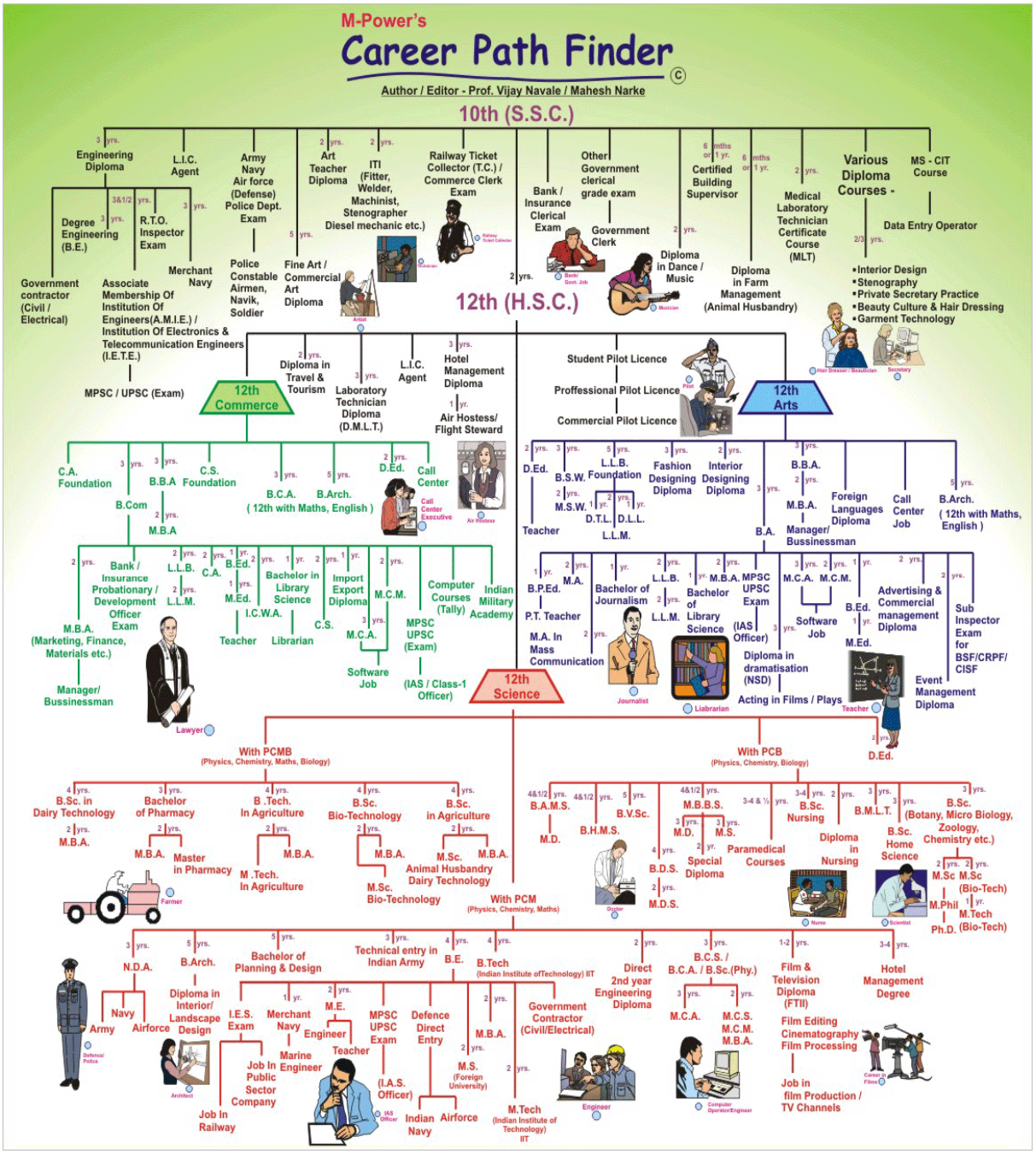
The passed out students must be allowed to appear for higher studies by recognizing the Vocational degree. The Vocational University Student must join at some advantageous level for higher studies.

The mind set of Industry / Teachers and bureaucracy need to change to allow treating this as a profit earning and sustainable alternative to the present model of education. This will make the new initiative successful.

The response to each question above is gist of our thoughts. A meeting in person with our representatives would help to understand those in detail.

PRAJ

ANNEXURE – II(B)



SAMPLE CURRICULA IN RETAIL SECTOR

Introduction

A retail industry involves material handling, production, sales and distribution as well as finance transactions conducted at stores. Each store requires an inventory control system, a Point of Sales (POS) system and an accounting system (maybe also a production system). Major procurement is conducted at the Head Office (HO), Material Receipt is done at the Stores and Bill Passing and Bank Payments are conducted at the HO. Some extent of local procurement is also sometimes being done at the stores. Sale is an activity which is being done completely at the stores. Most of this activity is handled through a POS system.

The Indian Retail Industry is the largest among all the industries, accounting for over 10 per cent of the country's GDP and around 8 per cent of the employment. Retail market in India as is observed in the form of bustling shopping centers, multi-storied malls and the huge complexes that offer shopping, entertainment and food all under one roof. Indian retail is expected to grow 25 per cent annually. Modern retail in India could be worth US$ 175-200 billion by 2016.

