CHAPTER 5

RESEARCH FINDINGS

OBJECTIVE AND DEVELOPMENT OF NVQF

In this chapter we have summarized the findings that emerge from research analysis of objectives of our study and which will help up to develop a pragmatic National Vocational Qualification Framework (NVQF) suitable to achieve our economic goal.

5.1 FINDINGS- ISSUES AND CHALLENGES OF VOCATIONAL EDUCATION IN INDIA (RESEARCH OBJECTIVE 1)

A thorough analysis of the existing system has identified following weak areas which need to be addressed to design a pragmatic NVQF system.

Planning and operational bottle necks

Capacity bottle necks

Research Gaps from stake holder's point of view to understand the ground realities

Delivery Short fall by analyzing data of last three years, target v/s performance at National level

5.2 FINDINGS–ASSESSMENT OF VOCATIONAL EDUCATION IN POWER DISTRIBUTION SECTOR IN COUNTRY (RESEARCH OBJECTIVE 2a)

In order to access the performance of power distribution Industry we undertook a case study of relative performance review of BSES Rajdhani Ltd. (Delhi) and – Dakshin Haryana Bijli Vitran Nigam (DHBVN) a private public utility v/s Govt. run public utility so as to understand the relative merits of two business models being used in the Country detail report is annexed as a separate study. The Summary of findings is annexed under chapter 4.

5.3 FINDINGS -COMPARATIVE STUDY OF VOCATIONAL EDUCATION IN FIVE ADVANCED FOREIGN COUNTRIES (RESEARCH OBJECTIVE 2b)

In order to understand the global practices in skill development to serve as role model in designing a suitable system for our Country, a relative evaluation of VE in five industrially advanced countries - China, Japan and Korea, Germany, UK was undertaken on the following important parameters. The summary of the finding is annexed in this study-

National philosophy and work culture

Percentage of VE in education and career growth and policy planning

Implementation philosophy

No. of trades / career growth

Relative ranking

5.4 FINDINGS–DEVELOPMENT OF NATIONAL VOCATIONAL QUALIFICATION FRAMEWORK- NVQF (RESEARCH OBJECTIVE 2)

Based on input of above data to develop a framework of effective NVQF to meet the targeted economic growth and global competitiveness for better comprehension the system has been design under four broad headings

Conceptual Frame work-Deals with Planning/ aspect of Vocational programs

Operational Mechanism-Deals with implementation of Vocational programs

Maintenance Mechanism-Establishing Strong .NVQF Network, to efficiently run the system

Proposed Vocational Structure-Vocational University, Boards, Councils

5.1 FINDINGS- ISSUES AND CHALLENGES OF VOCATIONAL EDUCATION IN INDIA

Planning and operational bottle necks

Existing structure is highly inadequate to meet the market demand it is imparted through two structural streams of formal and informal systems. Formal barely covers 20% of total requirements- progress during last 5 decades have been totally inadequate both qualitatively and quantitatively and is the most serious bottleneck. Informal is around 80% and contributes to poor training resulting in low skills and low productivity and adversely affects the national economy.

Enrolment in schools in VE Streams is barely 5% against a target of 15% - 20% besides quality levels are substandard due to lack of standardization and absence of NVQF to regulate delivery and Quality. Similar figures in advanced countries as shown in the comparative table range from 60 to 90%.

Private industry participation is minimal due to lack of policy incentives.

VE treated socially inferior, low wages without much scope for vertical mobility /Career growth generally considered as last career option and thus not opted by good students this is one of the major causes of poor outcomes of vocational education.

Capacity Analysis and related bottleneck

Based on secondary data/reports of $11^{th}/12^{th}$, 5 year Plans and 17 different ministries which administer skill development programs, vocational training plans aggregate to 15million per year, thus sizing up vocational capacity needed at National levels.

Around 3000-3500 skills are needed to meet the growing need of service industry which is growing more than twice our GDP growth VE to be dispensed through Professional bodies under PP model to take advantage of infrastructure strength of Government and Professional acumen of Large Business houses to impart Quality education as per market needs.

Stake Holders Analysis

Primary Research-Based on discussions with Senior Functionaries Of National Skill Development Corporation, National Industrial Associations like FICCI and CII to understand the ground realities in country, ten stakeholders were chosen for analysis through structured interviews the summary is placed as under. Overall findings and summation of field survey show that the-vocational education was found lacking by most respondents.

Major areas of concern are-

Large Scale Industry **–**Maruti Udyog Ltd. Largest Auto Co to understand Japanese VE practices and its successful implementation in Indian environment.

Medium Scale Industry –Sandhar Technology Ltd have 7 Engineering Units in Gurgaon, total turnover 1000 crores per annum, employees 2500 in number.

Small Scale Industry - Two units-one in electrical, other in Mechanical field Workmen strength 50-60 nos, turnover Rs 2-3crores per annum

Industrial Association-Leading association with over 500 members.

Jt. Director Industries Gurgaon– coordinates nearly 2500 small, medium and micro units in Gurgaon District.

Principal IIT Gurgaon – separate for boys and girls, skill training for 1250 students in 23 trade courses.

Auto skill Development Council (ASDC) - one of the 20 high growth segments Identified by NSDC. Skill Training for Auto industry in 25/30 skills through seed capital by NSDC.

Appraisal Rural Vocational Schemes- 6 villages of Gurgaon, Faridabad District of Government sponsored programs of 3/12 months duration like PMRY, KYK, JSS .

Appraisal of NSDC programs- Autonomous body setup by Government to promote skill development in industrial Sectors through PPP model.

Overall Appraisal of Vocational programs in the country during last 3years-Various Department of Government NSDC and private players.

Finding of field survey of Stake Holders-

Vocational education was found lacking by most respondents. Major areas of concern-

Skill Competencies poor /outdated training, needs considerable induction to attain Productivity Standards.

