



PRE-VOCATIONAL EDUCATION IN SCHOOLS

Module 3

Outline of the Module

- 1 Historical Perspectives on Work Based Education in India**
- 2 Present Scenario of Skill Development**
- 3 Work Experience and Pre-Vocational Education Programme**
- 4 Vocationalisation of Education under Samagra Shiksha**

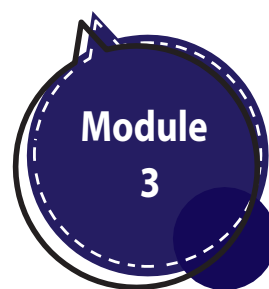
Module Objectives

After going through this unit, the trainee should be able to:

1. Comprehend historical perspectives on work based education in India
2. Describe the key features of skill development in India
3. Describe the purpose of work experience and pre-vocational education programme.
4. Describe the vocationalisation of school education under SamagraShiksha

Module Overview

The module has been developed to provide a comprehensive overview of the historical perspective of work based education in India, current scenario of skill development and the school vocational education programme. The introductory session begins with the ancient ducation system and describes the views and ideas given by the great thinkers, philosophers and freedom fighters on the importance of work based education. It also builds a foundation on the importance of vocationalisation of education in enhancing individual employability and national productivity, which was emphasized by the various commissions on education constituted by the Government of India from time to time. The second session describes the scenario of skill development in India through its key features, such as coordinated action between different stakeholders, integration of vocational skills in general education, public-private partnerships in implementation of skill development schemes and programmes, and vocationalisation of higher education. The third session deals with the work experience programme, pre-vocational education programme in Classes IX and X and the erstwhile scheme of vocationalisation of secondary education in Classes XI and XII. It will help the trainees to understand the development, progress and issues of vocationalisation of school education. Vocationalisation of education in India begins from Class I, with skill based activities introduced through the Work Experience or Socially Useful Productive Work (SUPW) programme up to Class VIII. Vocational education was introduced from Classes IX to XII to make provisions for the occupation based vocational skills alongside general academic education. The purpose of vocationalisation of education is to improve the relevance of education to the world of work and make students more employable. The fourth session on vocationalisation of education under SamagraShiksha(integrated scheme of school education) explains the concept of pre-vocational education to



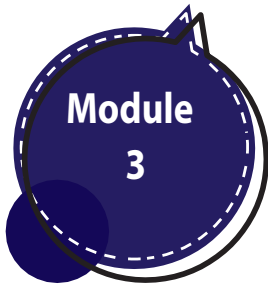
be introduced from Classes VI to VIII and vocational education programme from Classes IX to XII. It describes the various components of the school vocational education programme from Classes IX to XII to provide an understanding of the importance of each of the components in effective implementation of vocational education in schools.

Module Sessions

Session 1: Historical Perspectives on Work Based Education in India

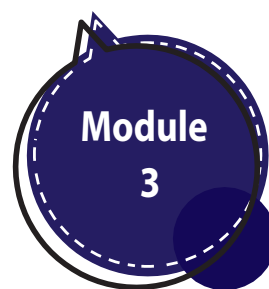
The modern education system in India evolved from the Vedic and Gurukul system. The Gurukul system in which students learnt life skills, vocational skills and knowledge related to the discipline was prevalent during that period. The Teacher (Guru) fostered a bond with students (Shishya). The students were subjected to a rigid discipline and studied under the guidance of the teacher. The ancient Indian education was not merely theoretical but was related to the realities of life and work (karma). Students would not only receive instructions related to domestic life, but would also learn the lesson of dignity of labour through training in vocations and social service. The Indian education system helped in preserving ancient culture and promoting cultural unity and infused a sense of responsibility and social values. Great Indian philosophers and thinkers, like Swami Vivekananda (1863-1902), RabindraNath Tagore (1861-1941), Sri Aurobindo Ghosh (1872-1950), Mohandas Karamchand Gandhi (1869-1948), Bhimrao Ramji Ambedkar (1891-1956), and Sarvapalli Radhakrishnan (1888-1975) gave their views on the education system. The ideas and perceptions of various philosophers and thinkers and the recommendations of various committees and commissions not only shaped the national education system, but also highlighted the need and importance of vocationalisation of education in enhancing individual employability and national productivity.