ANNEXURE - III

Sr. No.	Job Mapping				
	Level 1 & 2 (Class 9 & 10)	**Level 3 & 4 (Class 11 & 12)**	**Level 5 (Diploma and Advanced Certificate)**	**Level 6 & 7 (Advanced Diploma & Bachelor)**	
1.	**RL1&2/J1:** Retail Bagger	**RL 3 & 4/J1:** Transaction Processing Associate / Billing Associate			
2.	**RL1&2/J2:** Stocking and Inventory Associate	**RL3 & 4/J2:** Retail Store Manager/ Department Manager		**RL 6 & 7/J1:** District Manager	
3.	**RL1&2/J3:** Sales Associate/ Sales Person	**RL3&4/J3:** Retail Sales Merchandiser **RL3&4/J4:** Purchase and Merchandising Associate	**RL5/J1:** Visual Merchandiser	**RL 6 & 7/J2:** Merchandising Manager **RL 6 & 7/J3:** Merchandising Analyst	
4.			**RL5/J2:** Supply Chain Manager		

Three pathways -Sales Professional, Visual Merchandising and Management.

ANNEXURE - III

Qualification Profile		
1.	**Title**	**RL1&2/J2: Stocking and Inventory Associate**
2.	NVEQF Code	
3.	Level	This qualification has been accredited onto the **NVEQF Level 1& 2.**
4.	NVEQF Accreditation No.	
5.	Entry requirements	Class VIII or equivalent competencies as certified through RPL or recognized Board
6.	Qualification Structure	There are 10 Units for the qualification in Stocking and Inventory Associate. To achieve the qualification, candidates must achieve 5 units made up of 2 mandatory units and 3 optional units. Candidates can also undertake additional units, although these are not required to complete the qualification. Candidates achieving one or more units of competence but who do not meet the requirements for a full certificate will receive a certificate listing the units they have achieved.
7.	National Occupational Standards	As provided by the Retailers Association Skill Council of India (RASCI)
8.	Developed by	
9.	Last registration date	
10.	Proposed date for revision	
11.	Progression Opportunities	This qualification has been designed to develop the skills, knowledge and understanding required to enable progression to and from qualifications along the vertical and horizontal planes in the National Vocational Education Qualifications Framework (NVEQF). A candidate achieving a qualification at Level 1&2 NVEQ in Stocking and Inventory Associate Level 1&2 may progress to the qualification at Level 3&4 NVEQF in Retail Store Manager/department Manager.

RL1&2/J2: Stocking and Inventory Associate

The Work: Responsible for the flow of merchandise from the point of delivery to the sales floor or internal destination.

Reference Skills:

(i) Literacy Skills

- **Reading–Level 2**
- **Speaking and listening–Level 2**
- **Writing–Level 1**

(ii) Numeracy Skills

- **Number (some aspects)–Level 1**
- **Measure (some aspects)–Level 1**
- **Interpreting data (some aspects)–Level 1**

Pre-requisites: Nil

Tasks and Range Statement

Unit	Tasks	Range Statement
RL1&2/J1/U1	Working in Retail Sector	• Malls, Departmental Stores, Specialty Stores, Department Stores, Convenience Stores, Hypermarkets, Supermarkets, Multi Brand Outlets (MBOs)
RL1&2/J1/U2	Personal Presentation and Independent Living	• Sector/Company requirements.
RL1&2/J1/U3	Dealing with Customers & Staff	• Customer level, Management level, External organizations.
RL1&2/J1/U4	Completing and Processing Paperwork in the Store	• Basic documents such as filling in simple forms. • Assist in all administrative processes, which may be paper-based and/or electronic.
RL1&2/J1/U5	Organizing and Maintaining Work Area	• Work- routine, roastered or non-routine • Work area - temporary or permanent
RL1&2/J1/U6	Performing Stock Control	• Food and non-food products.

RL1&2/J1/U7	Working in Team	• Multi-cultural environment. • Multi-activity
RL1&2/J1/U8	Maintaining Work Ethics and Organizational Values	• Work ethics and organizational values may relate to modes of communication, store hours of operation, completing work out of hours, dealing with customers, team members and management, and occupational health and safety.
RL1&2/J1/U9	Maintaining Safe and Hygienic Working Conditions	• Various health and safety regulations
RL1&2/J1/U10	Operate Computer and Use Computer Programs	

ANNEXURE - III

Task Analysis

RL1&2/J2: Stocking and Inventory Associate			
Unit	**Task**	**Knowledge**	**Skill**
RL1&2/J1/U1	Working in Retail Sector	• Describe the different types of retail marketing businesses. • Describe the major departments typically found in a retail super market/mall. • Describe products (food and non-food products) thoroughly so they can be correctly explained to customers and properly cared for and displayed while in the store. • Explain the roles, functions and services of manufacturers, wholesalers, distributors and retailers.	• Identify the types of businesses in the organized retail industry-retail formats. • Identify the major departments typically found in a retail super market/mall/convenience store, etc. • Identify the major categories of products, typically stocked in each department of retail super market /mall.
RL1&2/J1/U2	Personal Presentation and Independent Living	• Describe daily personal care activities - what to wear, wash and iron clothes, shower/ bath, wash hair, dry hair, shave, put on make-up, eat nutritious and healthy food.	• Wear clean clothes • Practice personal grooming and hygiene. • Display confidence and positive attitude. • Demonstrate social behaviors such as tolerance, honesty, empathy and courtesy. • Assume personal responsibility in the work environment. Prioritize and manage multiple tasks and responsibilities. Adjust to new demands and unexpected situations.

