NVEQF: Skill Development under the National Skills Qualifications Framework in India: Imperatives and Challenges

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1 Introduction

The paper reviews the steps taken to integrate vocational education and general education through Vocationalisation of education and skill development initiatives under National Skill Qualification Framework (NSQF) and the challenges that India faces to develop policies and to ensure effective implementation of various schemes and programmes for preparing youth for the world of work and further education and training. It addresses the following challenges:

1. Improving the quality of vocational education and training.[1]
2. Providing greater access to a wide variety of skill development programmes attuned to the needs of individuals and employers.
3. Building seamless pathways for the world of work and further education and training.
4. Preparing a curriculum plan that integrates general education with vocational education in a manner that every student gets an opportunity to acquire knowledge, skills and ability for a smooth transition from school to work.

It is also argued in this paper that making qualifications better is necessary in order to make both academic and vocational education and training (VET) relevant and flexible to meet the needs of learner and employer (Mehrotra 2012). Nationally-defined vocational qualifications can give all at least equal to a national standard and meet the skill needs of the employers. Locally defined qualifications, on the

1 The main objective of vocational education and training is to prepare persons, especially the youth, for the world of work and make them employable for a broad range of occupations in various industries and other economic sectors. It aims at imparting training to persons in very specific fields through providing significant 'hands on' experience for acquiring necessary skill in the specific vocation or trade, which make them employable or help them to avail opportunities of self-employment.

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other hand, may only give this security to those who have access to good educational institutions and receive a certificate issued by an accredited training provider. Vocational qualifications systems also have the potential to improve the link between education and work, to set up new pathways from education into employment and to reduce barriers to learning, for example by using new forms of pedagogy and assessment (Cedefop 2009). To gain additional currency, vocational qualifications must be endorsed by the national qualifications authorities, who in turn have consulted relevant stakeholders. The chapter comprises the following eight main sections:

Section 1 gives an overview of the status of general education, Vocationalisation of education and recognition of non-formal skills development initiatives in India;

Section 2 explains the policy context for integrating academic and vocational education qualifications under the NSQF;

Section 3 focuses on the revised Centrally Sponsored Scheme (CSS) of Vocationalisation of Secondary and Higher Secondary Education under the National Vocational Education Qualifications Framework (now subsumed in NSQF) and discusses its implementation aspects;

Section 4 deals with the role of private-sector led by National Skill Development Corporation (NSDC) and Sector Skill Council (SSC) in the development of the Qualification Packs (QP) and National Occupation Standards (NOS);

Section 5 deals with the development of learning outcome based curriculum packages;

Section 6 deals with the initiatives taken in India for developing a system of further education and training;

Section 7 deals with the initiatives taken to recognise prior learning; and

Section 8 focuses on ways forward and potential areas for improving the implementation of the NSQF in order to promote Vocationalisation of education and strengthening the link between vocational education and the labour market.

2 Status of General Education, Vocationalisation of Education and Non-formal Education and Training System in India

The general education system in India is broadly divided into school education (elementary, secondary, higher secondary level) and higher education (undergraduate and postgraduate level) (see chapter 1, 2, 3, 5 and 6).

2.1 School Education

Elementary education consists of eight years of compulsory education. India has made education a fundamental right of every child with the introduction of the Right to Education (RTE) Act 2009, which came into force on 1st April 2010. According to the Act, schooling is free and compulsory for all children from the age of 6 to 14. Also, *Sarva Shiksha Abhiyan* (SSA), which is Government of India's flagship programme for achievement of Universalisation of Elementary Education (UEE) in a time bound manner, has resulted an increase in enrolment of children of 6-14 years age group (see chapter 2).

According to the 9th Annual Status of Education Report (ASER), enrolment in the 6-14 age groups continues to be very high, with more than 96% of children enrolled in school (ASER Centre 2014). ASER surveyed 550 districts and close to 16,000 villages, 0.33 million households and 0.6 million children in the age group 3-16.

Each of secondary and higher secondary education consists of two years of education and with the launch of Rashtriya Madhyamik Shiksha Abhiyan (RMSA)[2] inMarch 2009, there has been an increase in the access and retention of students at secondary and higher secondary stages. The gross enrolment at secondary level is 63% and 36% at higher secondary level (MHRD 2011a) (see chapter 3). The RMSA seeks to achieve an enrolment rate of 75% within five years, universal access by 2017 and universal retention by 2020. At the higher secondary stage, the education system is divided into academic or vocational education stream or vocational subjects are offered as electives, along with the general education subjects. After completing Grade 12, students (age 17 to 18 years) can opt for apprenticeship training in a public or private industry or further education and training in polytechnics, colleges and universities (see chapter 5, 6 and 11). The minimum age at which most industries or organisations are willing to engage workers is 18 years.

2 RMSA was launched with the aim to provide access to good quality education accessible and affordable to all young persons in the age group 15-16 years. The scheme envisages enhancing the enrolment for Classes IX-X by providing a secondary school within a reasonable distance of every habitation, improving quality of education imparted at secondary level through making all secondary schools conform to prescribed norms, removal of gender, socio-economic and disability barriers, universal access to secondary level education by 2017, and universal retention by 2020. The CSS of ICT at schools, Girls' Hostel, Inclusive Education for Disabled at Secondary Stage and Vocational Education were subsumed under the RMSA from 2013-2014.

2.2 Higher Education

Education provided after completion of school education (12th Grade) is known as higher education, which comprises education in general, and vocational subjects, and professional and technical education. India's Gross Enrolment Ratio (GER) in higher education is 20.4% (provisional report of All India Survey of Higher Education for 2011-12; MHRD 2014) and the aim is to increase it to 21% by the end of the 12th Five Year Plan (2012-2017) and 30% by 2020 (MHRD 2011b) (see chapter 6).

To achieve the target, the Ministry of Human Resource Development (MHRD) has launched *Rashtriya Ucchatar Shiksha Abhiyan* (RUSA)[3] which will promote access and reforms in the higher education system. The increase in access and retention at the elementary, secondary and higher secondary stages of education throw up a huge challenge in terms of demands on the formal education and training systems, including Technical and Vocational Education and Training (TVET)[4].

2.3 Non-formal System of Education and Training

In addition to the formal general education system, a non-formal system of education and training and retraining for skilling, up-skilling, and re-skilling is in place. These skill development programmes aim to match the demand and supply of skills and labour by taking into account surveys that identify current and future skill shortages or gaps within the industry sector (see chapter 12). The workforce

3 RUSA is a CSS launched in 2013 with the aim to provide strategic funding to eligible state higher educational institutions. RUSA is implemented and monitored through an institutional structure comprising the National Mission Authority, Project Approval Board and the National Project Directorate at the centre and the State Higher Education Council and State Project Directorate at the state level. RUSA would create new universities through up-gradation of existing autonomous colleges and conversion of colleges in a cluster. It would create new model degree colleges, new professional colleges and provide infrastructural support to universities and colleges. In order to enhance skill development the existing central scheme of polytechnics has been subsumed within RUSA. A separate component to synergise vocational education with higher education has also been included in RUSA.