The need for a formal system of vocational education can be traced back to 1854, when Lord Charles Wood prepared a Despatch, popularly known as “Woods Despatch”, on the educational system for India which came to be known as the “Magna Carta” of education in the country. The need for introducing vocational education through diversification of general education was advocated by Woods Despatch. It suggested that there is a need for establishing vocational schools, technical Institutes and vocational colleges. The Indian Education Commission, also known as Hunter Commission (1882) examined the problems of education

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Module 3

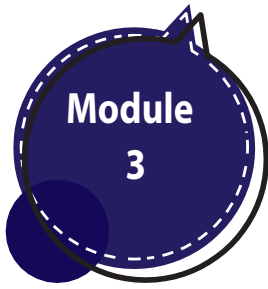
and recommended that at the high school stage, there ought to be two distinctive streams; first for preparing the students for entrance examination to the University courses and the second for practical occupations. Wood and Abbot Commission (1936) stressed the importance of manual work in education and suggested that (i) vocational education should be organized according to the needs of various vocational areas and no vocational area should be considered less important, (ii) vocational education should be considered at par with literary and science education and its standard should be raised, (iii) vocational education should be considered as complementary to other types of education, (iv) skillful workers engaged in small industries should also be given proper vocational training. (v) there should be two types of schools for vocational education; first should be the junior vocational school and the second senior vocational school. In the junior school after Grade VIII, there should be three years' course for vocational education. In the senior school, there should be two years' vocational education after Grade XI. The junior vocational school should be considered at par with a high school and the senior one should be at par with an intermediate college, (vi) certificate awarded after passing a vocational course, should clearly mention the quality of work done by the candidate during the period of vocational training, (vii) vocational school should be established near vocational centers, (viii) part-time classes should be opened for persons engaged in various vocations, (ix) workers should be given training in vocational schools for 2-1/2 days per week and they should be given full wages for these 2-1/2 days, (x) in part-time schools, provision should be made for training during day time. Mahatma Gandhi (1937) insisted that manual and productive work should find a place in examination. In 1938, Central Advisory Board of Education set up a Committee under the Chairmanship of Shri B.G.Kher on the Wardha Education scheme (NaiTaleem of Mahatma Gandhi). The committee recommended the implementation of NaiTaleem by all the provincial governments.



The educational ideas of Mahatma Gandhi were given practical shape by the Zakir Hussain Committee and “Basic Education” (BuniyadiShiksha) was accepted as the national pattern of education for the elementary stage in 1938. After the independence of India in 1947, there had been a debate on the kind of education system that the country should adopt to valorize the cultural and religious ethos but at the same time develop science and technology for the national development. The Government of India also appointed commissions for suggesting educational reforms. The Secondary Education Commission (1952–53), which focused mainly on secondary and teacher education, recommended the diversification of courses at the secondary stage. This resulted in the establishment of multi-purpose schools. These schools offered one or more practical courses in agriculture, home science, business and commerce, fine arts and humanities. Later, the Education Commission (1964–66) made a comprehensive review of the entire field of education and suggested a national pattern for all stages of education. It also suggested that besides vocational education, work experience programme should also be introduced in schools.

The National Policy on Education (1968) highlighted the need to increase facilities for Technical and Vocational Education (TVE) at this stage. The National Council of Educational Research and Training (NCERT) published a document titled “Higher Secondary Education and its Vocationalisation” in September 1976. The document highlighted the need to bring about flexibility in the choice of vocations, determining the skill needs based on the vocational opportunities and manpower needs in the district or a group of districts through district surveys of economic activities, and provision for guidance and counselling for careers and courses to the students. A Vocational Education Programme (VEP) was introduced at +2 stage in general education institutions in 1976-77 by few States. Under the programme, a variety of vocational courses of 2-years duration were offered in various disciplines.

The National Policy on Education 1986 promulgated “the introduction of systematic, well-planned and rigorously implemented programmes of vocational education is crucial in the proposed educational reorganization”.



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Activity 1: Group Discussion

Objective: To orient the participants on developing an understanding of the importance of work based education.