RL1&2/J1/U3	Dealing with Customers & Staff	• Describe types of customers and their expectations • Describe the needs of customers • Describe the factors that affect customer choices in selecting a product (e.g., purchasing power, likes and dislikes, etc.) • Greeting customers • Describe the expectations of staff at various levels in various retail formats • Describe communication needs and strategies that impact different points of sale in the retail industry.	• Participate in workplace communication, including meetings and discussions • Receive, interpret and respond to verbal and non-verbal messages in a manner appropriate to a given situation. • Handle queries promptly and correctly in line with enterprise procedures. • Work to satisfy customer or client expectations. • Receive and pass on messages to facilitate communication flow. • Use strategies appropriate to a given situation to prevent and resolve conflicts.
RL1&2/J1/U4	Completing and Processing Paperwork in the Store		• Perform and apply numerical concepts and calculations and solve problems by choosing from a variety of mathematical techniques using mental, manual and technological methods. • Operate a range of office equipment to complete routine tasks.
RL1&2/J1/U5	Organizing and Maintaining Work Area	• Describe the features of various products – use, durability, display requirements, etc. • Explain the relationship between the product storage/ display and product	• Apply measures for reducing the risk of hazards and injury. • Monitoring and managing safety for the entire store, and training staff in safety procedures and equipment use. • Acquire, store, allocate and

		safety.	use materials and space efficiently. • Use resources effectively in organizing work schedules. Deal with irregularities and unforeseen difficulties.
RL1&2/J1/U6	Performing Stock Control	• Describe the content of the basic stock list for staple items that should always be in stock in a retail store. • Explain the process of how the receipt, marking and organizing of stock is done to keep it in good condition, properly recorded and stocked to required levels. Describe product ordering procedures using scanners and other electronic systems.	• Prepare stock list for staple items that should always be in stock in a retail store. • Identify problems incurred in product receiving and provide possible solutions to solve these problems. • Demonstrate general stocking procedures, case cutting, shelf blocking, facing, display rotations in all departments of retail store. Construct and maintain various types of food and non-food products display.
RL1&2/J1/U7	Working in Team	• Explain the benefits of team approach to work processes. • Describe how to build and maintain constructive relationships.	• Participate and interact as a team member. • Share knowledge and skills with others. Perform effectively in various environments with people of different cultural background, ages, gender, socio-economic background, attitudes and abilities.
RL1&2/J1/U8	Maintaining Work Ethics		• Follow ethical courses of action. • Take initiative to accomplish task in a timely manner. • Demonstrate honesty, adaptability, dependability and responsibility.

ANNEXURE - III

RL1&2/J1/U9	Maintaining Safe and Hygienic Working Conditions	• Explain the relationship between personal hygiene and product safety and sanitation. • Describe the methods employed for preventing security problems including shop lifting, employee pilferage, bad checks, and counterfeiting, etc. that occur in the retail store.	• Follow workplace safety procedures. • Identify and prevent or solve problems with electrical and electronic equipment. • Utilize a variety of technologies and equipment for preventing fire and occupational health hazards. • Demonstrate and perform basic housekeeping practices.
RL1&2/J1/U10	Operate Computer and Use Computer Programs	• Explain the benefits and various components of the information network used in the retail industry. • Describe the technological services offered in the retail industry including internet shopping, web van delivery systems and computerized self-check out stations.	• Demonstrate skill in operating computers. • Handle information to maintain access to and security of records. • Demonstrate skill in utilizing computer programs used in the retail industry, for example operate a spreadsheet application.

Elements

Unit	Task	Element	Indicative Nominal *Hours for Unit Credit
U1	Working in Retail Sector	E1: Introduction to Retail E2: Retail Environment E3: Retail Terminology	06 04 02
U2	Personal Presentation and Independent Living	E1: Personal Care E2: Health Care E3: Social Skills	02 06 02
U3	Dealing with Customers & Staff	E1: Communication with Customers E2: Communication with Staff	06 06
U4	Completing and processing paperwork in the store	E1:Balance the Register/Terminal E2:	06 06
U5	Organizing and Maintaining Work Area	E1: Product Knowledge E2: Receiving, Unpacking, Processing, Organizing and Storing Merchandise E3:	08 10
U6	Performing Stock Control	E1: Introduction to Stock Control E2: Maintaining and Ordering Stock	06 06
U7	Working in Team	E1: Team Building Exercises E2: Building a Committed Team	04 06
U8	Maintaining Work Ethics	E1: Acting responsibly E2:	06 04
U9	Maintaining Safe and Hygienic Working Conditions	E1: Workplace Health And Safety Regulations E2: Workplace Safety Procedures	06 04
U10	Operating Retail Equipment and Using Computer Programs	E1: Operate Retail Equipment E2: Use Computer Programs	08 06