Quality awareness low requires ample retraining to develop required culture-Japanese are Sticklers for this.

Limited Skill options, not updated with changing market needs.

Hardly any Practical training in industry, work as raw hands, take time to settle.

No Soft Skill training as a result lack in communication/ team, work Culture.

Feedback shows that Performance of in house trained School Pass out is found better than ITI trained because of better and whole some training in former system.

Delivery Shortfall of VE- based on Performance data of last 3 years–

Target versus actual performance of National Skill Development Policy our overall progress during past years has been disappointing, averaging to 1/3 of Targets as evident from analysis, needing a total restructuring of Vocational Qualification Framework to make it market friendly –the subject matter of this Study.

Appraisal made of National skill Development Plan of Skilling 500 million workforces by year 2022 i.e. next 10 years**.** Table placed under data analysis, indicates that during 2011-12, capacity creation of is less than 40% of target, in 2010-11, less than 20%. Most of capacity creation is under bureaucratic control at center and state level and performance is poor.(Ministry of Labor & Employment, Annual report , 2011-12)[34]

5.2 FINDINGS AND ACTION PLAN–ASSESSMENT OF PERFORMANCE IN POWER DISTRIBUTION SECTOR IN THE COUNTRY (RO2a)

Estimated Current Manpower Employment Power Sector 5.5 million in generation transmission distribution.

Power Distribution is manpower intensive engages 2/3 manpower ie 3.6 million is subject matter of our Study

Performance of Power sector in last 5 decades is poor, most of utilities run as Government department are inefficient, overstaffed with poor skills and having low productivity, resulting in approximate. Rupees one lac crore losses at national level we are deficit in supply by 10% which goes up to 25% or more in some states, results into huge losses in output/manpower productivity.

Quality of Supply is poor – consumers have to spend considerable cost in protecting equipment

our per capital Power Consumption amongst lowest in world at 850KWhr, 1/3 of world average, 1/20th of US.

Power Distribution losses affecting financial health of Sector. Losses alarmingly high 40% till 80's.improved to 26% by 2010, through incentive schemes and converting into PPP models like in Bombay. Delhi and Calcutta it showed marked improvement to 10%, 16%, Global average 8%, China amazing 5.5%. National target 15% by 2015- does not look feasible BSES brought distribution losses from 52% to 16% by 2012 improvement of 70%

ASSESSMENT OF SKILL REQUIREMENTS IN BSES (RO2a)

There are 20 skills needed in Distribution operations. Out of this-

75% lower level are from common Pool, mostly trained from traditional Channels through in house training / promotions like wire man, line man, electricians, fitters, welders, mechanics, meter readers, Crane operator.

15% are middle level with Strong Tech Skills through Polytechnic/ ITI ,

10% Main stream, come from specialized fields of computerization /instrumentation Balance through highly specialized fields like systems, automation etc.

Major gap is quality of skills and professional management, needs to be bridged through NVQF based training programs covering all aspects of hard and soft skills, team work performance oriented work culture.

Study also shows that distribution utilities should be restructured as JV's with reputed business houses so as to draw best strength of private and government sectors to improve performance as well as service to customers.

Performance oriented compensation schemes to link with team/group incentives.

Important skill development initiatives undertaken by BSES

Putting in place a proper appraisal system with feedback and review.

Open door communication policy.

Proper grievance redressal system.

By setting up a proper training center with systematic plan for regular training of employees to facilitate skill development, up gradation plan put in place to fill 2/3 of vacancies through / internal promotions.

Special programs planned for behavioral changes like customer orientation, teamwork and quality, have helped to improve productivity by 100%.

Best part is that 90% of employees came from earlier Government setup. Implying that improvements came through skill development initiatives which is the basic theme of our studies.

5.3 COMPARATIVE STUDY OF VOCATIONAL EDUCATION IN FIVE ADVANCE FOREIGN COUNTRIES

Highlights /tabular presentation is given under chapter 1

Success of VET as instrument of growth in advanced nations is due to-

Total commitment of all 3 stakeholder viz – Government, Industry, Trade Unions. Delivery and Monitoring of Vocational Education ranges from 60% to 90%, structured in 3 to 5 levels based on skill proficiency esteem / earning potential comparable with academic streams is attractive for students as career options.

Fully integrated with practical training VE's combination of academic, on the job training / apprenticeship System, proficiencies and not merely degree – ample scope for mobility, Multi skilling to improve skills, Career growth.

Inbuilt flexi System for Lifelong learning, higher Earning through Credit System.

There is standardized framework at National level to regulate uniformity to compete in Global environment there is regular R&D to upgrade, curriculums and Competency levels.

5.4 DEVELOPMENT OF NATIONAL VOCATIONAL QUALIFICATION FRAMEWORK – NVQF-OBJECTIVE 2

After analyzing above inputs and due deliberations with stakeholders a pragmatic frame work has been proposed as under-we have done exhaustive appraisal of existing system through research which clearly indicates that existing system is totally outdated to meet market needs.

For better comprehension proposed system is split under 4 broad Groups

Conceptual Frame work-Deals with Planning/ aspect of Vocational programs.

Operational Mechanism-Deals with implementation of Vocational programs.

Maintenance Mechanism-Establishing Strong NVQF Network.

Proposed Vocational Structure-Vocational University, Boards, Councils.

Important Findings of Research Study (objective 2)

Implementation of National Vocational Qualification Framework (NVQF) program through 12 Steps Strategy as under-

5.4.1 Foremost need is to delink VE from Bureaucratic control, hand over implementation to professional/autonomous bodies to manage efficiently. Government to deal with conceptual frame work of planning and financial aspects.