Procedure:

- Form groups with three trainees in each group.
- Ask each group to discuss on the historical perspectives on work based education and vocational education
- Each group shares their knowledge on the events that followed during pre-independence and post-independence which led to the development of vocational education in India.

Highlighting the need for introducing the vocational education in schools, the policy document mentioned that “vocational education will be a distinct stream, intended to prepare students for identified occupations spanning several areas of activity. These courses will ordinarily be provided after the secondary stage, but keeping the scheme flexible, they may also be made available after Class VIII.....”.A Programme of Action was brought out in 1986 to translate the policy imperatives into concrete programmes. It suggested that a Central Institute of Vocational Education (CIVE), under the National Council of Educational Research and Training (NCERT), should be set up to perform research and development, monitoring and evaluation functions. Tertiary level programmes like Diploma in vocational subjects, Advance Diploma programmes and Degree programmes should be introduced in selected polytechnics, affiliated colleges and Universities, as well as in special Institutes set up for the purpose.

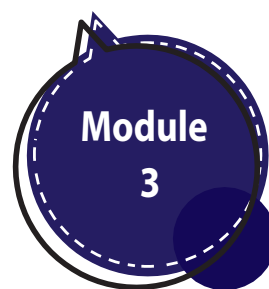
The Programme of Action (1992) of National Policy on Education (1986) emphasized that vocationalisation of education programme must ensure that at the secondary stage, students are prepared to choose a career. It stressed the development of vocational interests and aptitudes to allow the self-exploration of vocational preferences and to enhance productivity and participation in work.

Activity 2: Who am I?

Procedure:

Trainees are divided into two or more teams with equal number of members

- Each team is given some names of the occupations, like mason, carpenter, plumber, technician for home appliances, floriculturist, microirrigation technician, beauty therapist, gardener, solar power technician, etc.
- The team members will write the tasks performed by the person-
sindifferent occupations
- A member from the team shall come forward and state the task(s) performed by a skilled person



- The other team members shall guess the occupation. Points shall be given for each right guess.
- The other team members shall then come forward and the game shall continue

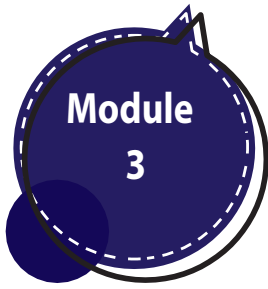
Self-assessment

1. What are the two major suggestions given by Wood and Abbot Commission (1936) for elevating the status of vocational education?
2. Why the commissions before and after independence of India suggested the need to give due importance to vocational education?

Session 2: Present Scenario of Skill Development

Vocational Education and Training (VET) in India is being made aspirational by mobilising greater participation of youth, assessing skill gaps for reducing the mismatch between the demand and supply of skilled manpower, mainstreaming vocational education in schools, polytechnic, colleges, and universities, encouraging private participation through public-private partnerships, recognising prior learning of skilled workers through assessment and certification, encouraging participation of workers to opt for skill development courses offered through specialized training Institutes and defining clear career pathways for a variety of skill training programmes offered through institutions under the National Skill Qualification Framework (NSQF).

A comprehensive National Policy for Skill Development and Entrepreneurship was formulated in 2015 and a Skill India Mission was set up by Government of India, with the objective of training 400 million people by 2022. 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



Skill is an ability to do an activity or job well, especially because you have practised it.

in the state. Public-Private Partnership (PPP) model, led by National Skill Development Corporation (NSDC), which was established in 2009, is now driving the skill development activities in policy planning, infrastructure development, development of national occupation standards, training, assessment and certification. The NSDC has a mandate to skill 150 million people by 2022 in 20 high growth sectors identified by the Government of India. The key features of skill development scenario in India include the following:

Coordinated Action and Coherence

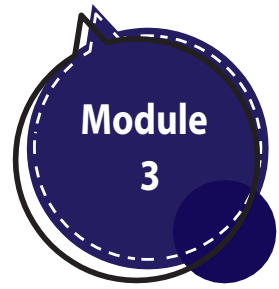
The Government of India is promoting a coordinated action for skill development with the involvement of key stakeholders – Central Ministries, State Governments, National Skill Development Corporation (NSDC) and Sector Skill Councils (SSCs). A separate Ministry of Skill Development and Entrepreneurship was created in 2014 to streamline the implementation of skill development in the country. A National Policy for Skill Development and Entrepreneurship 2015 was unveiled on July 15, 2015 to meet the challenges of skilling people at scale with speed, standard (quality) and sustainability and to bring .

about greater coherence between the various skill development programmes. The policy objective of increasing the opportunities and participation in skills development is being met through greater public funding and enhanced resource allocation mechanisms, articulated pathways, diversification of types of training, more private provisions and quality management.