4 TVET in India operates at three levels: (i) Certificate level training in various vocational trades, offered by the higher secondary schools and Industrial Training Institutes (ITIs), (ii) Diploma level education and training in a variety of engineering/technological and other vocational disciplines; offered by polytechnics, colleges and universities, and (iii) Undergraduate and Post-graduate level in a number of colleges and universities. Technical education is regulated by the All India Council of Technical Education (AICTE) and the subjects that fall under this include engineering, management, pharmacy, architecture. VET is regulated by various departments under more than 17 ministries. MHRD and Ministry of Labour and Employment (MoL&E) are the main ministries regulating TVET programmes.

at the all-India level was about 459 million as on 1st January 2010 (NSS 66th round), which increased to 472.9 million, as on 1st January 2012 (NSS 68th round; July 2011-June 2012), indicating a growth of about 13.9 million of the workforce at the all-India level between 2010 to 2012 (NSSO 2013). To develop and upgrade skills matched better to labour demand and to meet the future skill needs, the NSDC has, for example, launched STAR scheme (Box 1). This could benefit an estimated 200 million Indians between the ages of 15 and 24 in the context of reaping India's demographic dividend.

Box 1: STAR Scheme for Indian Youth

Standard Training Assessment and Reward (STAR) Scheme was introduced on September 16, 2013 by the National Skill Development Corporation (NSDC) to motivate Indian youth to acquire vocational skills matching industry needs. The objective of the scheme is to encourage skill development for youth by providing monetary rewards for successful completion of approved training programmes. The scheme has been implemented on pan-India basis through Public-Private and Public-Public partnerships and is expected to benefit financially a million people who wish to acquire new skills or upgrade their skills to higher level for better opportunities. Each assessed and certified trainee gets RS. 10,000 to cover training cost. Respective Sector Skills Councils (SSCs) are running this programme under the umbrella of NSDC. The skills are aligned with National Occupation Standards (NOS) that have been developed by Sector Skills Councils. The scheme initially covers only a limited number of high-market-demand job roles in specified economic sectors from Level 1 to 4 in the NSQF. In order to enable the financially disadvantaged to use the award money to fund a part of the training cost, the training providers will allow candidates to pay part of the course fee (minimum 25% of the prescribed fee) and the balance will be paid to the training provider from the monetary award whenever the candidate is eligible for its receipt. However this amount shall not exceed the total amount that the candidate is eligible for. At the time of enrolment for the course, the trainee will have to pay some part of the course fee (minimum 25% of the prescribed fee), so that the candidate has a sustained interest in the completion of the course.

A total of 19,54,300 persons have received job-oriented skills training through NSDC skilling partners since 2010, of which 60% have been placed in different sectors. During 2013-14, NSDC partners trained 10,05,074 people across a wide array of sectors ranging from healthcare, manufacturing, electronics and hardware, tourism, hospitality and travel to banking, financial services, retail, information technology, and textiles in 366 districts. As on 31 March 2014, 3,44,545 trainees have completed their training in 206 courses, with 559 partners in 6402 centres across the country (Economic Survey, July 9, 2014).

3 The Policy Context for the Integration of Academic and Vocational Education under the National Skill Qualification Framework

Vocationalisation of education, which is designed to prepare students for the world of work better than the 'academic' education (Maclean and Pavlova 2013) could provide learners the opportunity to develop competencies required to find a job.

Pavlova (2005) identified three components of Vocationalisation: learning for work (work-related knowledge, practices), learning about work (settings and conditions), and understanding of the nature of work (socio-cultural, economic and political forces that influence work).

In India Vocationalisation of education begins from Grade 1, with skill based activities introduced through the Work Experience or Socially Useful Productive Work (SUPW)[5] programme up to Grade 8. Vocationalisation of education was introduced in India to make provisions for the orientation and exploration of productive skills alongside general academic education throughout the school system of ten years, and to offer Vocational Education Programme (VEP) of two years as an alternative to general academic education at the higher secondary stage. The purpose of Vocationalisation of education is to improve the relevance of education to the world of work and make students more employable. The Programme of Action (1986) of National Policy on Education (1986) emphasised that Vocationalisation of education programme must ensure that at the secondary stage, students are prepared to choose a career. It stressed the development of vocational interests and aptitudes to allow the self-exploration of vocational preferences and to enhance productivity and participation in work. At secondary education level, there is a provision for pre-vocational education[6], but very few states, like Maharashtra, have implemented the pre-vocational education programme. Successful completion of pre-vocational education does not lead to a vocational or technical qualification that is directly relevant to the labour market. According to OECD (2010), vocational and pre-vocational programmes are further divided into two categories (school-based and combined school and work-based programmes) on the basis of the amount of training provided in school, as opposed to the workplace. Programmes are classified as school-based, if at least 75% of the curriculum is presented in the school environment, a proportion which may include distance education. In combined school and work-based programmes less than 75% of the curriculum is presented in the school environment or through distance education.

The Indian Government and all other stakeholders are putting in place policies and legislation to increase the proportion of students undertaking vocational education at the secondary and higher secondary levels and improve the link between vocational education and employment. In 2006, the Government of India

5 The aim of SUPW is to provide children with opportunities of participating in social and economic activities inside and outside the classroom, enabling them to understand scientific principles and processes involved in different types of work and the setting in which they are found in the physical and social environment.

6 Pre-vocational programme provided at the secondary stage facilitate the choice of the vocational course at the higher secondary stage.

declared that a Vocational Education Mission will be set up to overcome skill deficit and to achieve a target of preparing 500 million skilled personnel by the year 2022. However, a recent estimate of the number of people to be skilled reveals that the number of workers entering the workforce each year in India would be 2 million and the projected labour force at 2022 would be around 580 million. Of this, nearly 291 million or around half of the workforce will need to be skilled by 2022 (Mehrotra et al. 2013). The 13-30 age group in the Indian population is growing by 28 million people each year, but there are only about 2.5 million (5%) vocational training places available in the country (MHRD 2011c) which is comparatively too low as compared to other countries. For example in 2010 about half of upper secondary students in the European Union (EU) were enrolled in the vocational stream of education (49.9%). The proportion among male students (55.4%) was significantly higher than among female students (44.2%). Enrolment of female students in the vocational stream was more than 50% in 10 EU Member States. The highest shares (more than 60%) were in Belgium, the Czech Republic, the Netherlands, Austria, Slovakia and Finland. The lowest shares (less than 30%) were reported in Greece, Estonia, Hungary, Latvia, Cyprus and Lithuania. Austria had the highest share of upper secondary students undertaking vocational programmes at 76.8%. Belgium, the Czech Republic and Slovakia recorded more than 70% of upper secondary students in the VET stream. Cyprus (13.2%), Hungary (25.8%) and Lithuania (25.8%) had the lowest shares (all below 30% in 2010) (Cedefop 2013).