Urgent need is change of outlook and philosophy of positioning VE in our National Policy, by focus on human/behavioral factors through-positioning in terms of social esteem, Career Growth remuneration structure comparable with academics to motivate bright students to opt for Vocational careers

Need to build a positive work attitude through soft skill training to be made integral part of curriculum, so as to build positive work attitude of team work and performance.

VET to have comparative Growth path with Academic Streams- Our study shows that countries with comparable career Path of VET, with academic have achieved faster economic growth. Growth path with Flexibility of Lateral/Vertical movement comparable with academic Stream going to senior levels in organization- Students from Vocational Schools, Polytechnics, ITI's, to be allowed lateral / vertical mobility by providing bridge courses, to widen knowledge base and provide experienced manpower for supervisory roles.

5.4.2 Sizing Skill Development task in country-quantitative perspective

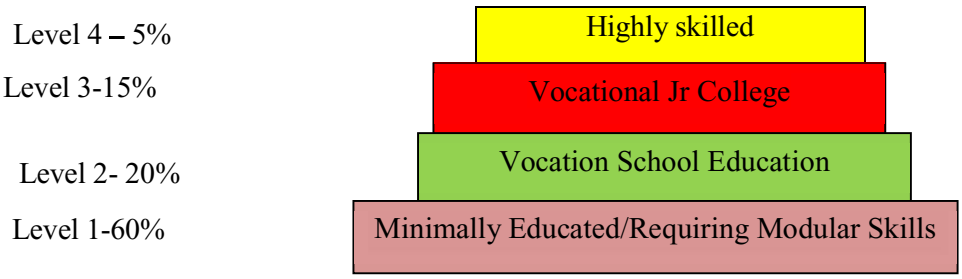
Foremost need to create skill development capacity of 15 million per annum. Skill pool of 500 million by 2022. Magnitude of task can be accessed from data that currently we have skill development capacity of 3.1 million per annum available in 200 odd skills, need to enhance it to 15 million per annum in 4000 odd skills thus resources to be mobilized to create 5 to 20 times skill capabilities

Classification of skill levels, the skill pyramid-qualitative perspective.

The skill requirement can be broken down in 4 levels of competencies, as under-

Level 1, Constitute nearly 60% of workforce, massive 300 million in number, semi-literate, practically unskilled, form bulk of unorganized sector in labor intensive activities like agro, small industries/trade/retail /transport/construction and misc. services. It is major cause of poor productivity and is drag on economic growth, bottleneck for global competitiveness.

Figure 5. 9 Skill Pyramid



Capacity 15 million PA (total 500 million till 2020)

Primary Research with 200 respondents from trade and industries associations, show acute shortage of quality/skilled persons in popular trades of electricians, fitters, mechanics, plumbers, assemblers, masons, machine operators, welders, storekeeper, salesmen, drivers, carpenters etc. majority have been trained through tradition, trial and error systems without much concern for quality. Feedback regarding/quality of training imparted, through existing government channels is poor.

Level 2 and 3 cover middle to upper level of our vocational activities, form backbone of our economic growth. It is clear from the manpower analysis that in working age gap of 15 to 60 years, nearly 1/3 of manpower gets engaged in vocational occupations of level 2 and3, contributes in economic growth. Proposed system must focus on Quality and productivity and multi skilling of these levels. Large organizations prefer to train In house, due to lack of resources, this is done on a limited scale.

Level 4 is peak of the pyramid which is achieved through proficiency majority of workforce in level 1-2 have no opportunity to move to this level due to lack of training facilities Thus no continuity between level 1 to 4, thereby limiting growth and lack of motivation for academically bright to join vocational careers

Appraisal of Existing National VE and training policy we have done exhaustive appraisal of existing system through research which clearly indicates that existing system is totally outdated and not tuned to market needs. It needs a total revamp based on inputs collected during research study and following framework is suggested-

5.4.3 Proposed National Vocational Education Structure -

For better comprehension, proposed system is split under 4 broad headings-,

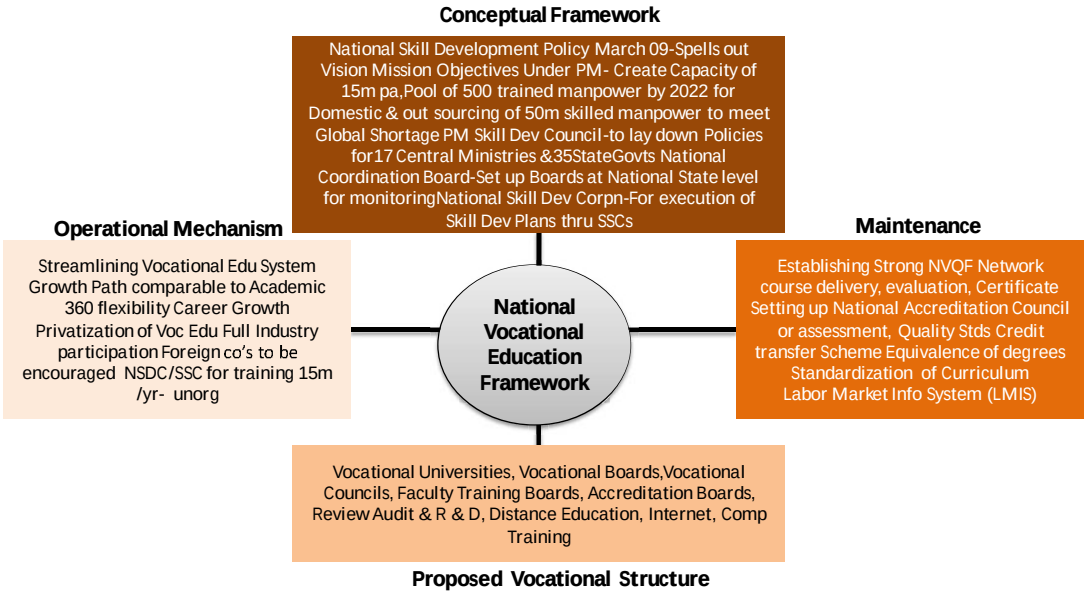
Conceptual frame work deals with planning/ aspect of VE

Operational Mechanism deals with implementation of VE

Maintenance Mechanism establishing strong NVQF network

Proposed Vocational Structure Vocational University, Boards, Councils

Figure 5. 10 Graphic Presentation of Proposed NVQF System



Conceptual Framework to draw an optimal Vocational Plan

Government in last few decades had set up over dozen high powered committees, to study this subject and practices in industrially advanced Countries. Based on recommendations following National Vocational Skill Development policy has been framed.