- **Excluding work placement**

ANNEXURE - III

Performance Criteria

Unit 2: Personal Presentation and Independent Living

Element 1: Personal Care

Teaching and Learning method: Interactive Lecture, Demonstration

Performance Criteria	Yes	No
1. Wear neat/clean clothing suitable for the occasion		
2. Know which personal care items to buy that will improve personal appearance and fit within the budget.		
3. Take pride in personal appearance.		
4. Know which clothes should be hand-washed, dry-cleaned, or machine-washed.		
5. Maintain personal hygienic conditions/habits		
6. Know how to iron clothes and sew on buttons.		
7. Avoid situations leading to personal ill health and also prevent spread of germs to others		

Element 2: Health Care

Teaching and Learning method: Interactive Lecture, Demonstration, Visits

Performance Criteria	Yes	No
1. Know whom to call and where to go for emergency medical care.		
2. Can take care of self when gets cold, flu, minor cuts, etc.		
3. Know how to use an oral thermometer to take my temperature and know when a fever is serious.		
4. Know which non-prescription medications to take for colds, fever, headache, diarrhea, etc.		
5. Know how to get a medication prescription and follow the instructions on the label properly.		

6. Lift heavy objects in a manner that protects back and neck from injury		
7. Know why smoking and chewing *gutka* is harmful to health.		
8. Keep own medical history up-to-date		
9. Know how and when to call a doctor for an appointment for a check up or for treatment of a medical or dental problem.		
10. Know what medical insurance is, why it's necessary and how it can be purchased.		
11. Understand how pregnancy occurs and know how to prevent pregnancy		
12. Know the importance of good nutrition and proper exercise in maintaining health.		

Element 3: Social Skills
Teaching and Learning method:

Performance Criteria	Yes	No
1. Can communicate and interact appropriately in various social situations.		
2. Can start conversations with new acquaintances.		
3. Identify and handle unwanted advances in a manner that does not cause the situate to escalate		
4. Know how to handle conflicts with a friend, teacher, supervisor, or family member without using physical aggression.		
5. Know how to make good decisions by weighing the pros and cons.		
6. Know what is important to me in friend/relationships.		
7. Participate in social activities with peers.		
8. Know where and how to get help if cannot handle or end an argument with a friend, teacher, employer, family member, etc.		
9. Can set personal goals and work to accomplish them with minimal help.		
10. Is honest with friends and say what is on my mind.		
11. Can set limits and boundaries with friends/peers.		
12. Aware of the consequences of teenage pregnancy.		
13. Can plan and invite peers to social activities.		
14. Report to supervisor/employer		

Unit 3: Dealing with Customers & Staff

Element 1: Communication with Customers

Teaching and Assessment method: Role Play & Visit

Performance Criteria	Yes	No
1. Did not interrupt the customer, while talking to him/her		
2. Take notes but maintained interest and eye contact		
3. Asks probing questions to ensure understanding		
4. Remain patient and extended help when the customer struggled with the problem		
5. Provided complete and clear information to the customer		
6.		
7.		

Element 2: Communication with Staff

Teaching and Assessment method: Role Play & Visit

Performance Criteria	Yes	No
1. Did not interrupt the staff member while talking to him/her		
2. Take notes but maintained interest and eye contact		
3. Provided complete and clear information to the staff member		
4. Remain patient and extended help when the staff member struggled with the problem		
5.		
6.		
7.		

Resources

(I) Facilities

- Audio-visual room
- Lecture room
- Stock room

(II) Equipment

Equipment will include but not limited to:

- Communication Equipment-Telephone, Fax, Computers, Xerox Machines, etc.
- Storage Equipment and Fixturing – Shelving, Wall Rack, Gondola, Star or Waterfall Rack
- Display and Promotion Equipment
- Electronic Bar Coding Equipment for Price Labelling and Stock Taking
- Electronic Scales/Weighing Machines
- Portable Data Entry Equipment
- Pricing Guns
- Cardboard Bailers
- Computers
- Printers
- Cleaning Equipment
- Wrapping and Packing Equipment
- Equipment for Carrying or Moving Merchandise

Point-of-sale equipment, such as:

- Cash Register (Manual Or Electronic)
- Cash Drawer
- EFTPOS terminals
- Scanner
- Electronic Scales
- Numerical Display Board.
- Security tagging equipment
- Trolley

(III) Supplies

- Uniforms
- Ball Pen
- Calculator
- Pencil
- Record Book
- First Aid Kit
- Order Forms
- Sample Debit Card and Credit Card Vouchers
- Recording and Tally Sheets
- Promotional Materials
- Banking Deposit Forms
- Purchase Requisitions
- Purchase Orders
- Invoices
- Receipts
- Delivery Dockets And Receipts
- Credit Notes
- Statements
- Remittance Advices
- Cash Register Rolls
- Deposit Books
- OHS Guidelines
- Packing Materials
- Range of Stock and Merchandise for Display
- Shelf Tickets
- Shelf Talkers
- Written Labels
- Swing Ticketing
- Bar Coding
- Price Boards
- Header Boards

(IV) Documentation- stock inventory, stock sheets, price lists, financial transaction dockets and slips, store policy and procedures manuals, Industry codes of practice, etc.