In 2007, the MHRD initiated the process of revision of the CSS of Vocationalisation of Secondary Education which was introduced in 1988 to provide funds to the States and to streamline the implementation of the scheme. In 2008, a 'Coordinated Action on Skill Development' with a three-tier institutional structure consisting of the Prime Minister's National Council on Skill Development (NCSD), the National Skill Development Coordination Board (NSDCB) and the NSDC was created to develop an institutional base for skill development at the national level.

3.1 National Policy on Skill Development (NPSD)

In 2009, the Indian government adopted a NPSD, which aims to guide the skills development strategies and initiatives involving all stakeholders including government, industry, employers, trade unions, industry associations, non-government organisations and civil society organisations. The NPSD aims to achieve the target of skilling 500 million people by 2022 through the use of instruments, such as NVQF. The NPSD *inter alia* states

> *"National Vocational Qualification Framework will be created with an open flexible system, which will permit individuals to accumulate their knowledge and skills and convert them through testing and certification into higher diplomas and degrees. NVQF will provide quality-assured learning pathways having standards, comparable with any international qualification framework. NVQF will support lifelong learning, continuous upgradation of skills and knowledge." (MoL&E, 2009)*

Most countries have adopted a National Qualification Framework (NQF) to link different qualifications and to provide a seamless pathway that connects different sectors of education and training. Advanced countries are making upper secondary vocational education more general so that vocational students receive more academic content to broaden their occupational focus, while general education students are given more opportunity to apply academic principles to practical problems (Maclean and Pavlova 2013). Some countries are still choosing to differentiate young people into general and vocational pathways during the later years of compulsory schooling and others are looking at vocational or pre-vocational education as a potential mechanism to reengage young people bored and disaffected by general schooling towards the end of the compulsory phase (Cedefop 2009). Work-based learning, which provides a bridge to the labour market, can aid transition from education to work and contribute to the development of highly relevant skills for the labour market (Cedefop 2013). Work based education and training can develop the knowledge and skills for identifying, selecting, observing, manipulating and participating in work practices, thereby enhancing productive efficiency (Mehrotra 2014a). In Denmark, nearly all upper secondary VET was undertaken in combined work- and school-based programmes (97.4%). The share was also relatively high in Germany (88.4%). Combined work- and school-based programmes accounted for more than 50% of students in upper secondary VET in Hungary (59.6%) and between 30% and 45% in Czech Republic, the Netherlands, Austria and Slovakia. Finland has incorporated on-the-job periods in upper secondary VET qualifications so that students can spend a minimum of 20 weeks in firms, with the aim of improving the transition from school-to-work (Lasonen and Gorden 2008). Analysis by UIS-UNEVOC (2006) demonstrates a trend towards the creation of broad vocational tracks due to changing technologies and work organisation that require workers with multiple skills and flexibility to adapt to a changing labour market. Experience from Europe shows that narrow vocational tracks can become straightjackets for career development. This is aggravated if such tracking begins at an early age, with a premature selection of students into different pathways. India has also experienced this phenomenon, with the introduction of a distinct stream of vocational education at the higher secondary stage, which was terminal in nature and thus affected the vertical mobility of the vocational students. Vertical mobility existed to some extent for certain engineering

and commerce based vocational courses with elements of general education subjects. The vocational stream originally was meant to address the needs of those who would enter the workforce earlier than those who would enter the professions via the traditional academic streams (NCERT 2005). Envisaging a radical and systemic change in the curriculum, the National Curriculum Framework (NCF) 2005 *inter alia* states,

> *"The current two streams, academic and vocational, being pursued as per National Policy on Education (NPE-1986), may require a fresh look in the present scenario. Students may be given the option of choosing the subjects of their interest freely, though it may not be feasible to offer all the different subjects in every school. The curriculum load should be rationalized to avoid the steep gradient between secondary and higher secondary syllabi." (NCERT, 2005: 49)*

The higher secondary stage is important as it offers a choice of subjects to students. For some students, this stage may be the end of their formal education, leading to the world of work and employment; for others, the foundation for higher education. They may choose either specialised academic courses or job-oriented vocational courses. The foundation at this stage should equip them with basic knowledge and the necessary skills to make a meaningful contribution in the field they choose. A range of courses from the social sciences and commerce may be offered, and students may exercise their choice. Subjects need not be grouped into separate 'streams', and students should have the freedom to opt for subjects or courses according to their need, interest and aptitude (NCERT 2005: 53).

There has to be seamless facilitation from secondary to higher education if a student chooses to study vocational courses. From integrating vocational education with general education in schools and colleges to continuously updating the curriculums to incorporate the latest trends will help students gain relevance in their training process (FICCI-KPMG 2014).

3.2 Architecture of National Vocational Education Qualification Framework (NVEQF)

Organisational unification of general and vocational education involves bringing academic and vocational study under a single NQF and creating suitable arrangements for funding, administration, regulation and quality assurance. After several round of consultations with various stakeholders, a document containing the conceptual framework for was developed which provided the outline for the major initiatives and actions to be taken for the implementation of NVEQF (IAMR 2012). In 2012, the MHRD, Government of India launched the NVEQF, now sub-

sumed in the NSQF[7], to provide a common reference framework for linking various vocational qualifications and setting common principles and guidelines for a nationally recognised qualification system and standards. The architecture of the NVEQF is given below.

		Case 1	Case 2	
Level	**Certificate**	**Equivalence**	**Equivalence**	**Certifying Body**
10	NCC 8	Degree	Doctorate	University and SSC
9	NCC 7	PG Diploma	Master Degree	University and SSC
8	NCC 6			University and SSC
7	NCC 5	Advanced Diploma	Bachelor Degree	Board of Technical Education University and SSC
6	NCC 4			
4	NCC 2		Class XII	Board of Technical Education and SSC School Board and SSC
3	NCC 1		Class XI	
2	NCWP 2	Grade X	Grade X	School Board and SSC
1	NCWP 1	Grade IX	Grade IX	School Board and SSC
RPL	RPL 2	Grade VIII	Grade VIII	NIOS / State Open Schools and SSC
	RPL 1	Grade V	Grade V	NIOS / State Open Schools and SSC

RPL: Recognition of Prior Knowledge; NCWP: National Certificate of Work Preparation; NCC: National Competency Certificate; SSC: Sector Skill Council; NIOS: National Institute of Open Schooling.