National Skill Development Policy of March 2009-Keeping in mind, the importance of the subject, Ministry of Labour and employment and HRD, framed the following policy under the chairmanship of Prime Minister to promote VE.

Skill Development Mission- To provide by year 2022 pool of 500 million skilled workers for our domestic economy and create surpluses to meet skill deficits in aging economies to leverage our advantage of demographic dividend.

PMs National Council on skill development at national level, to create skill development capacity of 15 million per annum. Council, to lay down policies for 17 Ministries engaged in skill development programs to achieve the target, to review progress and initiate corrective action.

National Coordination Board Council will be supported by above Board which will coordinate programs between Central Ministries and State Governments State Government will set up state boards to look after activities in the states.

National Skill Development Corporation (NSDC) target is to skill 150 million in next 10 year. Corporation which has identified 20 high growth sectors of industry/services covering 75% of total requirement to provide employment. Action plans are being worked out to meet these goal through various business models, prominently private and public partnership-PPP model

Operational Mechanism

Deals with implementation of Vocational programs which is the

Missing links in operational framework. During course of research it is observed that the outcomes of skill development policy have been poor and it is adversely affecting our economic growth .Our analysis shows following important links are missing which needs to be made good, to become fully effective.

Currently Vocational Education is projected as low cost, low quality inferior to academic model our research shows that over the years, VET under bureaucratic control of 17 Ministries and 35 State Government's, is positioned as a low cost model with, low quality, wages, inferior to academics, meant for lower strata of society, this has adversely impacted skill capability major part of funds get wasted in establishment cost.

This model has failed to deliver, remedy lies in delinking VET from Government control, placing its management in professional hands though an appropriate business model under financial and market linkage of NSDC.

Following business model is suggested.

NSDC operating through Sector Skill Councils have achieved reasonable success during last 3 years it is proposed to expand this concept to take over entire skill development activity even those being managed by Central and State Government's with following organization structure.

Entire skill development work to be distributed under four separate Skill Development Corporation for following major business segments namely

Manufacturing and Engineering Industry

Service industry

Agro Industry

Management of Technical training institutes

Skill Councils, to be set-up For Program implementation as per market need

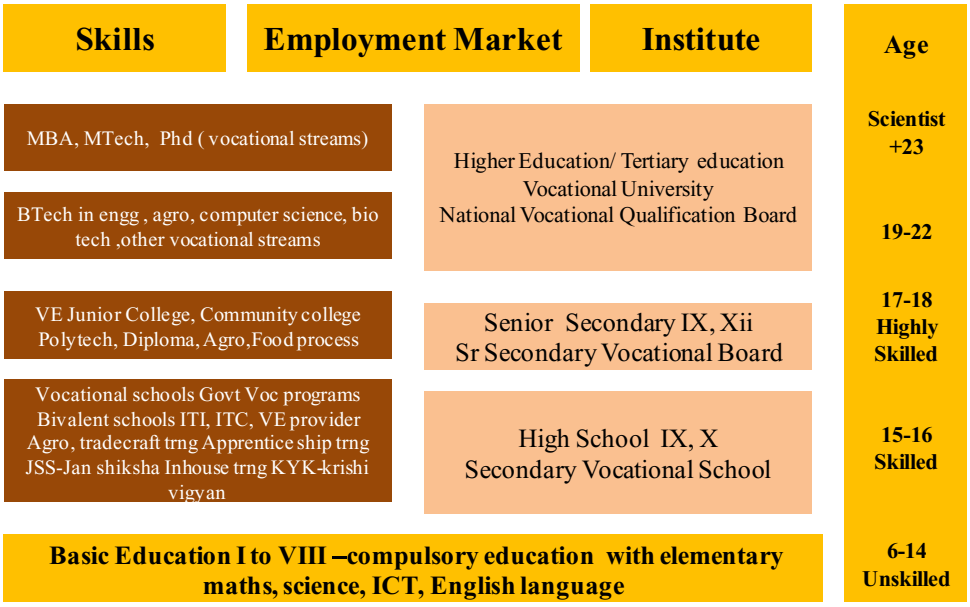
NSDC has Identified 20 Growth Centers in the economy based on exhaustive market research and identified skill gaps for next 10 years to meet economical goals.

Action is already under way to set up sector skill councils under Each Growth Centre to design programs curriculum and organize delivery of skill development programs with help of specialist drawn from industry. Councils will also assist in certification and placements.

Respective ministries (center/state) shall provide policy guidelines, funds, infrastructure to meet targets through respective Skill Development Councils. Both skill corporations and councils would be governed by boards comprising of experienced professionals, who would ensure efficient delivery of development programs with prime responsibility so that quality training is imparted. Council shall also act as nodal agency to coordinate with all stakeholders for optimum utilization of development activities in satisfying the market needs, individual aspirations and above all national goals of economic growth.