Integrating Vocational Skills with General Education

A National Vocational Education Qualifications Framework (NVEQF) was launched by the Ministry of Human Resource Development (MHRD)¹ in 2012 to integrate vocational education with general education and to provide seamless pathway to the learners for a smooth transition from school to work or further education.

It is organized as a series of levels of “learning outcomes”, arranged in ascending order from 1 to 10 levels (table 1). Levels depend on the complexity of learning; 1 is the least complex and 10 the most complex. It is a broad framework beginning from Grade 9 (NSQF level 1) through to Diploma (NSQF level 5) Advanced Diploma and Degree, (NSQF levels 6-10) in Colleges and Universities.



Each level of NSQF is described as a statement of learning outcomes in the following domains: (i) Process required,

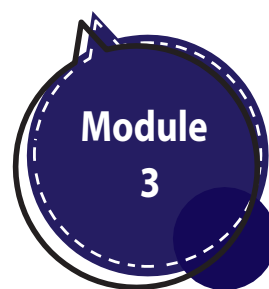
(ii) Professional knowledge, (iii) Professional skills, (iv) Core skills, and (v) Responsibility (table 1).

With the notification of National Skill Qualifications Framework in 2013, the NVEQF was subsumed in NSQF

process that repetitive on a regular basis and require no close supervision	terminology, instructional words, meanings and understanding.	safety and security measures.	personal financing; familiarity with social and religious diversity, hygiene and environment.	continuous instruction and close supervision.
requires a person to perform repetitive processes on a regular basis, with little variation of standing or nature of work.	Material, tools and applications in a limited context and understands context of work and quality.	Limited service skills used in limited context; select and apply tools; assist in professional works with no variables; differentiate good and bad quality.	Receive and transmit written and oral messages, basic arithmetic, personal financing, understanding of social, political, and religious diversity, hygiene and environment.	No responsibility; work under instruction and close supervision.
work may be limited to routine and predictable.	Basic facts, process and principle applied in trade of employment.	Recall and demonstrate practical skill, routine and repetitive in narrow range of application	Communication - written and oral, with minimum required clarity, skill of basic arithmetic and algebraic principles, personal banking, basic understanding of social and natural environment.	Work under close supervision. Some responsibility for own work within defined limit.
choice in work, predictable, routine, and choice.	Factual knowledge of field of knowledge or study.	Recall and demonstrate practical skill, routine and repetitive in narrow range of application, using appropriate rule and tool, using quality concepts.	Language to communicate - written or oral, with required clarity and skill. Basic arithmetic and algebraic principles, basic understanding of social political and natural	Responsibility for own work and learning.

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	developed skill, with clear choice of procedures in familiar context	processes and general concepts, in a field of work or study.	practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information.	skill; understanding of social, political; and some skill of collecting and organising information, communication.	and learning some responsibility for other works and learning.
6	Demands a wide range of specialised technical skill, clarity of knowledge and practice in broad range of activity, involving standard and non-standard practices.	Factual and theoretical knowledge in broad contexts within a field of work or study.	A range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study.	Reasonably good in mathematical calculation, understanding of social, political and reasonably good in data collecting, organising information, and logical communication.	Responsibility for own work and learning Responsibility for other's work learning
7	Requires a command of wide-ranging specialised theoretical and practical skills, involving variable routine and non-routine contexts.	Wide-ranging factual and theoretical knowledge in broad contexts within a field of work or study.	Wide range of cognitive and practical skills required to generate solutions to specific problems in a field of work of study.	Good logical and mathematical skill; understanding of social political and natural environment and organising information, communication and presentation skill.	Full responsibility for output of group and development
8	Comprehensive, cognitive, theoretical knowledge and practical skills to develop creative solutions to abstract problems. Undertakes self-study; demonstrates intellectual independence, analytical rigour and good communication.			Exercise management and supervision the context of work/study having unpredictable changes; responsible for work of others.	
9	Advanced knowledge and skill. Critical understanding of the subject, demonstrating mastery and innovation, completion of substantial research and dissertation.			Responsible for decision making in complex technical activities, involving unpredictable work/study situations.	
10	Highly specialised knowledge and problem solving skill to provide original contribution to knowledge through research and scholarship.			Responsible for strategic decisions in unpredictable complex situations of work/study.	