Table 1: NSQF. Source: MHRD (2012)

The NSQF organises qualifications according to a series of levels of knowledge, skills and aptitude. These levels are defined in terms of learning outcomes[8], which the learner must possess regardless of whether they were acquired through formal, non-formal or informal learning. The key elements of the NSQF provide (i) national principles for recognising skill proficiency and competencies at different

7 The NVEQF was subsumed in NSQF after the notification of NSQF by the Ministry of Finance, Government of India on 27th December 2013. The NSQF has been developed by the Ministry of Labour and Employment (MoL&E) and the MHRD with the help of the India-EU Skill Development Project.

8 The European NQFs are mainly connected through their emphasis on learning outcomes. The NQFs of a number of countries, like Austria, Belgium (french speaking community), Croatia, France, Hungary, Iceland, Norway, Poland, Slovenia, Sweden and Turkey have supported implementation of learning outcomes. Outcome-referenced framework aims at incremental change in qualifications system and is driven by education and training system, whereas outcome-led framework is labour market driven and treats learning outcomes as an instrument for strictly linking education and training with occupational standards.

levels, leading to international equivalency; (ii) multiple entry and exit between vocational education, skill training, general education, technical education and job markets; (iii) progression pathways defined within skill qualifications framework, (iv) opportunities to promote lifelong learning and skill development, (v) partnership with industry/employers; (vi) a transparent, accountable and credible mechanism for skill development across various sectors; and (vii) increased potential for recognition of prior learning.

Each level of the NSQF is described by a statement of learning outcomes in five domains, known as level descriptors. These five domains are (i) Process, (ii) Professional knowledge, (iii) Professional skills, (iv) Core skills and (v) Responsibility. The descriptors give broad, general, but meaningful indicators of the learning outcomes at each level. The descriptors can be used in a number of ways, including the following:

a) To allocate levels to learning programmes and qualifications
b) In validation and moderation of various qualifications and programmes
c) As a basis for communication with learners and other users of qualifications
d) As a guide for mapping progression routes within and across education and training sector
e) By programme designers, when making entry requirements and recommendations for programmes (Ministry of Finance 2013).

3.3 Qualification Types

The NSQF development has revealed that using only the level structure in the NSQF may not be able to provide effective classification of qualifications. Thus it was decided to identify and utilise some qualification types, in addition to the structure of levels. Qualification types will help to distinguish among qualifications which are at the same level but differ significantly in terms of their functions, learning outcomes, sizes and/or orientation. Most frameworks in European countries have been designed to be comprehensive, covering all levels and types of qualifications. The French NQF, for example, covers three main types of qualifications: (a) vocational/ professional certificates and diplomas awarded by French ministries in cooperation with social partners through Consultative Vocational Committees (CPC); (b) vocational qualifications certificates produced by sectors under the responsibility of social partners but where no CPC is in place; and (c) certificates delivered by Chambers, public or private institutions in their own name are registered on demand after the expertise, advice and fulfilment of strict quality criteria for inclusion in the NQF (Cedefop 2012b).

3.4 Expected Benefits of the National Skill Qualification Framework

The NSQF is a nationally integrated education and competency based skills qualifications framework that will provide for multiple pathways, horizontal as well as vertical, both within vocational education and vocational training and among vocational education, vocational training, general education and technical education, thus linking one level of learning to another higher level. Individuals who obtain nationally recognised qualifications can be confident that the skills and knowledge they attain are recognised and valued across the country (maybe also internationally) as the standards set out the education, training and assessment requirements for an organisation issuing qualifications which comply with the requirements of an accredited course. Under the NSQF, skills and employability of the youth will be enhanced through industry and demand driven vocational courses. The NSQF will improve the progression pathways between formal TVET programmes in schools and Industrial Training Institutes (ITIs), Polytechnics, Colleges of Engineering and Higher Education Institutions more generally, leading to better employability. It will open up several entry and exit points between TVET and general education and will facilitate movement between these sectors. The NSQF emphasizes industry participation, with a specific focus on creating opportunities for students who are unable to enter colleges and universities. The implications of this for vocational qualifications are that besides improving the relevance for the labour market and enabling progression, qualifications can be made broad enough to accommodate the core skills that will allow learners to switch careers and pursue personal interests. Standardised processes for qualification development, curriculum development, training of teachers and trainers, assessment and quality assurance are being planned and implemented under the NSQF.

4 Centrally Sponsored Scheme of Vocationalisation of Secondary and Higher Secondary Education under the National Vocational Education Qualification Framework (NSQF)

A CSS of Vocationalisation of Secondary Education was introduced as a separate vocational stream at the +2 stage in 1988 (MHRD 1988) and revised in 1992-1993. According to an All India Evaluation Study carried out in 1995-1996, despite over 10,000 schools offering vocational courses and catering to over 1 million students, only about 4.8% of all students were enrolled in the vocational stream, against a target of covering 25% of such students. Recognising the high demand for skills and the need to make VET relevant to the diversified skill needs of the students and employers, the MHRD launched the revised scheme in 2012 under the NVEQF. The objectives of the scheme are to (i) enhance the employability of youth through competency based modular vocational courses; (ii) to maintain the competitiveness through provisions of multi-entry and multi-exit learning opportunities and vertical mobility; (iii) to fill the gap between the educated and the employable; and (iv) to decrease pressure on academic higher education. The main aim of the scheme is to provide diverse opportunities to the students to acquire skills through occupation based vocational subjects offered along with the general education subjects. Vocationalisation of education in India is taking a new form with the implementation of revised CSS of Vocationalisation of Secondary and Higher Secondary Education, which aims to increase students' employability through focus on generic or soft skills, especially at the lower levels of qualifications.

4.1 Implementation of National Vocational Education Qualification Framework (National Skill Qualification Framework) Pilot Project in Haryana State

Haryana is the first State to have implemented the CSS of Vocationalisation of Secondary and Higher Secondary Education under the NVEQF pilot project, launched by the MHRD on 3rd September 2012. To begin with, the Haryana State Government introduced four vocational subjects in Retail, Security, Automotive and Information Technology/ IT-enabled Service sectors in Class IX (NVEQF Level 1). 40 schools in 8 districts of Haryana introduced the vocational subjects under the CSS of Vocationalisation of Secondary and Higher Secondary Education. In 2013-2014, the State Government introduced another 3 vocational subjects in Healthcare, Physical Education and Sports, and Beauty and Wellness sectors. Vocational pass-outs from Government Schools are being recruited by Indian industry multi-national companies in Information Technology-IT Enabled Services,

Automotive, Security and Retail sectors. The State/ Central Boards/ Councils of Secondary Education Board and SSC conduct assessment. Skill based assessment is conducted by the Sector Skill Councils under a continuous and comprehensive evaluation system. Written, oral and skill based tests, projects, and student portfolios are being used to evaluate student's progress. The success of the pilot can be gauged by the interests that the industries are showing to do school campus placements drive to recruit vocational students. After the implementation of the NSQF pilot project at Haryana, other states have either introduced or are in the process of introducing the vocational subjects under the NSQF.