5.4.4 Proposed National Vocational Qualification Structure

Graphic Plan Figure 5.11



Management of Technical Training Institutes (ITIs, ITCs, SDCs)

Current status is that 75% of Vocation Education is through Government channels and balance 25% through PPP model there by bringing lot of inefficiency in system. It is strongly recommended that these institutes be brought under umbrella of a separate Skill Development Council/ Consortium of Sector Councils with participation of local industry/associations for delivery of programs.

Vocational structure with 360 flexibility of mobility/growth,

Above structure has been designed- starting from 9th class onwards along with basic academic subjects, with full mobility to enhance employability

Setting up of Sector Skill Council.

It is most effective way of Skill Development- our research shows that on one hand there is strong demand of labor and on other hand we have abundant work force majority of it is unemployable. It is important to address issue of skill gap through closer interaction between industry, government vocational education, by developing curriculum to match industry needs, newer teaching methods, high quality faculty, hands on training and standardization of skills. Council will closely monitor

matching of skills, linked with NVQF, it is proposed to establish 27/30 SSCs to cover practically 100% requirement with focus on quality /employability.

NSDC has identified 20 high growth sectors for setting up Skill Councils-

By mapping of demand supply gaps over next decade it covers 75% of manpower requirement and it could be further extended to remaining sectors of petroleum, energy, agro for fuller coverage. of 100%

Recommended implementation framework for Sector Skill Councils –

SSC's to be set up as independent autonomous bodies at arm's length from government control and work with close participation of stakeholders who work as Public Private Partnership model (PPP)

Strategy to improve industry participation in Vocational Education - Our research clearly shows that major reason of success of VE in industrially advanced countries is due to close participation of industries in hands on training as a universal practice.

In India, we have outdated Apprenticeship Act of 1961, under which only large industrial units employing 500 and above are obliged to impart in plant training to technical hands. Current training capacity is 2.5 lac per annum, about 60% gets utilized and balance gets wasted due to lack of interest in implementation. In last 6 decades industry participation in Vocational Education has been at minimal level with the result that training has remained outdated.

To overcome this **-** Apprenticeship Act to be amended to expand training facility upto medium scale industry as well as service organizations to take training capacity to 2 million per annum from existing of 0.25 million per annum, with quality assessment/ appraisal through NVQF.

Skill Development initiative by Modi Government

It is encouraging that in order to promote employability amongst youth in age group of 15-25 years Modi Government has setup a skill ministry along with entrepreneurship and youth affairs at Central Government level, the target will be to skill 500 million people by year 2022 in a period of 10 years starting from year 2012 to 2022 averaging to 50 million year a massive task.

As a initial step government is trying to promote skill development through public and private partnership through NSDC which will give seed capital to private sector and industrial associations in different segment of industry like automotive,

retail hospitality tourism etc., though a modest beginning has been made and currently nearly one million workers get short duration training of 1-6 months of these skills but the pace needs to be accelerated to cover more segments.

Besides a fresh initiative is being taken by implementation of new company law which mandates 2% of net profit for Corporate Social Responsibility (CSR) this would generate approximately annual funding of Rs. 20,000 crores which would mostly be channelized for promoting skill development at industry level. This is a encouraging initiating in line with the international practices and would train approximately 1 million workers per year.

Our target at national level would be to take the current training level of approximately 5 million per year to 15 million per year for training fresh trainees and similar numbers of short term training in service industry like, Retail, Construction workers, Hospitality, Paramedical, Tourism, Infrastructure and IT Services.

We almost need similar capacity for re-training/upgrading the skills of existing work force of 500 millions most of whom have not undergone formal training.

To sum up training and development should become integral part of our work culture like in countries like Korea, Japan and China which have achieved phenomenal success during last 20 years in skill development and have attained leadership role in Electronics and Engineering field at global level, we need to replicate this.

Modi Government's fast tracking improvements in labor laws

There is welcome move recently to amend the basic law like Factory Act 1948, Apprenticeship Act 1961 and Labor Law Act 1988 to make improvements in industrial establishments briefly changes proposed are-

1. Doubling of overtime limit to 100 hours per quarter.
2. Exemption from registration firms employing upto 40 workers, from existing of 20
3. Relaxation of night shift working of women in factory
4. Reduction of annual pay leave to 90 days from 240 days
5. Lunch Room / Canteen for workers limit brought down from 150 to 75 numbers
6. Under Apprenticeship Apprentices allowed upto small scale industry ranging from- with stipend of 70% in the 1st year to 90% in the 3rd year of semi skill wages.

7. Small scale industries to be allowed to file one compliance return for 16 labor laws this will help thousands of small industries from filling multiple return.

   The above developments have come after 60years of long wait and are being welcomed by industries all over the country.

   The above amendments will go a long way in improving day to day working of industrial establishments and will help improving working climate.

5.4.5 Industrial houses to be mandated through Statutory and monetary measures like tax incentive to set up training centers.

For conducting courses like in Germany, Japan, UK-Potential source of boosting Skill Development activity, to be harnessed

IT industry like TCS, Infosys, Wipro and several others have set-up World Class training centers and achieved phenomenal success. MNCs in India are also following similar practice and putting prospective employees through behavioral training to build positive attitudes at work through policy initiative Government needs to encourage this-it is to note that recently HRD Minister wrote to 100 big companies to extend help in setting up 2500 schools in backward areas and response has been encouraging. Need to replicate this model and make movement a National Success.

5.4.6 Involvement of Private Educational Institutes/Universities/Social Groups which provide quality education to nearly 2/3 of academic streams. The Government to mandate them through policy initiatives to actively participate in vocational programs by allocating certain capacity for VE Say 20-25% for imparting Soft/Service/IT Skills comprising for nearly25% of skill demand in country.

Foreign Firms in training field to be encouraged through a planned system to impart World Class programs especially to cater to global demand.