National Occupation Standards

Competency is an observable and measurable knowledge and skills. Skill standards and assessment are critical to the quality of VET. The recognition of qualifications awarded to learners by the industry or employers across the country depends on the skill standards and delivery of VET. The National Occupation Standards (NOSs) developed by the SSCs or other agencies are examined and reviewed by the National Skill Qualification Committee (NSQC) and thereafter conferred the status of 'National Occupation Standards'. The Qualification Packs containing the NOSs for the job roles in different sectors are available on the National Qualifications Register (NQR). 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 qualifications under the NSQF are being aligned to globally recognized qualifications framework for ensuring quality and international workforce mobility.

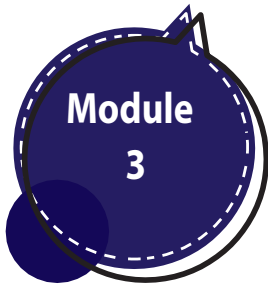
Vocationalisation of Higher Education

Making higher education skill oriented is a critical key area for improving the employability of higher education graduates, therefore, skilling is being increasingly integrated in higher education with community colleges and degree colleges affiliated to universities offering NSQF- aligned vocational courses and Bachelor of Vocational Education (B.Voc.) degrees. These courses are being aligned to a credit framework i.e. Choice Based Credit System (CBCs) of the University Grant Commission (UGC) to provide horizontal and vertical mobility. The Choice Based Credit System (CBCS) provides choice for students to select from the prescribed courses (core, elective or minor or soft skill courses).

Activity 1: Debate

Title: Integration of vocational skills with general education is a better option than streaming vocational education in school education system

Objective: To orient the participants on developing an understanding of the integrated model of vocational education.



Procedure:

- ◇ Form two teams – the affirmative team, which shall support the topic or resolution and the negative team, which shall speak against the topic or resolution.
2National Occupation Standards (NOS) are statements of the standards of performance individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding
- ◇ One member from the affirmative team shall initiate the debate and the members from the negative team shall take notes for preparing the rebuttal for the statements made by the other team member
- ◇ The other team member shall then present the rebuttal and the debate shall continue
- ◇ The conclusion shall be made by the judge

Activity2: Presentation

Title: Role of different agencies in skill development

Objective: To orient the participants on understanding the roles and functions of different agencies in implementation of skill development programmes or schemes.

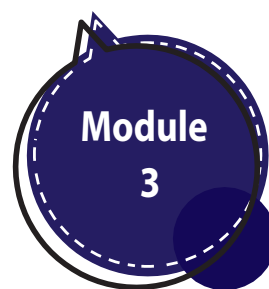
Procedure

Visit the websites of Ministries and various organisations/agencies/institutions involved in skill development

Prepare a presentation on the roles and functions of the Ministries and various organisations/agencies/institutions vis-à-vis the programmes and schemes of skill development being implemented by them.

Self-assessment

- 1. Write short note (80-100 words) on the following:**
 - (i) Integration of vocational skills in general education**
 - (ii) National Occupation Standards**
 - (iii) Vocationalisation of higher education**



Session 3: Work Experience and Pre-Vocational Education Programme

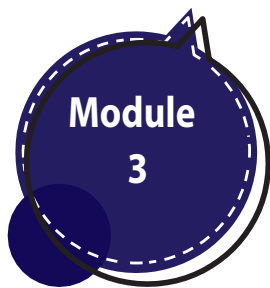
The vocationalisation of education in schools of India has been introduced with different names. At the primary and middle school levels (Classes I-VIII) it is called ‘work experience’ or ‘socially useful and productive work’, ‘pre-vocational education’ in Classes IX and X.