5 Public Private Partnerships under National Skill Qualification Framework

In India, significant differences between public and private provision of VET in terms of enrolment rate, student-teacher ratio, duration of courses, standard of training, training fee, qualification and salary of teachers/trainers exists among the states and it has been a major concern for the Government. However, there has been a change over the years, with industry and industry associations playing a greater role at the national level in bringing about necessary awareness on the importance of skill development and implementing the various strategies for skill development under NSQF. Countries, like Germany[9], have very strong linkages with the industry for providing VET. Students are trained in a company for three to five days a week. The company is responsible for ensuring that students get the standard quantity and quality of training set down in the training descriptions for each trade. Participation in the 'dual system' of VET is voluntary, even sometimes firms that are qualified to offer apprenticeships do not do so, and employers are under no obligation to retain trainees upon completion of the dual programme. Social partnership is an explicit part of the system, where sector joint bodies as well as sector agreements are especially important, and at the local level, unions have influence through the work councils (Winterton 2000). Although the 'dual system' is generally considered to be exemplary and has been adopted by a number of countries like Austria, Switzerland, Denmark, the Netherland, and France, but over the years it is losing its popularity due to various reasons, which include (i)

9 Germany has three types of secondary schools viz., (i) the Gymnasium, offering a rigorous academic programme, (ii) the Hauptschule, leading to 'part-time' enrolment in upper secondary vocational schools (Berufsschule) combined with apprenticeship until the age of 18, and (iii) Realschule, leading to higher vocational schools. The dual system (duales Ausbildungssystem) of VET, which combines apprenticeship in a company and vocational education at a vocational school, is a successful model because every institution has close linkage with the concerned industry under a legal framework.

companies are highly specialised and are unable to train apprentices in all the areas of the courses, (ii) companies have to follow a large number of regulations for training apprentices, (iii) providing training to the apprentices is very expensive, (iv) many school graduates possess low level of education and are, therefore, not able to cope up with the requirements of the training at workplace, and (v) lack of lifelong learning opportunities for the students (Maclean and Wilson 2009).

In India, the Public-Private Partnership (PPP) model, led by NSDC, which was established in 2009, is now driving the skill development activities in policy planning, infrastructure development, development of NOSs, training, assessment and certification. NSDC has a mandate to skill 150 million people by 2022 in 20 high growth sectors identified by the Government of India. It has 154 training partners and 1,408 training centres. The NSDC constitutes SSCs, which define the NOS for the respective sector. SSCs are autonomous bodies, incorporated either as Societies under the Societies Registration Act, 1890 or a Section 25 company under the Companies Act, 1956 with the objective of bringing about necessary connectivity between the education and training providers and industry for development of NOSs, curricula and courseware and conducting training and assessment of students/trainees. A total of 31 SSCs have been approved by the NSDC (table 2). SSCs are developing QPs for different job roles, which contain NOSs or competency standards.

Sector	Name of Sector Skill Council
Agriculture	Agriculture Sector Skill Council
Apparels	Apparel, Made-ups and Home Furnishing Sector Skill Council
Automotive	Automotive Skills Development Council
Aviation and Aerospace	Aviation and Aerospace Sector Skill Council
Beauty and Wellness	Beauty and Wellness Sector Skill Council
Banking, Financial Services and Insurance	Banking, Financial Services and Insurance Sector Skill Council of India
Capital Goods	Capital Goods Sector Skill Council
Construction	Construction Sector Skill Council
Construction Equipment	Earthmoving and Infrastructure Building Sector Skill Council
Electronics and Hardware	Electronic Sector Skill Council of India
Food Processing	Food Industry Capacity and Skill Initiative
Gems and Jewellery	Gems and Jewellery Skill Council of India
Handicrafts	Handicrafts Sector Skill Council
Healthcare	Healthcare Sector Skill Council
Iron and Steel	Iron and Steel Sector Skill Council
Information Technology-IT enabled Services	IT-ITeS Sector Skill Council
Leather	Leather Sector Skill Council
Life Sciences	Life Sciences Sector Skill Council
Logistics	Logistics Sector Skill Council
Media	Media and Entertainment Skills Council
Mining	Skill Council for Mining Sector
Oil and Gas	Hydro Carbon Sector Skill Council
Plumbing	Plumbing Skill Council of India
Power	Power Sector Skill Council
Retail	Retailers Association's Skill Council of India
Rubber	Rubber Skill Development Council
Security	Security Knowledge and Skill Development Council
Sports	Sports, Physical Education, Fitness and Leisure Sector Skill Council
Telecommunication	Telecom Sector Skill Council of India
Textiles and Handlooms	Textiles and Handloom Sector Skill Council
Tourism and Hospitality	Tourism and Hospitality Sector Skill Council

Table 2: Sector Skill Council of India. Source: NSDC (2014)

The process of development of QPs and NOSs involves research and analysis, mapping to the level descriptors of the NSQF, and development of '*performance criteria'*. More than 700 QPs, with around 2,000 NOSs have been developed and the list is expanding. A Qualifications Registration Committee (QRC) finalises the QPs/NOSs by ascertaining whether the correct process, format and nomenclature have been adopted by the SSCs. Many countries, such as Australia, Canada, Chile,

Denmark, Japan, Malaysia, the Netherlands, New Zealand, Philippines, United Kingdom, and the United States have taken specific steps to develop occupational and training standards, and some are beginning to develop cross-national approaches and benchmark national standards to international requirements. The response and the extent of involvement of industry and employers in India are yet to be studied. In UK, for example, few employers were interested either in enabling their employees to gain vocational qualifications or in using these qualifications for recruitment. As a result, the lead bodies were far from representatives and the NVQF became employment-led rather than employer-led and over dependent on consultants employed by the lead bodies to develop occupational standards (Young 2009).

A National Skill Development Agency (NSDA) was set up in June 2013 with the responsibility of coordinating and harmonizing skill development programmes under the NSQF. NSDA plans to achieve this through the National Skills Qualifications Committee (NSQC).

6 Learning Outcome Based Curriculum Packages

A paradigm shift from input based education to learning outcome-oriented education is taking place. One of the initiatives under the NSQF is to develop outcome-oriented curricula and courseware with the involvement of professionals from industry and curriculum development experts. Learning outcomes are related to the level of the learning; indicate the intended gain in knowledge and skills that a student will achieve and should be capable of being assessed.