In India NSDC is developing PPP models with industrial associations, training and education providers for imparting specialized skills. In different domain areas

Maintenance/Monitoring Mechanism

Deals with quality/regulatory/uniformity of standards under umbrella of National Vocational Qualification Frame work

Proposed Vocational Structure delivery system with 360 degree mobility

to maintain a close watch on quality and standards, it is important that a reliable monitoring mechanism is in place.

Setting up strong National Vocational Qualification Framework

NVQF System to be linked with all programs, for course delivery, evaluation and certification to ensure uniform quality .Our studies reveal that advanced Countries have strengthened Skill Development activity by building strong/effective NVQF

Under NVQF to make provision of degrees diploma's, certificates, for lateral/ vertical mobility from secondary to higher education.

Special attention to be paid to Agro Sector where training to be augmented to reach global standards through cooperatives, Village Chaupals supported by retail chains, Business Houses.

Setting up of Vocational Universities, boards at State, Regional level

Under NVQF-proposed to set up National Vocational assessment and accreditation council (NVAAC) to formulate regulatory/curriculum/quality/standard framework, starting from SSC vocational from 9^{th} grade onwards moving to HSC (V), BA (V), MA(V) besides technical certificates already being awarded in ITI's/ ITC's /, Diploma courses.

Schools in rural areas to have special vocational courses for Rural/Agro Markets, like implements, tractor, bike, jeep mechanics, drivers, masons, electricians tailors, crop-management, horticulture, modern irrigation systems etc. Due to lack of infrastructure currently skills get imparted through traditional mode resulting low caliber and wastage of manpower

5.4.7 Recommended Functional Structure of VE

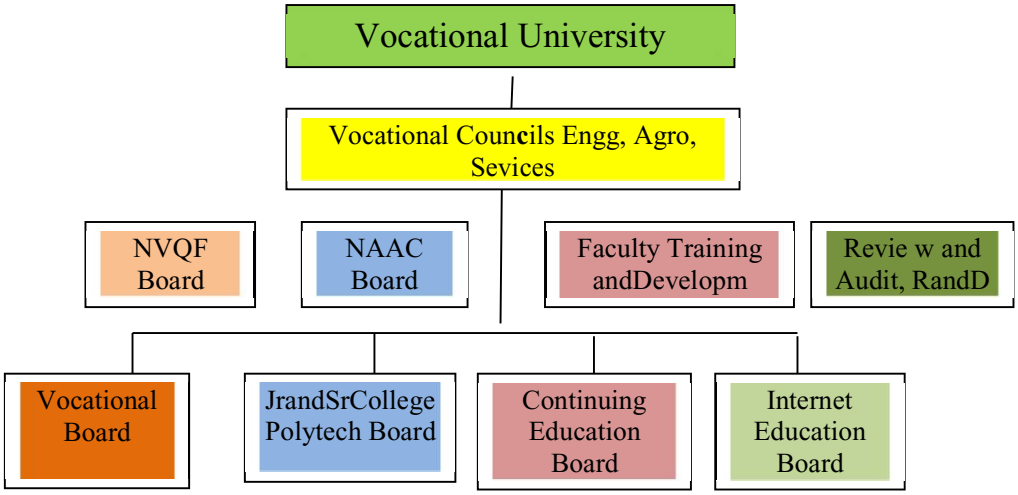
Due to poor delivery of Government Schemes majority of rural students more than 50%, neither pick up academic nor vocational skills. They enter work force as unskilled worker in unorganized sector, and migrate to urban areas for survival. Therefore it is necessary that Rural Vocational Schools through active participation of private players, should build strong skill base to ensure local employability, like in china where more than 50% of rural youth go through rigorous VET to make them employable in rural occupations.

In order to give importance to vocational education, it is strongly recommended that-University will have credit banking and transfer systems with multi entry and multi exits for students to pursue lifelong learning and skill development.

Teachers Training– vocational university will have a separate department to handle teachers training and development like BVD and MVD- Bachelors & Master's Degree in Vocational Education.

Regulation and monitoring of quality, standardization and accreditation will be the prime role of the university and its Governing body through NVQF Boards.

Figure 5. 12 Recommended Functional Structure of VE in India



Vocational Universities/ Boards be set up at state level or regional level to monitor education from higher secondary onwards from, ITI, ITC's higher education of diplomas, Graduation and post-graduation in vocational streams as proposed in Vocational Structure. Such universities should have a governing body consisting of representatives of industry, government/skill specialists. Head of university should be with high level of vocational experience.

Vocational University will create and offer diplomas, degrees upto doctorate level as per market needs assessed through feedback from business and industry Vocational University shall emphasize special focus on skilled based training, to offer lifelong learning.

The university may provide affiliation to HSEV, community colleges, polytechnics and other schemes to pursue higher vocational education.

5.4.8 Plugging the biggest gap- effective training system for unorganized sector through modular/ employable skills development schemes (MES)

Comprise largest size of workforce nearly 80%, mostly in Level 1,2, perhaps most neglected segment. Since they form the baseline of our industrial and service sectors,

special attention need to be paid for their development, improve overall quality of the system. Following steps are recommended.

Under umbrella of NVQF to ensure uniform quality, NSDC and sector SSCs to work as nodal agencies for organizing part time/ weekend skill programs ranging 3 to 12 months arranged through ITIs, ITCs, Vocational institutes Polytechnic, local industries, associations, NGOs with proper monitoring credit accumulation system is recommended for working persons specially for unorganized workers who have considerable experience. Through part time programs, be allowed to do credit courses and qualify for SSC (V) till graduation or qualify for ITI, Diploma course.

All Programs to be regulated for quality through Accreditation Council

5.4.9 Faulty training and development for vocational education

In order to ensure quality for Vocational Education, special attention should be paid to teachers training by creating special programs like Bachelor and Master in VE. Continuous skill development to be done through training programs Scheme to be evolved to get trained professional from industry to teach on part time / rotational basis in the technical institutes this will impart practical orientation. This is a common practice in the foreign countries Remuneration structure generally low. needs to be brought at par with other comparable professions to attract right persons.

