CONCEPT NOTE ON NEED FOR VOCATIONALISATION OF EDUCATION IN INDIA

FROM SYMBIOSIS

Introduction

Vocational Education and Training (VET) is an important element of the nation’s education initiative. In order for Vocational Education to play its part effectively in the changing national context and for India to enjoy the fruits of the demographic dividend, there is an urgent need to redefine the critical elements of imparting vocational education and training to make them flexible, contemporary, relevant, inclusive and creative. The Government is well aware of the important role of Vocational education and has already taken a number of important initiatives in this area.

The Objective of this note is to assess and describe the need for introducing Vocational education at higher and tertiary levels and for establishing a Vocational University. The note also summarizes the present Indian and International Vocational Education scenario and its problems. The note also puts up recommendation for policies with the need for implementation at State and National Level and suggests possible models to introduce Vocational Education at the higher / tertiary levels.

Current Scenario of Vocational Education and Training in India

The structure of current education system can be described as below:-
In India, skill acquisition takes place through two basic structural streams – a small formal one and a large informal one. Details of major formal sources are listed in table below-:

<table>
<thead>
<tr>
<th>Type of Source</th>
<th>Institute</th>
<th>Capacity</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mainstream education system</td>
<td>Centrally Sponsored Scheme of Vocationalisation of Secondary Education run by the Ministry of Human Resource Development</td>
<td>Enrolling less than three per cent of students at the upper secondary level</td>
<td>9,583 schools offering about 150 educational courses of two years duration</td>
</tr>
<tr>
<td>Training institutions outside the school and university systems</td>
<td>Industrial Training Institutes (ITIs) and Industrial Training Centres (ITCs)</td>
<td>Total seating capacity of 7.85 lakh</td>
<td>5488 public (ITI) and private (ITC) institutions imparting VET, of which 1922 are ITIs and 3566 are ITCs.</td>
</tr>
<tr>
<td>Diploma level</td>
<td>Polytechnics</td>
<td>1,244 polytechnics run by MHRD with a capacity of over 2.95 lakhs</td>
<td>1,747 AICTE approved diploma programs with 294,370 seats</td>
</tr>
</tbody>
</table>

**Status of Vocational Training received**: The World Bank report of 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) 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-:

![Bar chart showing the percentage of people who received formal vocational training by employment status and location.](source)

*Source: Status of Education and Vocational Training in India, 2004-05, NSS 61st Round*
Comparison with other Countries: There is little capacity in vocational education in India and even that is under-utilized. World Bank Report suggests that the enrolment figure is less than three per cent of the students attending Grades 11-12. This implies that between 350,000 to 400,000 students are enrolled in vocational education, which works out to less than three per cent of the 14 million students or more in Grades 11 and 12, implying 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:-

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

Source: World Bank, 2006

Problem Areas in present Vocational Education and Training System

Through, the study of the prevalent Vocational Education System in India the following problem areas have been identified -:

1. 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:-
2. 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 6800 schools enroll 400,000 students in vocational education schemes utilizing only 40% of the available student capacity in these schools.

3. 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.

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

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

6. 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.

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

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Table 1.6: Levels and Distribution of Educational Attainment (Ages 25 years and Above)\(^{11}\)

<table>
<thead>
<tr>
<th>Country</th>
<th>Average Years of Schooling</th>
<th>No Education</th>
<th>Some Primary</th>
<th>Some Secondary</th>
<th>Some Tertiary</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>4.9</td>
<td>51.0</td>
<td>31.6</td>
<td>11.7</td>
<td>5.7</td>
</tr>
<tr>
<td>Argentina</td>
<td>8.5</td>
<td>5.8</td>
<td>49.6</td>
<td>24.9</td>
<td>19.7</td>
</tr>
<tr>
<td>Brazil</td>
<td>4.6</td>
<td>21.3</td>
<td>56.8</td>
<td>13.5</td>
<td>8.4</td>
</tr>
<tr>
<td>Chile</td>
<td>7.9</td>
<td>5.3</td>
<td>47.9</td>
<td>36.0</td>
<td>15.0</td>
</tr>
<tr>
<td>Mexico</td>
<td>6.7</td>
<td>12.4</td>
<td>47.3</td>
<td>29.0</td>
<td>11.3</td>
</tr>
<tr>
<td>Korea</td>
<td>10.5</td>
<td>8.0</td>
<td>26.6</td>
<td>47.4</td>
<td>25.8</td>
</tr>
<tr>
<td>Malaysia</td>
<td>7.9</td>
<td>13.9</td>
<td>35.6</td>
<td>43.0</td>
<td>7.5</td>
</tr>
<tr>
<td>Singapore</td>
<td>8.1</td>
<td>12.6</td>
<td>28.3</td>
<td>48.5</td>
<td>10.6</td>
</tr>
<tr>
<td>Australia</td>
<td>10.6</td>
<td>1.7</td>
<td>21.1</td>
<td>38.8</td>
<td>29.8</td>
</tr>
<tr>
<td>Norway</td>
<td>11.0</td>
<td>1.2</td>
<td>11.5</td>
<td>62.5</td>
<td>24.8</td>
</tr>
</tbody>
</table>