Modular curricula, student workbooks, teachers' handbooks and e-learning materials for school education under the NSQF are being developed by the Pandit Sunderlal Sharma Central Institute of Vocational Education (PSSCIVE), a constituent unit of National Council of Educational Research and Training (NCERT) which is under MHRD, Government of India. The competency based curriculum packages consisting of syllabus, student manual and e-learning materials are being developed for specific job role identified by the SSCs. Countries like Slovenia and Romania are developing occupational standards for all sectors based on job profiles created by sectoral committees. The content is aligned to the NOSs so as to address the specific skill needs of the job role. The information from occupational standards within a sector are being used to develop outcome-referenced curricula for NSQF Level 1 and 2 for providing education and training in generic and basic technical or vocational skills. At NSQF Level 3 and 4, curricula aims to develop specific vocational or technical skill sets needed for a job role. Countries which have introduced outcome-oriented curricula include Belgium,

Finland, France, Hungary, Ireland, Lithuania, the Netherlands, Norway, Poland, Romania, Slovenia, Sweden and the United Kingdom, Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Germany, Greece, Iceland, Latvia, Liechtenstein, Malta, Portugal, Slovakia, Spain and Turkey. Cedefop (2012a) research has shown how learning-outcomes approaches to curriculum design and implementation make curricula in initial VET more inclusive and more motivating for learners (e.g. in Lithuania, Malta, the Netherlands and Finland).

7 Further Education and Training under National Skill Qualification Framework

Currently provisions for vocational progression to higher education in India are inadequate. Expressing concern over the limited provisions for higher vocational and applied learning, the Report of the Committee to Advise on Renovation and Rejuvenation of Higher Education *inter alia* states

> *"(...) the vocational education sector is at present outside the purview of Universities and Colleges. The knowledge and skills covered by this sector have no linkages with institutions of higher education and research. Students who go for vocational and technical education after completing higher secondary education are deprived of any possibility of pursuing higher education after completing their vocational or technical training. Alienation of this sector can be overcome by bringing it under the purview of universities and by providing necessary accreditation to the courses available in polytechnics, industrial training institutions, and so on. In the context of the rural economy and livelihoods, certain institutions and programmes have attempted to provide opportunities for further education after the higher secondary stage. They also need to be brought under the purview of the university system. Such inclusion will create the possibility of addressing long neglected issues of social justice and inequity arising out of the hierarchical social order and entrenched rural-urban disparities. The reason why vocational education has remained under developed and continues to be perceived as a last option is because it is largely the poor, who either cannot afford academic education or who pass out of poorly equipped and uninspiring schools with low marks. This kind of stigmatization of vocational education, as a last resort and essentially for the poorer sections of society, needs to be overcome for speedy development of the skills necessary in the present phase of India's economic development. The setting up of a Skill Development Council at the Central level is a positive step in this direction. Further growth will greatly depend on the guidance and leadership that universities will be able to provide for institutions of vocational and technical education, once they are brought into the domain an all-encompassing system of higher education. Additionally the barriers to entry into universities for students going through vocational training should be lowered to enable them to upgrade their knowledge base at any stage of their careers." (MHRD 2009)*

A major responsibility of the education and training system is to help individuals learn throughout their life. Individuals are interested to continue their studies through flexible pathways and acquire qualifications that should not constrain

them in pursuing their personal or occupational interests. Countries, such as France, Hungary, Netherlands, Spain, Greece, Turkey, Poland, Czech Republic have introduced modular system to make VET flexible and credit based. Provisions have been made for full-time and part-time vocational studies for progression of vocational students from one level to another through a wide range of higher learning programmes and modes of study which could be undertaken alongside or as part of the work. Factors that need to be considered while making arrangements for lifelong learning include aspirations and vocational interests of learners, cognitive ability, family's socio-economic support, social and religious prohibitions, gender inhibitions, and policy and legal issues. Systems need to be developed to provide clearer and transparent links to the programmes, crediting of qualifications, recognition of credits gained through programmes, and recognition of learner's achievements based on the identified sets of learning outcomes of module, unit or qualification. For VET to be an attractive learning option, young VET graduates should experience smooth transitions not only to the labour market but also if they wish to further learning opportunities. This is particularly important in countries where VET suffers from poor parity of esteem with general education (Cedefop 2013).

The NSQF has made provision for a system that would permit vocational pass-outs from schools, ITIs and Polytechnics to gain entry into higher education programmes in vocational/technical/general education courses, including degree level courses, such as Bachelor of Vocational Education (B. Voc.), notified by the University Grants Commission (UGC). 127 colleges and universities are introducing a three-year employability linked B. Voc. degree programme from 2014-2015. At the higher education level, programmes are being redesigned to incorporate a more vocationally-oriented content for providing opportunities for internships and work-based learning (see chapter 6).

After completing NSQF Level 4, students have the option to enter the degree courses of general education, such as Bachelor of Commerce (B. Com.), Bachelor of Science (B.Sc.), Bachelor of Arts (B.A.), etc. or they can pursue B. Voc. In order to provide a link between the 12th Grade certificate course and University degrees, the UGC has also approved 98 Community Colleges, which will offer skill-based courses from 2014-2015. The community colleges will be an extension of existing colleges in rural and tribal areas and will function in collaboration with the industry. They will offer six months, one year and two-year of certificate, diploma and advanced diploma courses, respectively. These courses will be taught by regular and guest faculty from the industry. The curricula will be prepared by universities and the UGC will monitor the infrastructure of these colleges. Courses in automotive engineering, retail management, food processing, banking, insurance, horticulture, healthcare, cast iron foundry, hospitality and

tourism, information technology, etc. are being offered through the Community Colleges.

In the United States, Community Colleges offer technical training and skill-oriented programmes in a wide variety of disciplines. They are also called technical colleges or junior colleges and award an Associate's degree on completion of two years of undergraduate study. They also offer certificate programmes for shorter durations. Students can join a Community College on completion of 12th Grade or at any time in their careers for re-training or re-skilling in a completely new area. On obtaining an Associate degree, a student is ready for employment and does not require a four-year undergraduate degree. Alternately, students can transfer credits to a university or college to undertake two additional years of study in order to obtain a Bachelor's degree. Most Community Colleges have agreements with universities and colleges in the immediate vicinity or within the state, which makes the transfer of credits easier. Admission criteria in Community Colleges are generally less stringent when compared to the four-year universities and colleges.

In United Kingdom, foundation degrees address skill needs at higher technician and associate professional levels; they are vocational higher education providing specialist knowledge and employability skills needed by employers. They are also a major progression route for young people who have followed an apprenticeship or other work based routes (Lasonen and Gorden 2008). In countries like France, Cyprus, Czech Republic, Iceland, the Netherlands, United Kingdom, progression from VET courses into higher education is well established (ibid). In 2009, 30.7% of EU VET graduates (age 18 to 24) were participating in further education and training, which is considerably lower than the EU figure among general education graduates (74.8%). The highest participation in further education and training among IVET graduates was found in Denmark (58.2%) and Slovenia (56.9%). The lowest shares were found in Estonia, Ireland, Greece and Cyprus (where VET also registers relatively low enrolment rates) as well as in Germany (where instead VET is associated with high employment rates). The rate in Turkey (35.6%) is higher than the EU average while the rate in Switzerland (25.3%) is less than the EU average.