Work Experience Programme

Kothari Commission Report of the Education Commission (1964–66) conceived work experience programme as “participation in productive work in the school, in the home, in a workshop, on a farm, in a factory or in any other productive situation”. It recommended that work experience, which includes purposive and meaningful manual work, should be an essential component at all stages of education. It should inculcate in the learners a respect for manual work, values of self-reliance, cooperativeness, perseverance, helpfulness, work ethics, attitudes and values related to productive work and concern for the community. However, the implementation of Work Experience (WE) or Socially Useful Productive Work (SUPW)/Pre-vocational Education (PVE) programme in schools has been far from satisfactory because of various reasons, such as non-allocation of sufficient time in the school time table, non-examinable nature of the courses, insufficient funds and non-availability of trained teachers and raw materials.

Centrally Sponsored Scheme of Pre-vocational Education in Classes IX and X

A Centrally Sponsored Scheme of Pre-vocational Education (PVE) at lower secondary stage was introduced in 1993-94. A document titled “Guidelines on Pre-vocational Education” was brought out by the NCERT after the deliberations in a National meet organized in July 1993 to formulate the implementation strategies for pre-vocational education scheme launched by the MHRD. The main features of the scheme of pre-vocational education are as follows: (i) Pre-Vocational Education may be offered in lieu of Work Experience. (ii) Minimum six period per week will be allotted, (iii) It will be introduced only in the schools where vocational courses at +2 stage are being offered and the regular infrastructure facilities are available for the chosen pre-vocational course, (iii) After completion of pre-vocational at lower secondary stage, the pass outs should attain marketable skills in the course concerned.



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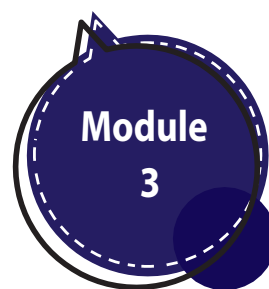
The scheme of assessment is similar to that of work experience. The evaluation in classes IX and X is done by the schools and the grades awarded by the schools in Grade X are reflected in the Board's Certificates, with the title of the course.

In pursuance of the provisions in the National Policy of Education 1986 and recommendations of various committees, the Central Board of Secondary Education (CBSE) made provision of pre-vocational education in its scheme of studies with effect from the academic session 1995-96. The objectives of Pre-Vocational Education are: (i) To impart training in simple marketable skills to students in classes IX & XI; (ii) To develop vocational interests and aptitudes in enhancing productivity and to allow for self-exploration of vocational preferences, (iii) To facilitate the students in making choice of vocational courses at the higher secondary level, (iv) To prepare students for participation in work-experience as a desired dimension of academic education; and (v) To inculcate healthy values related to work culture.

The NCERT has developed pre-vocational modules in a wide variety of areas, which include Bee-keeping, Biofertilizers, Horticulture, Jave-urvarak(Hindi),Mushroom Cultivation, Mushroom-Ki-Kheti(Hindi), Vermiculture, Basic Book-keeping, Basic Office Practice, Typewriting, Internet Café, Beginning with Visual Basic, GhareluVidyutUpkarno Ki MarammatEvumAnurakshan(Hindi), Gharelu Wiring, Plumbing, Repair and Maintenance of Power Thresher, Repair and Maintenance of Tillage and Sowing Equipment, Wood Craft, Blood Bank Operation, Bans Kala (Hindi),Batik, GudiyaNirman, Preparation of Bread and Other YeastLeavened Products, Preservation of Fruits & Vegetables by Drying & Dehydration, Preservation of Fruits & Vegetables using Salt, Vinegar & Oil, Production of Cosmetics, Soft Toys, Textile Care and Design, Tie and Dye and Kasta Kala (Hindi).

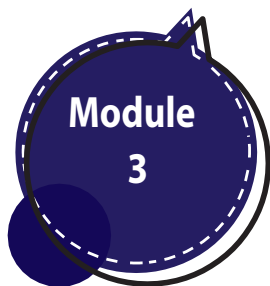
Centrally Sponsored Scheme on Vocationalisation of Secondary Education (1988)

Vocationalisation of education was introduced in India in 1976-77 to make provisions for the development 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. In 1978, a Committee under the chairmanship of Shri Malcolm S. Adiseshiah suggested that the curriculum design for vocational stream at +2 stage should comprise (i) Language (15% of the total time), (ii) General Foundation Course (15% of the total time), and (iii) Vocational Elective Subjects (70% of the total time).