Source: World Bank database
8. 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.

9. 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. Over 90% of employment in India is in the Informal sector. JSS offers 255 types of vocational courses to 1.5 million people, Community Polytechnics train about 450,000 people within communities annually and NIOS offers 85 courses through 700 providers. None of these programs have been rigorously evaluated, till date.

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

**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-:

![Graph showing various factors affecting labour market](image-url)
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](image)

As indicated above, the high growth sectors are transport, communication, finance, insurance, real estate and business services.

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

**Government Initiatives**

**National Vocational Qualification Framework:** To stimulate and support reforms in skills development and to facilitate nationally standardized and acceptable, international comparability of qualifications, a “National Vocational Qualifications Framework” is being established by the Central Government. Central Advisory Board of Education (CABE) has resolved to set up an inter-ministerial group which would also include 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. NVQF 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.

Analysis of National Vocational Education Framework in Other Countries

Australia

Australia, a country that has had an NQF for many years, has re-introduced vocational courses into schools (entitled ‘VET in Schools’) but the courses have been developed as ‘foundation’ vocational skills already defined 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 may be 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.

<table>
<thead>
<tr>
<th>Secondary School</th>
<th>VET Sector</th>
<th>Higher Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Certificate</td>
<td>Certificate I</td>
<td>Diploma</td>
</tr>
<tr>
<td>Certificate II</td>
<td>Certificate III</td>
<td>Advanced Diploma</td>
</tr>
<tr>
<td>Certificate IV</td>
<td>Diploma</td>
<td>Advanced Diploma</td>
</tr>
<tr>
<td>Diploma</td>
<td>Advanced Diploma</td>
<td></td>
</tr>
<tr>
<td>Bachelor</td>
<td>Graduate Certificate</td>
<td></td>
</tr>
<tr>
<td>Graduate Diploma</td>
<td>Masters Degree</td>
<td></td>
</tr>
<tr>
<td>Doctorate</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

United Kingdom

The National Qualifications Framework (NQF) in UK is a credit transfer system developed for qualifications in England, Wales, Namibia and Northern Ireland. The Framework has nine levels covering all levels of learning in secondary education, further education, vocational, and higher education. Different qualifications are divided into different levels, according to three important frameworks namely, the National Qualification Framework (NQF), the Qualification and Credit Framework (QCF) and last, but not least, the Framework for Higher Education qualifications.

The structure of National Vocational Qualification Framework in UK is as follows:-