8 Recognition of Prior Learning

The processes of prior learning are complementary to every qualifications system that aims to promote an approach to lifelong learning. Within the scope of lifelong learning, learning is considered as a process, which continues, in the formal, non-formal and informal learning environments at every level of education system, including the higher education system. The processes of Recognition of Prior

Learning (RPL) ensure that the knowledge, skills and competences acquired in non-formal and informal learning are described and recognised. In India, RPL is expected to provide the following possibilities:

- Access to assessment and evaluation of competencies
- Access to education and training programmes
- Credit accumulation and transfer
- Exemptions to a part of study programme
- Certification of units
- Recognition of qualifications

The following groups and individuals could be the beneficiaries of RPL:

- Students who dropout at different stages of education and they do not have the necessary general education and skills for gaining employment in the industry. As per 66th NSSO round (2009-2010), the general education level of over 50% of India's labour force in the age group of 15-59 remains extremely low. Of the total labour force of 431 million on basis, about 29% are not even literate and another about 24% were having education up to primary level. Of the balance, about 29% had education level up to secondary which included 17.6% with middle level education. Only about 17% have higher levels of education (including higher secondary, diploma/certificate, graduates and higher than graduation) (Planning Commission 2012).
- People who are working in the unorganised sector for decades but their competencies have not been recognised as they have not undergone formal VET. The NSSO 66th round estimates that in the working age population (i.e. age group of 15-59), only 3% have received formal vocational training and 5% non-formal training. Of this 5%, 2% received training from hereditary profession (informal training), 1% through self-learning and the rest 2% from on-job training (NSSO 2013). It is estimated that by 2022, India will have the maximum number of working age (between 15 to 59) population in the world who could contribute to the economic growth of nation (Census 2011; FICCI-KPMG 2014).
- Individuals who have undergone VET, but their certificates hold no value or they have very limited options for personal or career development. According to the NSSO, VET has been helpful to about 44% of the trainees in securing salaried or wage employment and for nearly 16% of trainees,

the VET was helpful in self-employment. However, the training was reported to be not so useful to about 29% of the participants (NSSO 2013) (see chapter 12).

The Skill Development Initiative (SDI) scheme of Ministry of Labour and Employment (MoL&E) attempts to recognise and certify the skills of skilled workers. For example, the Ministry of Tourism runs the Skill Testing and Certification programme wherein candidates can get their skills assessed and get the certificate. Skills recognition and certification initiatives in the informal economy through RPL processes will provide an important pathway for the 90% of Indians who work in the unorganised sector (NCEUS 2009).

India's NSQF supports the processes regarding the recognition of prior learning. The concerned processes help clarify the meaning of the qualifications and make visible the learning outcomes that are necessary in order to achieve the qualifications. Given the low levels of general education in the population, the NSQF has organised RPL into learning 1 and RPL 2, leading into Levels 1 to 10. The NSQC will develop the principles and guidelines for RPL. Following the publication of the principles of RPL designated institutions and bodes will be responsible for publishing the procedures for implementing these principles.

The major challenges in the implementation of RPL in India include the following: (i) developing an understanding among the people working in the unorganised sector about the benefits of RPL; (ii) developing a mechanism of parity between the learning achievements gained through the validation of prior learning with the achievements gained through a variety of educational routes; (iii) preparing people to be responsible for their own learning and opting for courses under the NSQF; (iv) producing a common RPL referencing framework across knowledge and skills, especially for those who lack literacy and numeracy skills; and (v) developing a management structure to coordinate and regulate quality assured assessment and certification mechanism. A Skill Assessment Matrix for Vocational Advancement of Youth (SAMAVAY) which allows for vertical and lateral mobility within the vocational education system and between the current education systems was launched by the MHRD on 11th November 2014. The framework defines the rules for credit allotment under the NSQF. This will facilitate multiple entry and exit pathways with the credits earned and recognised for exemptions.

The National Institute for Open Schooling (NIOS), which offers distance learning courses for out-of-school youth and adults, could play a major role in offering bridge or foundation courses for seamless progression of learners from one level to another. As a step forward, a framework for RPL has been prepared

by the NIOS (NIOS 2013). The NIOS will be instrumental in conducting assessment through RPL at both the lowest levels and at community colleges and polytechnics, the latter offering qualifications such as associate diplomas (MHRD 2012). The NIOS is developing the guidelines for establishing the system of RPL. Learners will have to provide evidence to support their prior learning claim that they have the required knowledge and skills outside the learning path if they expect the VET provider to waive off some credits. However, the process of skills recognition in the informal economy will need to be accompanied by provision of infrastructure which is affordable, reliable and efficient. There will be challenges in identifying skill sets, documenting those skills, communicating to the potential candidates, as well as administering the process. Methods will need to be established, such as portfolio review, written/oral exams, and demonstrations. An open examination system under the NSQF with relevant academic and skill standards would have to be created for skill recognition and certification, so that it benefits all those people who have acquired their knowledge and skills outside the education system and wish to become life-long learners (see chapter 12).

9 The Way Forward Potential Areas of Improvement in National Skill Qualification Framework

The Government of India has initiated the process of revising the NPSD 2009 to give necessary impetus to the skill development and entrepreneurship development programmes.

9.1 Education and Training System

The NSQF and RPL may consider the following potential areas of improvement related to the education and training system:

a) Quality and quality assurance
b) Teacher’s qualifications
c) Gender and geographical differences
d) Transparency and recognition in individuals' qualifications and mobility
e) Educational levels of working age population
f) Stakeholder cooperation

The priorities of the government with the NSQF are to make qualifications uniform and comparable and do away with the differences in course content, entry

requirement, duration of vocational courses, and the quality of education and training across institutions and States/UTs, rendering in the development of competencies useful for wage or self-employment. For example, currently in the plumbing sector, the duration for the 'Certificate' course in Plumbing/ Sanitary Hardware Fitter/Plumber through the face-to-face mode is 2 years, 1 year, 6 months and 4 months and the entry requirements range from 12th Grade fail to 10th Grade pass. The 'Certificate' course in Plumbing/Plumber is offered for duration of 1 year, 6 months and 3 months through the open learning system and the entry requirement ranges from 10th Grade to 12th Grade or pass-out from ITIs. The Diploma programme in Plumbing offered through the open learning system is also of 1 year duration and the entry requirement is 10th Grade pass or those who have completed 15 years of age (these candidates will have to clear the Bachelor Preparatory Programme) (Mehrotra 2008). Also, according to the NSSO survey report, VET is not relevant for gaining employment or self-employment. Only 44% of the trainees said the training helped them in securing salaried or wage employment and for nearly 16% of trainees, the VET was helpful in self-employment. However, the training was reported to be not so useful to about 29% of the participants (NSSO 2013). The current VET system and infrastructure does not have the capacity to responds to the sector's wide-ranging and changing skill needs.