A Centrally Sponsored Scheme (CSS) of Vocationalisation of Secondary Education was launched in February 1988. The main objectives of the scheme were to provide diversification of educational opportunities to enhance individual employability, reduce the mismatch between demand and supply of skilled manpower and provides an alternative for those pursuing higher education. The scheme provided guidelines for financial assistance to the States to set up administrative structure, area vocational surveys, preparation of curriculum, text book, work book curriculum guides, training manual, teacher training programme, strengthening technical support system for research and development, training and evaluation etc. It also provided financial assistance to NGOs and voluntary organizations towards implementation of specific innovative projects for conducting short-term courses. Under the scheme, which became fully functional in 1992-93, a capacity for enrolment of about 10 lakh students in 9000 schools at + 2 level was created. Facilities for the introduction of vocational courses have been created in the six major areas of agriculture, business and commerce, engineering and technology, health and paramedical, home science and humanities, and science and education. The PSSCIVE was responsible for developing the courses and course materials. Based on the recommendations of various committees/review

groups, the scheme was revised and was re-launched as Centrally Sponsored Scheme of Vocationalisation of Secondary and Higher Secondary Education in 2012. It took around 25 years for implementing vocational courses in the 6,800 schools and only 5% enrolment could be achieved in vocational courses in schools of the States/UTs. The key obstacles in the implementation of the VEP included negative image and low aspirational value, lack of integration with general education, mismatch between skill demand and supply, lack of industry engagement, lack of coordinated efforts for meeting quality standards and optimal utilisation of resources, lack of employability skills in the curriculum, improper operationalisation of a quality assurance framework and lack of focus on leveraging technology for promoting apprenticeship training to meet current and future skill demands of technology and automated industry.



Activity 1: Think-Pair-Share

Title : Work experience programme and pre-vocational education

Objective : To develop an understanding of the various aspects of work experience programme

Procedure

- The Resource Person poses a question to all the trainees to think independently about their answer in silence and take notes for themselves. The questions may include (i) Why work experience programme did not work well in schools?, What are the limitations of work based activities in schools?, Why work based education should be promoted in schools? How activity based learning in schools would be useful?, How work experience programme differs from pre-vocational education?, etc.
- After 10 minutes, the Resource Person asks the trainees to pair up with a nearby or assigned trainee and reach a consensus on the convincing response or generate many responses.
- After the trainees have discussed in pairs, the Resource Person asks pairs to share their responses with the Class.

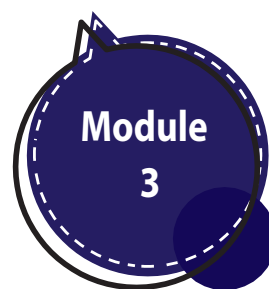
Self-assessment

- Write short note (80-100 words) on the following:
 - (i) Work experience programme in school
 - (ii) Pre-vocational education
 - (iii) Vocationalisation of education

Session 4: Vocationalisation of Education under SamagraShiksha

The National Policy for Skill Development and Entrepreneurship 2015 has set a target of integrating skilling with formal education from Grade IX onwards in 25% schools over the next 5 years and all formal and non-formal skill training programmes will have to align with the NSQF by December 2018. In order to realize the policy imperatives in school education, major interventions and strategies adopted in skill development at the secondary and higher secondary stage include

- (i) integration of academic and vocational education curricula,



(ii) offering courses to match the skill demands of the economic and social sectors,

(iii) implementing flexible curriculum design for linking qualifications with competence and employability,

(iv) preparing competent teachers and trainers,

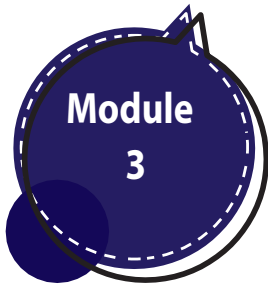
(v) assessment of competence based learning, and (vii) quality assurance.