5.4.10 Labor Market Information System (LMIS)

In order to precisely match the demand and supply of skills for all segments of economy, it is essential to have a computerized system of labor market information system which should draw out a master plan of training and imparting of skills for all three economic segments of economy namely services including IT, manufacturing and production and agro industry. This program should be implemented through centre and state councils for matching the demand and supply. This would minimize the major complaint brought out by stake holders during research study, that the skills imparted do not match the requirements of market and industry.

LMIS is a mechanism to manage information pertaining to Labor market to helps all stake holders-Govt. ,Industry, Students, Vocational Institutions Purpose is to integrate information to provide a Single Window on Labor. Currently data is compiled through employment exchange which has been set up in major industrial towns by industry department of state governments to regulate demand and supply of skilled labor in the industry.

Over the period this system has proved totally ineffective to serve any useful purpose and needs to be replaced by a modern computerized system linked with business and industrial establishments for an effective two way communication system for training and employment of skilled workforce in different segments of economy NSDC has got study done for designing LMIS tailored for Indian condition. Important features of program are as under-

Active role, support of Government and other stakeholders especially Private Sector **One stop shop for users**. web links, data management e.g. classification Industry demand data, training data, employment data, measurement of efficiency. **NSDC to draw implementation program**

5.4.11 Funding and Financial viability of Vocational education As explained in the study, most of Vocational schemes are run by the Government as highly subsidized, low cost programs which end up into low quality/outdated skills. Our study shows that the Government spends nearly 2 lac crores annually on social subsidies like employment guarantee schemes of minimum 100 days per year, food, fertilizer subsidies etc., the major part of funds get drained in corruption and do not contribute much to value addition to system.

As a part of research study, it is strongly recommended that a small portion of these funds say 25% is allocated to skill development to help in crossing the poverty barriers which is major aim of Social Schemes. Translating into data, assuming we allocate Rs 10000 per annum per capita for Skills, 25%subsidy can help in imparting Skills to 0.5 million, making major contribution in reducing Poverty levels/ improving career opportunities.

Table 5.13 Tabular Comparison of four facets of NVQF

Conceptual Framework	Operation Framework	Monitoring	Vocational Structure
Government framed following VE policy under Chairmanship of PM in March 2009 at 4 levels Skill Development mission – to develop pool of skilled workers - 500 m by 2020 PM's national council - create in 5 yrs skilled development capacity of 15 m PA. Policy guidelines for 17 ministries to achieve above target National Coordination Board – under planning commission to coordinate between center and state govt. for implementation National skill development Corporation – to coordinate with private sector for skill development of 150 m in 10 yrs NSDC identified 20 high growth sectors – for skill development Sector Skill councils – being set up for skill development of above growth centers along with quality standards and certification	Appraisal of existing policy Our research indicates that outcome of development policy were poor as VE has been projected as low cost model with low quality, wages inferior to academics. This has failed to deliver Suggested Business model –delink delivery, monitoring from govt. control place management under professional hands of NSDC under 4 skill councils – for engg industry Service industry Agriculture , horticulture , management of tech institutes Ministries at state/ center to provide Policy guidelines, funds infrastructure Respective councils will be governed by boards of specialists / professionals to impart quality training as per market needs	Research indicate that advanced countries have strengthened Skills, Quality through effective NVQF system To regulate quality standards – establish vocational accreditation council to formulate curriculum quality std from 9th grade onwards till college education Up gradation of skills through Vertical lateral mobility- from secondary to high education through credit transfer distance learning Special Vocational courses for rural agro markets to impart employable skills Special Vocational programs – unorganized sector through part time, distance learning, to update skills Effective LMIS to ensures matching of skills	Setting up Vocational Universities/ Boards To develop a Qualitative VET system –strongly recommended that we set up Vocational Universities / Boards At State / Regional/ National Levels to monitor education from school onwards, ITI's Diploma, degree in Vocational streams University shall develop programs as per market needs, focus on hands on training and work out online and distance education. University will have credit banking cum transfer system to promote lifelong learning and growth Teachers training and development shall be an important role of the university. Regulation of quality, standardization accreditation will be prime function

5.4.12a Role of National Skill Development Corporation NSDC is developing PPP

Models with industrial associations, education providers for imparting skills, schemes to be upgraded by linking with NVQF, to create Capacity of 15m per annum. Identified following 20 high growth business segments -

1 Auto, auto components
2 Building, construction material
3 Building and Construction activity
4 Real estate Services
5 Electronics and IT Hardware
6 Education and Skill Development Services
7 Food Processing
8 Gem and Jeweler
9 Health Car
10 Textiles and Garments
11 Leather and Leather goods
12 Organized Retail
13 Tourism and Hospitality
14 Transport and Logistics
15 Media and Entertainment
16 BFSI
17 Chemical and Pharma
18 Furniture and Furnishing
19 Information Technology
20 IT-IT'ES

Proposal to cover balance important sectors of economy. Such as-

1. Energy and Power Sector
2. Oil Exploration and Petroleum Sector
3. Infrastructure-Rail, Road, Shipping, Transport, Aviation etc.
4. Manufacturing and Engineering Sector
5. Service sectors- Banking, Financial services, Insurance, Services
6. Agro Sector-Agriculture, Horticulture**,** Floriculture and related activities

7. Dairy Farming/Milk Products, Fishery, Poultry, meat Products etc. The above segments practically cover entire spectrum of Business and industry.