<table>
<thead>
<tr>
<th>NQF level</th>
<th>Level criteria</th>
<th>Example qualifications</th>
<th>Equivalent FHEQ qualifications</th>
</tr>
</thead>
</table>
| Level 8   | Level 8 qualifications recognise leading experts or practitioners in a particular field. Learning at this level involves the development of new and creative approaches that extend or redefine existing knowledge or professional practice. | • Level 8 Advanced Professional Diploma  
• Level 8 Advanced Professional Certificate  
• Level 8 Advanced Professional Award | • Doctorates                                                                                  |
| Level 7   | Level 7 qualifications recognise highly developed and complex levels of knowledge which enable the development of in-depth and original responses to complicated and unpredictable problems and situations. Level 7 qualifications are at a level equivalent to **Master's degrees**, postgraduate certificates and postgraduate diplomas. | • Level 7 Advanced Professional Diploma  
• Level 7 Advanced Professional Certificate  
• Level 7 Advanced Professional Award  
• City & Guilds Membership | • **Master's degree**  
• PGDip  
• PGCert  
• Postgraduate Certificate in Education |
<table>
<thead>
<tr>
<th>Level 6</th>
<th>Level 5</th>
<th>Level 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 6 qualifications recognise a specialist high level knowledge of an area of work or study to enable the use of an individual’s own ideas and research in response to complex problems and situations. Level 6 qualifications are at a level equivalent to Bachelor's degrees with honours, graduate certificates and graduate diplomas.</td>
<td>Level 5 qualifications are at a level equivalent to intermediate Higher Education qualifications such as Diplomas of Higher Education, Foundation and other degrees that do not typically provide access to postgraduate programmes.</td>
<td>Level 4 qualifications recognise specialist learning. Learning at this level is appropriate for people working in technical and professional jobs, and/or managing and developing others. Level 4 qualifications are at a level equivalent to Certificates of Higher Education.</td>
</tr>
</tbody>
</table>
| • Level 6 Professional Diploma  
• Level 6 Professional Certificate  
• Level 6 Professional Award  
• City & Guilds Graduateship (awarded at the NQF 6 level)  
• City & Guilds Graduateship (pre-2004 awarded at the NVQ 5 level-Master Doctorate)  
• City & Guilds Associate ship | • Level 5 Professional Diploma  
• Level 5 Professional Certificate | • Level 4 Professional Diploma  
• Level 4 Professional Certificate  
• Level 4 Professional Award  
• International Diploma in Computer Studies (IDCS)  
• NCC Education UK. |
| • Bachelor's degree  
• Graduate Certificate  
• Graduate Diploma  
• Professional Certificate in Education | • Foundation degree | • Certificate of Higher Education |
| Level 3 | • City & Guilds Licentiateship |
| Bouquet of Level 3 qualifications recognise the ability to gain, and where relevant apply a range of knowledge, skills and understanding. It is appropriate for people wishing to go to university, people working independently, or in some areas supervising and training others in their field of work. |
| Level 2 | • A Level  
• AS Level  
• Advanced Diploma  
• National Diploma  
• National Certificate  
• National Award  
• Level 3 Diploma  
• Level 3 Certificate  
• Level 3 Award  
• Level 3 International Certificate in Computer Studies (ICCS)  
• NCC Education UK.  
• Level 3 NVQ |
| Bouquet of Level 2 qualifications recognise the ability to gain a good knowledge and understanding of a subject. Learning at this level involves building knowledge and/or skills in relation to an area of work or a subject area and is appropriate for many job roles. |
| Level 1 | • GCSE at grades A*-C  
• Higher Diploma  
• First Diploma  
• First Certificate  
• Level 2 Diploma  
• Level 2 Certificate  
• Level 2 Award |
| Bouquet of Level 1 qualifications recognise basic knowledge and skills and the ability to apply learning with guidance or supervision. Learning at this level is about activities which mostly relate to everyday situations and may be linked to job |
| Entry Level | Entry level qualifications Learning at this level involves building basic knowledge and skills and is not geared towards specific occupations. | Certificate • Level 2 Award • Level 1 NVQ • City & Guilds, Level 1. | Certificate • Entry Level Certificate • Foundation Diploma • BTEC Level 1 Certificate |

**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 (Zhuankke), 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.

Comparison of Various Education Models
The various models of education and training are illustrated below:-
Proposed Education Model for India

Based on the comparison of various education models across the world, the following education model is recommended for us-:

Recommendations regarding Vocational Education

National Board for Vocational Education

1. A national level Board for vocational education should be established, called as National Board for Vocational Education.

For Example, In Australia, there is a similar authority established by the state and federal government called Australian National Training Authority (structure may vary) which plays a major role in :-

   a) developing a national TVET system and national strategies with respect to vocational education

   b) ensuring close interaction between industries and TVET providers

   c) developing effective training market for public and private needs

   d) enhancing efficiency and productivity of TVET providers
National Vocational Education Policy

2. A National Vocational Policy should be formulated. The policy should establish equivalence for degrees, diplomas and certifications in the vocational education sector for lateral and vertical mobility across various learning sectors that is, secondary, vocational and higher education.

For example, In Sri Lanka, there is a national policy framework on higher education and vocational and technical education. The national vocational qualification framework in Sri Lanka is illustrated below:-

National Vocational Education Assessment and Accreditation Council

3. National Vocational Assessment & Accreditation Council should be established to formulate a regulatory and quality/standards framework.