- Planograms
- Timetables
- Lay-By Slips
- Credit Slips
- Product Return Slips
- Message Pads
- Staff Record Forms
- Wrapping and Packaging Materials
- Manufacturer Instructions

Teaching Methodology

- Interactive Lectures
- Role Play
- Group discussions
- Seminars
- Projects
- Tutorials
- Mock interviews
- Modeling – the performance of an activity by an expert so that students can learn from the expert how that task can/should be done.
- Coaching – a teacher observes a student performing a task and provides helpful feedback in the form of support, modeling, reminders, and suggestions of new tasks which could bring his/her performance closer to that of an expert.
- Scaffolding – support for the students so that they can carry out the tasks.
- Fading – gradual removal of support so that the students finally come to perform their tasks on their own.
- Articulation – means for providing students the opportunity to articulate their reasoning and their problem solving strategies.
- Reflection – any technique that allows students to compare their own problem solving process with that of an expert or another student, and ultimately an internal model of expertise.
- Exploration – any devise that pushes the students into a mode of problem solving on their own.

Industry Specific Training

Training should cover contemporary retail practices, merchandising, point of sale, and inventory management.

Evidence

Performance evidence can take the form of the following:

Direct observation of practice by a qualified assessor for specific units

Simulated activity may be used, within a retail setting itself for assessment purposes to allow candidates to demonstrate emergency drills, evacuation and accident procedures as part of the Health and Safety Units.

Group work can be used as evidence, but the candidate's contribution must be identified clearly.

Questioning the candidate

Written test

Rating a Candidate as Competent or Not Yet Competent

Example of Rating

Activity	Competent	Not Yet Competent
Talking to a customer	Did not interrupt the customer	Interrupted the customer
	Took notes but maintained interest and eye contact	Took notes but did not maintain interest and eye contact
	Asked probing questions to ensure understanding	Displayed boredom or lack of empathy.
	Remained patient when the customer struggled with the problem.	Assisted the customer to overcome the problem.
	Provided complete and clear information to the customer	Provided inadequate information to the customer

Further Reading

ANNEXURE - III

Title	Author	Publisher
Retailing Critical Concepts	Anne M. Findlay, Leigh Sparks	Routledge
Retail Marketing Management 2nd Edition	David Gilbert	Pearson

ANNEXURE IV

Date 31 / 03 / 2011

FACULTY SURVEY FORM

1. Name Kandalwad Vishwambar Dashrath

2. Qualification DEE, AMIE, MECEPS), ADCSSAA

3. Specialization Electrical Engineering & Computer

4. Name of Institute Govt. Tech. Highschool Centre, Parbhani

5. How much should be the percentage of theory and practical in a vocational course on daily / weekly basis?

   30 % Theory 70 % Practical 06 days per week

6. How many students enrolled in vocational courses go for diploma / degree in Universities?

   50'/. Per Year/Batch

7. In which vocational stream students go for higher education? (Technical / Commerce / Agriculture / Paramedical / Business & Commerce / Home Science)

   Technical, Agricutture, Business & commerce

8. How many of your students get employment ? 25'/. % per batch

9. How many students start their own business? 35'/. % per batch

10. What is the gender ratio (Male v/s Female)

    50 % of Males 50 % of Females

11. For which vocational courses there is higher response from girls ?

Commerce, Paramedical & Technical

12. For which vocational courses there is higher response from boys ?

Technical for Urban

Agriculture for Rural.

13. Would you like to go for your own skill development training programs?

Yes [✓] No [ ]

14. Would you like to pursue B. Ed in vocational stream?

Yes [✓] No [ ]

15. Would you like to do research / Ph. d in vocational stream? Yes [✓] No [ ]

16. Would you like to go for consultancy work? Yes [✓] No [ ]

17. Any other feedback?

Vocational education is better as compared to General (Arts/comm/sci) education.

Signature

Name
(Kandalwad V.D.)

Date 29/04/2011

FACULTY SURVEY FORM

1. Name Mr. ADSULE SUNIL BABANRAO

2. Qualification D.E.T.E, B.A.

3. Specialization Electronics & Telecommunication Engg.

4. Name of Institute Modern Highschool & Jr. college, Pune-53.

5. How much should be the percentage of theory and practical in a vocational course on daily / weekly basis?

30 % Theory 70 % Practical ~~Every~~ Daily. days per week

6. How many students enrolled in vocational courses go for diploma / ~~degree~~ in Universities?

8-10 students out of 25 every year

7. In which vocational stream students go for higher education? (Technical / Commerce / Agriculture / Paramedical / Business & Commerce / Home Science)

Technical - Electronics Engg.