5.4.12b Overall Summation of VE Activities in the Country

Skill Development programs are dispensed in the country through the following channels, the pragmatic approach to manage them is as under-

VE through schools

VE through academic colleges/ universities

VE through technical colleges/ universities

VE in industry through Apprenticeship Act1961

VE through Technical institutes-ITIs, SDCs. Tool Rooms, Polytechnics

VE in industry through their own in-house training schemes

VE – through Central Government ministries/ deptts

VE through -State Governments/ deptts

VE- through Institutes of Open and online Learning

VE in Schools

As brought out in the research report most of the foreign countries who have achieved remarkable success in Skill Development, major focus has been, implementation of vocation programs from schooling stage onwards , on an average 50 to 60% students from class 9^{th} onwards pickup vocational streams as a career fortunately the vocational programs are so systematically designed that the students can acquire professional efficiency upto graduation or even post-graduation level this gives them ample opportunity to progress and grow in their career equal or better than the academic streams -this is a great motivating factor for capable students to choose vocational studies as a promising career.

Despite numerous study reports and planning documents in, we have not achieved much success in this direction. More than 60% of our population stays in rular and semi urban areas due to lack of proper infrastructure and growth opportunities hardly 5% students opt for vocation careers. In our country, as against enrollment of 250 million students in schools annually, the level of dropout rate from 1^{st} to 10^{th} standard is estimated around 60%. The expert committees appointed by Government recommended enrollment in vocational stream from class 9^{th} onwards to be planned around 15- 20% , so that the drop out students can be motivated to move to vocational streams and acquire skills in 1-2 years time to earn their livelihood

through efficient skills. In actual practice the skilled ratio has remained below 5%,due to lack of proper training facilities, thereby quality of skill imparted are poor resulting in unemployment after the completion of the courses which makes them unpopular with the masses.

Thus our major focus should be placed on vocational education at schooling stage starting from age of 14-15 and going upto 21 years for different level of competencies in skills coupled with academic education- a combination which. Makes an excellent matrix for vocational development. It is important that these programs need to be properly organized, delivered and monitored to make them marketable.

VE through Academic Colleges / Universities

The scheme could not take roots as it is an extension of the school vocation education which remains unsuccessful for want of proper implementation.

We have recommended separate vocational colleges and universities which will have major subjects of vocational education along with basic education of academic streams like English, Maths, Commerce and Science.

VE through Technical Colleges / Universities

Currently we have more than 1600 colleges/universities imparting degree courses and producing around 1 million engineers per annum in nearly 20 disciplines. The survey conducted by Industrial Associations indicates that only 1/3 of the total numbers produced is employable due to poor quality and practical orientation. The employing organizations have to spend lot of time, energy and cost to make them productive on the job.

We need to reorient our teaching curriculum to suit the market requirements

VE in Industry through Apprenticeship Act 1961

Scheme applicable for industry with more than 500 workmen has training capacity of 2.5 lac per annum due to poor implementation 40% capacity remains unutilized as the training imparted is mostly inadequate and outdated.

It is recommended that training scheme should be brought to medium scale industry with worker strength of 50 and above numbers. It should also include service

industry. This will expand capacity to 2 million per annum and give opportunity to small/ medium industry to impart skills as per industry requirements.

VE in Technical Institutes-ITI's, SDC's. Tool Rooms, Polytechnics The infrastructure available in these institutes can be profitably utilized by creating short term specialized evening/courses of 6 to 12 months duration as part time programs for working persons in the industry.

This will help to upgrade the skills of existing unskilled/semi-skilled workers who do not have opportunity to enhance their skills and knowledge. Currently we have capacity of 4 million per annum in these institutes part time courses upto 25% of the capacity will add another 1 million skilled persons per annum with only marginal additional cost.

V E in Industry through in-House Training Schemes

Most of the large IT industry and manufacturing units of MNC Cos are using this method to train workman as per their requirements. This scheme needs to be encouraged by creating incentive to recruit raw hands and train them for their own needs.

It is high time that, Skill development, be accorded national priority and made essential part of Corporate Social Responsibility-CSR, where a part of annual profits should be mandated by legislation to be spent on Vocational Education

It is encouraging that MODI Government has taken initiatives to amend Apprenticeship Act to make it industry friendly if implemented properly this can create training capacity of about 2 million per annum. Important proposals are-

1. Doubling of overtime limit to 100 hours per qtr.
2. Exemption from registration firms employing upto 40 workers
3. Relaxation of night shift working of women in factory
4. Reduction of annual pay leave to 90 days from 240 days
5. Lunch Room / Canteen for workers limit brought down from 150 to 75
6. Under Apprenticeship Apprentices allowed upto small scale industry ranging from stipend of 70% in 1st year to 90% in the 3rd year of semi skill wages.
7. Small scale industries to be allowed to file one compliance return for 16 labor laws this will help thousands of small industries from filling multiple returns.

The above developments have come after 60years of long wait and are being welcomed by industries all over the country. The amendments will go a long way

in improving day to day working of industrial establishments and will help improving working climate.

V E through Central / State Government Ministries/ Departments

Our surveys show that most of the schemes used in rural areas do not impart quality skills and mostly used for giving temporary stipend/employment/ free training which only adds to the numbers and do not contribute much to skill formation and employability.

As brought out in the study report we have to totally change our philosophy in reorienting these schemes towards skill imparting rather than source of livelihood – the later only keeps this population by and large below the poverty line as it does not enhance the earning capabilities

These schemes to be modernized and administered through professional bodies like Sector Skill Councils to become productive to the society.

VE through Institution of Open and on Line Learning

Has great potential to impart technical/ soft skills meant for service industry .with weekend contact classes this can be a potential source of training, re-training of skills we need to frame suitable policies to tap this resource.

Open and on line schemes are ideal for working people to enhance their professional knowledge through part time programs in spare time without Quitting the jobs, in a flexi system thus promoting the concept of lifelong learning and promoting career opportunities,