For example, The National Council for Vocational Qualifications established assessment procedures for qualifications in England, Wales and Northern Ireland. Scottish Qualifications Authority in Scotland is a leading international provider of qualifications and assessment, accreditation and certification. There is similar Council in Hong Kong named Hong Kong Council for Accreditation of Academic and Vocational Qualifications (HKCAAVQ). Sri Lankan’s national policy framework on higher education and vocational and technical education also provides for such a council. In Germany, an accreditation council (Anerkennungsbeirat) has also been established to advise the national
accreditation body and to draft recommendations for accreditation and certification procedures. The framework for accreditation in Germany is as given below:

Introduction of SSC (Vocational)

4. SSC (vocational) or its equivalent 10th grade certification in vocational stream should be created on similar lines as HSC (Vocational) at both national and state level. Vocational Stream should be introduced at 8th Grade through Bivalent Schools which may provide both conventional and vocational stream of education at secondary level. Presently, in India only sporadic courses as electives are being offered to students under bifocal scheme. However, a separate vocational stream offered by means of bivalent schools does not exist. Statistics reveal that employers prefer students with some general education skills in addition to vocational skills. Thus, in all schemes related to SSC (Vocational) general education courses should be emphasized. Eg. Problem Solving, English, Soft Skills, Business Management etc.

For Eg. In China, there are three levels of vocational education: junior secondary, senior secondary and tertiary. Junior vocational education refers to the vocational and technical education after primary school education and is a part of the 9-year compulsory education i.e from age group of 13-15 years.

Credit Banking and Accumulation

In ITI’s and ITC’s or other vocational education providers, a credit banking system can be established to accumulate required credits in order to grant SSC certificate. This will be especially useful for non-
formal and unorganized sectors who do not have any prior formal education. These students in non-formal sector may be allowed to take courses worth requisite credit points to obtain SSC Vocational.

In Philippines, the Non-Formal Education - Accreditation and Equivalency (NFE A&E) System enables Filipinos who are unable to avail education through the formal school system or who have dropped out of formal school, obtain elementary and secondary education. NFE A&E test is a standardized paper- and pencil-based test featuring multiple-choice questions based on the expected learning outcomes articulated in the five learning strands of the NFE A&E Curriculum framework which enables students to obtain secondary level certification.

Lateral/Vertical Mobility

5. To ensure vertical mobility, ITIs, MSBVs, Community Colleges and other State Vocational Education Institutions may be granted recognition and accreditation from the respective State Board for Vocational Education to award SSC (Vocational) certification. Vocational Education Providers, Community Colleges, JSS, CP’s, Vocational Junior Colleges may also be allowed to award Diplomas and Associate Degrees in addition to HSC (Vocational) certification. Students from Vocational Institutions can be given opportunity for lateral mobility into conventional stream by providing bridge (preparatory) courses. The proposed mobility structure is as indicated below:-

For Example, In USA students of community college get entry into conventional colleges and other vocational colleges for Bachelors Programs.
6. 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. Ex: Bachelor in Vocational Studies, BVS.

**For Example,** In Sri Lanka the UnivoTec is a University offering Bachelors degrees in Vocational stream. (Level NVQ 7)

In Germany, vocational university in the federal states of Baden-Württemberg, Saxony, Thuringia and Berlin grant degrees in vocational streams. A course of study at a vocational university consists of six semesters on the “two-track plan,” i.e. university-level coursework combined with on-the-job training in industries. Students can receive their first official job qualification after two years of study. After three years, students can apply for a degree. The education system in Germany is illustrated below:

![Education and Training System in Germany](image)

**Industrial Participation**

7. Private Participation from Industry and other players must be encouraged and is critical for the success of the vocational education growth in India. Industry participation must be at all levels especially in Governance, Curriculum Design, Placements and Funding, Monitoring Outcome. Industry participation is also required for creating production oriented Research and Innovation Labs. A PPP Model can be also created where GOI and Industry can come together to invest in infrastructure and train students in latest skills.
For Example, Penang Skills Development Center is a joint company training center. The Government invests in the center and uses it to carry out public training programs. The State provided the infrastructure and the industry partners donate equipment, labs, training modules and trainers. Industry thus has access to shared training facilities for in-service employees training. The Government uses the center as a training institute.

In India, National Skill Development Corporation India (NSDC) is a one of its kind, Public Private Partnership in India. It aims to promote skill development by catalyzing creation of large, quality, for-profit vocational institutions. Three business models established till date are as under--:

B-Able - Tie ups with corporate like L&T and Tata dealers have been established. Six centres providing classroom training and guaranteed 4 week apprenticeship with a prospective employers have been established.