8. How many of your students get employment ? 40 % per batch

9. How many students start their own business? 10 % per batch

10. What is the gender ratio (Male v/s Female)

65 % of Males 35 % of Females

11. For which vocational courses there is higher response from girls ?

Electronics Technology

12. For which vocational courses there is higher response from boys ?

Electronics Technology

13. Would you like to go for your own skill development training programs?

Yes [✓] No [ ]

14. Would you like to pursue B. Ed in vocational stream?

Yes [✓] No [ ]

15. Would you like to do research / Ph. d in vocational stream? Yes [✓] No [ ]

16. Would you like to go for consultancy work? Yes [ ] No [✓]

17. Any other feedback?

Vocational Education should be imparted at all school, Jr college, & Sr college, University level.

Signature

Name

Mr Adsule Sunil B.

Date २ / ५ / २०१९

फॅकल्टी सर्व्हे फॉर्म

१. नांव प्रा. सरोदे एन. एन.

२. शैक्षणिक पात्रता एम.कॉम. (व्यवसाय प्रशासन), बी. एड.

३. विशेष विषय प्रशासने व्यवस्थापण, अकौंटींग अॅन्ड ऑडिटींग

४. शैक्षणिक संस्थेचे नांव एसएसपीएम डे स्कूल अॅन्ड ज्यु. कॉलेज, पुणे-१.

५. शहर पुणे

६. व्यावसायिक शिक्षणामध्ये थेरी आणि प्रॅक्टिकलचे प्रमाण दर दिवशी आणि साप्ताहिक किती असावेत ?

४० % थेरी ६० % प्रॅक्टिकल — दिवस / साप्ताहिक

७. व्यावसायिक शिक्षणामध्ये पदवी आणि पदविकासाठी किती विद्यार्थ्यांनी विद्यापीठामध्ये प्रवेश घेतला आहे?

३५ %

८. व्यावसायिक शिक्षणाच्या कोणत्या शाखेमध्ये विद्यार्थी उच्च शिक्षणासाठी जातात? (टेक्नीकल/कॉमर्स / अॅग्रीकल्चर/पॅरामेडिकल/बिझनेस अॅण्ड कॉमर्स/होम सायन्स)

बिझनेस अॅन्ड कॉमर्स.

९. किती विद्यार्थ्यांना नोकऱ्या मिळतात ? ४० % दर तुकडी

१०. किती विद्यार्थी स्वत:चा व्यवसाय सुरु करतात? २० % दर तुकडी

११. स्त्री आणि पुरुष यांचे प्रमाण किती? (स्त्री / पुरुष)

१०० % पुरुष ३० % स्त्रिया

१२. कोणत्या व्यावसायिक शिक्षणासाठी स्त्रिया जास्त प्राधान्य देतात?

ऑफिस मॅनेजमेंट, अकौंटिंग इ.

१३. कोणत्या व्यावसायिक शिक्षणासाठी पुरुष जास्त प्राधान्य देतात?

ऑफिस मॅनेजमेंट, अकौंटींग अॅन्ड ऑडिटींग.

१४. तुम्हाला तुमच्यातील कौशल्य विकसित करण्यासाठी आणि टिचर ट्रेनिंग प्रोग्रामसाठी प्रशिक्षण घेण्यास आवडेल का?

होय ☑ नाही ☐

१५. व्यावसायिक शिक्षणामध्ये तुम्हास बी.एड करण्याची इच्छा आहे का?

होय ☑ नाही ☐

१६. व्यावसायिक शिक्षणामध्ये तुम्हास संशोधन/डॉक्टरेट करण्यास आवडेल का?

होय ☑ नाही ☐

१७. जर व्यवसाय शिक्षण विद्यापीठाची स्थापना झाली तर आयटीआय व उच्च माध्यमिक स्तरातील विद्यार्थी हे व्यवसायिक शिक्षणास प्रवेश घेतील का?

होय ☑ नाही ☐

१८. तुम्हाला सल्ला देण्याचे काम करावयास आवडेल का? होय ☑ नाही ☐

१९. व्यवसाय शिक्षण विद्यापीठांतर्गत कोणत्या प्रकारचे पदवी अभ्यासक्रम असावा ?

ऑफिस मॅनेजमेंट, अकौंटिंग ॲन्ड ऑडिटिंग

२० तुम्ही याव्यतिरिक्त आणखी काही माहिती देऊ इच्छिता?

सही

नाव 27/7/2011

Date 02/07/2011

फॅकल्टी सर्व्हे फॉर्म

१. नांव _____

२. शैक्षणिक पात्रता _____ (Travel & Tourism)

३. विशेष विषय Geography - भूगोल

४. शैक्षणिक संस्थेचे नांव _____

५. शहर _____

६. व्यावसायिक शिक्षणामध्ये थेरी आणि प्रॅक्टिकलचे प्रमाण दर दिवशी आणि साप्ताहिक किती असावेत ?

40 % थेरी 60 % प्रॅक्टिकल _____ दिवस / साप्ताहिक

७. व्यावसायिक शिक्षणामध्ये पदवी आणि पदविकासाठी किती विद्यार्थ्यांनी विद्यापीठामध्ये प्रवेश घेतला आहे?