In order to rectify the problem of differences in content, entry requirement and duration, the NSQF has been put in place to ensure that the workforce get quality VET opportunities through a uniform system of skill standards set by employers. Such a quality assurance system would be the key factor in the success of VET and also a way out of the problem of current levels of unemployment (being around 46 million, it is likely to grow to anywhere between 50-60 million in the next 8-10 years). As per 12th Five Year Plan projections, about 25 million new entrants would join the labour force in the next five years (Government of India 2013).

Vocational teachers will have to be trained on 'student-centred' teaching methods which should also include use of simulated and e-learning materials, role play, small group work, discussion, debate, problem solving, cognitive apprenticeships, modelling, and a host of other teaching practices that reverberates the constructivist approach to teaching-learning (Mehrotra 2014b) (see chapter 9). The pre-service and in-service teacher training programmes in India are inherently biased towards meeting the demand of academic education and uses traditional teaching methods and techniques for training teachers. Massive Open Online Courses (MOOCs) model should be used to train teachers and students on soft or generic skills. Online aptitude tests should be utilized to provide opportunities to students to select the courses based on his/her aptitude and interest. Video based

content can help in supplementing learning. In a joint initiative, the Skill Development Network (SDN) of Wadhwani Foundation and PSSCIVE developed e-learning modules for General Duty Assistant and IT-Helpdesk Assistant, which are based on the learning outcome, based curricula developed by PSSCIVE for the two job roles. The National Mission for Education through Information and Communication Technology (NMEICT) can play an important role in providing high quality, curriculum-based interactive content for all vocational subjects and host them on the Learning Management System platform in open access.

The 12th Five Year Plan (2012-2017) aims at improving the outreach of the skill development, both quantitatively and qualitatively to bridge the divides, namely spatial, sectoral, regional and gender and so on. It also advocates the development of NSQF, incorporating the standards developed by SSCs, and have in place a regulatory framework to oversee the functioning and accountability of SSCs. Use of ICT and Mobile Vans for expanding outreach is one of the measures suggested in 12th FYP. A rural broadband initiative of the Ministry of Communications and Information Technology, Government of India proposes to connect 50,000 panchayats using high capacity broadband connectivity and providing content for skill development. Citizen Service Centres are being set up to deliver skill development through information technology.

In order to reap the benefits of demographic dividend, there is a need to enhance the capacity of the institutions, promote PPP models, adopt innovative and flexible training delivery modes, and offer a wide variety of vocational subjects/courses to attract the learners to VET. All regulatory/awarding institutions (e.g. University Grants Commission, All India Council for Technical Education, National Council for Vocational Training, Technical and School Boards, etc.) will have to define their entry and exit competencies and qualifications in terms of NSQF levels so that provision for vertical progression in both general and vocational education would be strengthened and vocational pass-outs are able to gain entry into respective portals of higher education in the vocational/ technical/ general education courses, including degree level courses (Ministry of Finance 2013). Vocational courses should not prove to be dead ends and articulation arrangements should be made for initial and continuing VET. Entrepreneurship education should be integrated at various levels in all subjects. Developing uniform and structured pathway for students taking vocational subjects in secondary and higher secondary education would be the key to the success of vocational education programmes.

Understanding of the benefits and operational aspects of NSQF amongst the various stakeholders implementing the skill development programmes is important. A clear understanding of what NSQF is (for example, it is a bridging device between different sectors or levels of education and training) and what it does (for example, it is a quality assurance mechanism which would also lead to greater

transparency in education and training sector) would help in greater participation of people and effective implementation of skill development programmes under NSQF. The joint effort and the consensus of relevant and visible leaders comprising employers, workers, educators and government officials will be the single most important factor for the success of skilling Indian youth under the NSQF (Singh 2012).

9.2 The Labour Market

Indian government policies on education and employment aim at training young and working individuals to achieve qualifications required by the labour market so that current and future requirements of economic development can be met. Compared to the growing population and particularly the growth of new entrants into the labour market, the numbers of VET places are disproportionately low. Dual forms of learning are now used more effectively in vocational secondary education whereby the link between education and labour market is strengthened (see chapter 8).

The NSQF implementation may consider the following potential areas of improvement related to the labour market:

a) Alignment of labour market needs with the qualifications available;
b) New qualifications to be developed in line with the emerging needs;
c) Arrangement for greater funding and credit facilities for students opting for VET. Indian Banks' Association has launched a Model Loan Scheme for providing loans from INR 20,000 up to 150,000 for skill development training programmes of various durations. A Credit Guarantee Funds Scheme for skill development to provide a guarantee against default in repayment of education loans extended by lending institutions has also been launched;
d) Participation of employers in financing of vocational education. Under the new Companies Act 2013, vide section 135 of the Act, 2% spending on Corporate Social Responsibility (CSR) is mandated out of the average net profit made by the company during every block of three years which would cover activities like employment enhancing vocational skills;
e) Recognition of learning at the workplace and improvement of vocational training;
f) An online national register of the persons skilled and their current engagement should be established at the national level for providing a national database to employers and other stakeholders. This should be in

addition to the register of qualifications which contains all qualifications approved and available and updated regularly;

g) Greater interaction between industry, academia, skill providers to narrow the gap between demand and supply of skilled manpower, improvement in quality of training by focusing on training of trainers, promotion of PPP in skill development and an outcome based approach to training, which ensures that the employability created is manifested in measurable and tangible wage or self-employment of trainees;
h) New qualifications need to be developed along emerging needs;
i) Active labour market participation in vocational education decision making;
j) Expanding the coverage of vocational courses under the NSQF by amending the Apprentices Act, 1961 and the relevant rules to cover small, medium and large enterprises; and
k) Review of labour laws for facilitating the hiring of short term interns and trainees.

There are 21 Central Ministries who are funding skill development programmes under various schemes through specialised institutions and training centres. State Skill Development Missions (SDM) has been set up by various states to work out an integrated strategy for skill development and enhancing the employability of youth in the state. A coordinated action is needed to bring about policy coherence and improvement in quality of various schemes, including '*Hunar Se Rozgar*' scheme implemented by the Ministry of Tourism, Entrepreneurship Skill Development Programmes of Ministry of Micro, Small and Medium Enterprises, '*Ajeevika*' (Livelihood) scheme of Ministry of Rural Development, Integrated Skill Development Scheme of Ministry of Textile, Support to Training and Employment Programme (STEP) for women implemented by the Ministry of Women and Child Development, Community Development Programme of MHRD, '*Seekho Aur Kamao*' (Learn and Earn) scheme of the Ministry of Minority Affairs, skill development programmes for Persons with Disabilities of Ministry of Social Justice and Empowerment and STAR Scheme of Ministry of Finance. The Ministry of Skill Development and Entrepreneurship (MoSD&E) formed in June 2014 has an overwhelming task of coordinating with the various Central and State government departments, academic institutions, TVET institutions and regulators for taking a variety of skill development schemes and programmes forward and aligning them with the NSQF.

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