Gram Tarang - Targeting tribal/naxal affected areas. 4 training centres created to train people in Auto CAD, advanced welding on advance machinery funded by NSDC.

8. Teachers training is an important aspect for ensuring quality education in vocational stream. Vocational Educational Qualifications should be insisted (eg. BVE). Higher salaries must be offered to attract skilled teachers. Additional income incentive can also be given through in-service training programs which can be conducted by teachers for industry employees. Continuous skill development and up-gradation of teachers can be done through Teachers Training Programs conducted by Teacher Training Centers

Salient Features of a Vocational University

1. A Society registered under the Societies Registration Act, 1860 (Central Act No. 21 of 1860); or Any Public Trust registered under the State Public Trusts Act, or the Indian Trusts Act, 1882 (Central Act No. 2 of 1882) or under the relevant laws in any other State or Union Territory or a Company registered under Sec 25 Companies Act 1956. The University may be established by State Government or by Private players (self-financed)

2. Land, construction and infrastructure requirement may focus on the need for creation of production oriented labs, training centers, innovation/testing labs, latest industry specific equipment etc.

3. Authorities of the University shall have active Industry participation. The administers of the University must have industrial experience.
4. Vocational University will offer all kinds of degree and diploma programs in vocational higher education sector (Bachelor, Masters, Doctoral) – New Degrees should be created eg. Bachelors in Vocational Studies

For example, In Germany, some of the examples of vocational degrees offered by Vocational Universities are as under:-

(a) Bachelor in Automotive engineering, Clothing design by Berlin School of Applied Sciences (HTW),

(b) Bachelor of Jewellery and Objects of Daily Life by Pforzheim University of Applied Sciences.

(c) Bachelor of Motor Vehicle Industry, Bachelor of Printing and Media by Munich University of Applied Sciences

(d) Bachelor of Arts in Facilities Air Conditioning by Biberach University of Applied Sciences.

5. Vocational University will emphasize on a different teaching – learning pedagogy with a special focus on skill based and hands-on learning and training. Vocational University may offer vocational programs through online, distance and life-long learning mode.

6. Vocational University Curriculum will emphasize life coping skills and general educational skills such as Liberal arts subjects, English competency, entrepreneur skills, problem solving, team work, leadership, management courses etc.

7. 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.

For Example, in China Educational groups are affiliated to the University and they offer associate degree programs. Structure of a typical Education Group is illustrated below:-
8. The University shall have a well defined Credit Banking and Transfer System. The Credit System will allow multi-entry and multi-exit to students. The Credit System will also enable students to pursue opportunity for life-long learning and skill development.

For example, in Scotland, the Scottish Credit and Qualification Framework (SCQF) is a credit framework that promotes mobility and credit transfer within and between sectors of learning. Similarly, in UK, the National Vocational Qualification Framework simplifies credit transfer between different awarding bodies, especially for vocational qualifications.

9. Industry participation shall be sought on the Board of Management. Industry representatives will be involved in governance and curriculum design. Production oriented Research and Innovation Labs will be setup in collaboration with Industry to promote regional economic growth. Industry collaboration shall be sought for funding, placements and apprenticeship for students. Department of In-Service Training shall be setup to encourage industry to send employees for regular skill development and up-gradation (this will also gain additional income for teachers).

10. 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. A separate degree called Bachelor in Vocational Education (B.V.Ed) or B.Ed with specialization in vocational education is proposed to be introduced. This would be a mandatory requirement for hiring teachers for vocational education and training.
For Example, In United States, Bachelor of Vocational Education degrees are offered for teachers teaching vocational courses. In Sri Lanka, Research Cell of University of Vocational Technology has carried out research study on “Contribution of Instructional Resource Development programs in improving Teaching & Learning environment of TVET Centers”

Conclusion

The industrial and labour market trends clearly indicate the necessity of strengthening of vocational education in India. The introduction of vocational education at secondary level through bivalent schools and SSC (vocational) will enable us to broaden the vocational education base at secondary level of education. A clear pathway for vocational students to enter higher education streams is the way to move forward. Through this concept note we have made an endeavour to provide some of the possible solutions to address these issues. Framing of vocational qualification framework, introduction of vocational degrees and setting up of a Vocational University with polytechnics, community colleges, CPs and other VEPs as affiliated colleges are some of the recommendations which require further deliberation at National and State level.

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