50%

८. व्यावसायिक शिक्षणाच्या कोणत्या शाखेमध्ये विद्यार्थी उच्च शिक्षणासाठी जातात?
(टेक्नीकल/कॉमर्स / ॲग्रीकल्चर/पॅरामेडिकल/बिझनेस ॲण्ड कॉमर्स/होम सायन्स)

_____

९. किती विद्यार्थ्यांना नोकऱ्या मिळतात ? 5 % दर तुकडी

१०. किती विद्यार्थी स्वत:चा व्यवसाय सुरु करतात? 5 % दर तुकडी

११. स्त्री आणि पुरुष यांचे प्रमाण किती? (स्त्री / पुरुष)

८० % पुरुष   २० % स्त्रिया

१२. कोणत्या व्यावसायिक शिक्षणासाठी स्त्रिया जास्त प्राधान्य देतात?

पर्सनल/ ब्युटी टेलरिंग व कटिंग, मार्केटिंग

१३. कोणत्या व्यावसायिक शिक्षणासाठी पुरुष जास्त प्राधान्य देतात?

बिझनेस — MBA..

१४. तुम्हाला तुमच्यातील कौशल्य विकसित करण्यासाठी आणि टिचर ट्रेनिंग प्रोग्रामसाठी प्रशिक्षण घेण्यास आवडेल का?

होय ☑ नाही ☐

१५. व्यावसायिक शिक्षणामध्ये तुम्हास बी.एड करण्याची इच्छा आहे का?

होय ☑ नाही ☐

१६. व्यावसायिक शिक्षणामध्ये तुम्हास संशोधन/डॉक्टरेट करण्यास आवडेल का?

होय ☑ नाही ☐

१७. जर व्यवसाय शिक्षण विद्यापीठाची स्थापना झाली तर आयटीआय व उच्च माध्यमिक स्तरातील विद्यार्थी हे व्यावसायिक शिक्षणास प्रवेश घेतील का?

होय ☑ नाही ☐

१८. तुम्हाला सल्ला देण्याचे काम करावयास आवडेल का? होय ☑ नाही ☐

१९. व्यवसाय शिक्षण विद्यापीठांतर्गत कोणत्या प्रकारचे पदवी अभ्यासक्रम असावा ?

उद्योगाशी संबंधीत

२० तुम्ही याव्यतिरिक्त आणखी काही माहिती देऊ इच्छिता?

पर्यटन विषयी संपूर्ण माहिती आहे

about Tourism

सही

नाव

Gosavi M. G.

Instructor

T. T.

विद्यार्थी सर्वेक्षण अर्ज

१. नाव कल्पना राजकुमार खाडे

२. कोर्स ड्रेस मेकिंग

३. संस्थेचे नांव औद्योगिक प्रशिक्षण संस्था, दापोली

४. शैक्षणिक पात्रता ग्रॅज्युएशन पूर्ण

आठवी पेक्षा कमी ☐ १० वी पास ☐ १२ वी पास ☐

५. शिक्षणाचे माध्यम

मराठी ☑ हिंदी ☐ इंग्रजी ☐

६. आपणास कॉम्प्युटरचा उपयोग करता येतो काय ? होय ☑ नाही ☐

७. कुंटुबाचे मासीक उत्पन्न 15 हजार ---------- दरमहा

८. आपणास उच्च शिक्षणाची आवड आहे काय ?

डिप्लोमा ☑ पदवी ☐ पदवीत्तर ☐

९. तुम्ही व्यवसाय शिक्षणात एखादा अभ्यासक्रम करु इच्छीता का ?

होय

१०. तुम्ही तुमचा स्वत:चा व्यवसाय करु इच्छिता काय ? होय ☑ नाही ☐

११. तुम्ही नोकरच्या शोधात आहात काय होय ? होय [✓] नाही [ ]

१२. तुम्ही आपल्या व्यावसायीक अभ्यासक्रमात किती वेळ देऊ शकता ?

4 ---------- तास 1 ---------- आठवडयात एक दिवस

१३. तुम्हाला मिळणाऱ्या प्रशिक्षणाची गुणवत्ता कशी पसंद कराल ?

आम्हाला मिळणाऱ्या प्रशिक्षणात थियरी व प्रॅक्टीकल ज्ञानेचे आहे. या दृष्टीने कॉम्प्यूटर ज्ञान असणे आवश्यक

१४. प्रशिक्षणासाठी आपण कारखान्यात जाऊ इच्छिता काय ? होय [✓] नाही [ ]

१५. होय असेल तर कौती तास / दिवस / आठवडे

3 ---------- तास 4 ---------- सप्ताहामधील दिवस

१६. नाही असेल तर प्रशिक्षणासाठी कारखान्यात जाणे पसंद कराल? होय [ ] नाही [✓]

१७ इतर काही समस्या आहे काय ?

काही नवीन शिक्षणामध्ये शिकण्यासाठी तसेच नोकरीची व नवीन काही तरी करण्याची आवड आहे परंतू काही कारणांमुळे पूर्ण लक्ष देऊ शकत नाही.

१८. इतर काही अभिप्राय.

या प्रशिक्षणात येऊन नविन तसेच खूप काही शिकायला मिळाले त्यासाठी 'Thanks'

अर्जदाराची सही

विद्यार्थी सर्वेक्षण अर्ज

१. नाव कु. राजश्री आत्माराम लोखंडे

२. कोर्स क्रॉप सायन्स

३. संस्थेचे नांव देऊळगाव राजा कनिष्ठ महाविद्यालय देऊळगाव राजा

४. शैक्षणिक पात्रता

आठवी पेक्षा कमी ☐ १० वी पास ☐ १२ वी पास ☑

५. शिक्षणाचे माध्यम

मराठी ☑ हिंदी ☐ इंग्रजी ☐

६. आपणास कॉम्प्युटरचा उपयोग करता येतो काय ? होय ☑ नाही ☐

७. कुंटुबाचे मासीक उत्पन्न 5000 दरमहा

८. आपणास उच्च शिक्षणाची आवड आहे काय ?

डिप्लोमा ☐ पदवी ☑ पदवीत्तर ☒

९. तुम्ही व्यवसाय शिक्षणात एखादा अभ्यासक्रम करु इच्छीता का ?

व्यवसाय शिक्षणात पदवी अभ्यासक्रम करू इच्छितो (क्रॉप सायन्स)

१०. तुम्ही तुमचा स्वतःचा व्यवसाय करु इच्छिता काय ? होय ☑ नाही ☐

११. तुम्ही नोकरच्या शोधात आहात काय होय ? होय ☑ नाही ☐

१२. तुम्ही आपल्या व्यावसायीक अभ्यासक्रमात किती वेळ देऊ शकता ?

-----2------- तास -----1 दिवस आठवडयात एक दिवस

१३. तुम्हाला मिळणाऱ्या प्रशिक्षणाचा गुणवत्ता कशी पसंद कराल ?

व्यावसाय आधिमुख प्रशिक्षण कामाचा अनुभव देणारे व्यवहार उपयोगी असावे

१४. प्रशिक्षणासाठी आपण कारखान्यात जाऊ इच्छिता काय ? होय ☑ नाही ☐

१५. होय असेल तर कीती तास / दिवस / आठवडे

-----2------- तास 1 दिवस----- सप्ताहामधील दिवस

१६. नाही असेल तर प्रशिक्षणासाठी कारखान्यात जाणे पसंद कराल? होय ☑ नाही ☐

१७ इतर काही समस्या आहे काय ?

संबंधीत अभ्यासक्रमावर आधारित शासकीय नोकरीसाठी सेवानियम दुरुस्ती करावी

१८. इतर काही अभिप्राय.

ग्रामसेवक, कृषिसहाय्यक व कृषि पर्यवेक्षक पदासाठी प्राधान्य द्यावी BSc अॅग्री साठी प्रवेश द्यावा.

R.A. Lokhande.

अर्जदाराची सही

(R. A. Lokhande.)

Email करण्यासाठी पत्ता -

director@scdl.net

STUDENT SURVEY FORM

Name Padale Sudhir Bhima

Course Auto Engg. Tech.

Name of Institute Modern High School, Ganeshkhind, Pune-53.

Educational Qualification

Below 8th [ ] 10th pass [✓] 12th pass [ ]

Medium of Education

Marathi [✓] Hindi [ ] English [ ]

Can you operate a computer? Yes [✓] No [ ]

Monthly Income of Parents Rs. 15,000/— per month

Are you interested in higher education?

Diploma [✓] Bachelor's Degree [ ] Master's Degree [ ]

You want a degree in which vocational course?

Automobile

Do you want to start your own business? Yes [ ] No [✓]

Do you want to seek a job ? Yes [✓] No [ ]

In your course, how many hours of practical training do you have ?

32 hrs 7 days in a week

How is the quality of training being provided?

Automobile CP, O.J.T., Garage work in School (service station)

Do you go to an industry for training? Yes [✓] No [ ]

If yes, how many hours / days in a week

40 hrs 7 days in a week

If no, would you like to go to an industry for training? Yes [✓] No [ ]

42 hrs 7 days in a week

Any other problems?

No.

Any other feedback ?

No.

Date 31/03/2011

STUDENT SURVEY FORM

1. Name Bhoj vishal yadav

2. Course COPA

3. Name of Institute I-T-I - Pathari

4. Educational Qualification

   Below 8th ☐ 10th pass ☐ 12th pass ☑

5. Medium of Education

   Marathi ☑ Hindi ☐ English ☐

6. Can you operate a computer? Yes ☑ No ☐

7. Monthly Income of Parents Rs. 5000/- per month

8. Are you interested in higher education?

   Diploma ☑ Bachelor's Degree ☐ Master's Degree ☑

9. You want a degree in which vocational course?

   Computer

10. Do you want to start your own business? Yes ☑ No ☐

11. Do you want to seek a job? Yes [✓] No [ ]

12. In your course, how many hours of practical training do you have ?

24 hrs 6 days in a week

13. How is the quality of training being provided?

Best vocational training quality as per international level.

14. Do you go to an industry for training? Yes [✓] No [ ]

15. If yes, how many hours / days in a week

72 hrs 6 days in a week

16. If no, would you like to go to an industry for training? Yes [✓] No [ ]

8 Hrs 6 days in a week

17. Any other problems?

well iequiped and furnished lab must be made available. clone and pure water and foundry quality made available in the institute.

18. Any other feedback?

Best decision of government and for students like us.

Bhoj Vishal Yadav