The intent is to make vocational subjects available to the students, without streaming them into rigidly narrow programme of VET.

Pre-vocational Education from Classes VI to VIII under Samagra Shiksha

Pre-vocational education is now being envisaged as vocationalisation of school education from Classes VI to VIII under Samagra Shiksha (Integrated Scheme of School Education) to connect skill based activities with general academic subjects, like science, language, social science, etc. It will be useful in providing opportunities to the children to explore the basic skill requirements for the various productive tasks in the world of work. The underlying idea behind such work based activities is to make them as an integral part of the teaching-learning process rather than as an add-on to the existing scheme of studies of education from Classes VI to VIII. It will not only reduce the boundaries between the bookish knowledge and application of knowledge, but will also expose children to the skill requirements in the work areas, thus helping them to decide the future career path. These multi-skill activities, inter alia, would also foster the development of soft skills, such as aesthetic values, cooperation, team-work, judicious use of raw materials, creativity, quality consciousness, etc. Students shall also visit organizations and people engaged in different occupations for insightful knowledge and skills related to potential areas of future employment.

The general education teachers of languages, mathematics, science, social science, art, music, and work experience would be involved in the organisation of the skill-based activities related to the themes that they are teaching. The teaching-learning methodology may be based on observation, manipulation and practice. Design, craft, and technology will become part of general education, which will help attract a greater number and diversity of students to careers in technology. Concerned subject teachers may be trained in the use of teaching



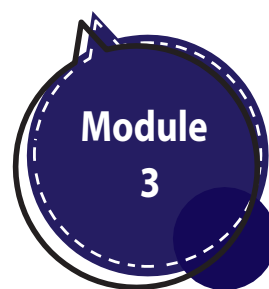
techniques that support activity based learning, including hands-on learning, problem solving, cooperative or team based projects, lessons requiring multiple forms of expressions, project work that draws on knowledge and skills from several domains. Students may also visit organizations and people engaged in different occupations for insightful knowledge and skills related to potential areas of future employment.

The vocational modules on soft and hard skills will help children to explore the essential aspects of the world of work and prepare them for choosing a vocational subject or a career options. Through the soft skills, children will develop dispositions, attitude and social competencies to become functional at personal and social level. The soft skills modules will develop communication skills and ICT skills. For vocational skills components, activities based on the themes given in the syllabus for the general education subjects will be organized as part of the syllabus.

Vocational Education from Classes IX to XII

At the secondary level (Classes IX & X), a vocational subject is offered as an additional or compulsory subject along with general education subjects. At the higher secondary level (Classes XI & XII), it is offered as a compulsory (elective) subject. The curriculum of vocational subjects is aligned to the National Occupation Standards (NOSs) for an occupation or a job role in a sector. The schools offer two vocational subjects, with 40 students in each section.

There are 8433 schools in 27 States/UTs offering vocational subjects under Samagra Shiksha. Currently ducation programme in schools.



Input

- Infrastructure
- Teachers/Trainers
- Students
- Teaching-learning material

Processes

- Enrolment
- Curriculum transaction
- On-the-job training
- Assessment& Evaluation

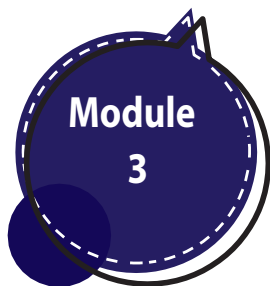
Output

- Certified skilled manpower

Sectors

The sectors in which vocational subjects are being offered through the school vocational education programme are as follows:

S. No.	Sector
1.	Agriculture
2.	Apparel, Made-ups and Home Furnishing
3.	Automotive
4.	Banking, Financial Services and Insurance
5.	Beauty and Wellness
6.	Building and Construction
7.	Electronics and Hardware
8.	Healthcare
9.	Information Technology-IT enabled Services
10.	Logistics
11.	Media and Entertainment
12.	Organised Retail
13.	Plumbing
14.	Power Sector
15.	Private Security
16.	Telecommunication
17.	Tourism and Hospitality



Introduction of Vocational Courses

Selection of vocational courses

The selection of vocational courses by the States/UTs is based on the assessment of skill needs conducted nationally and locally.

Infrastructure

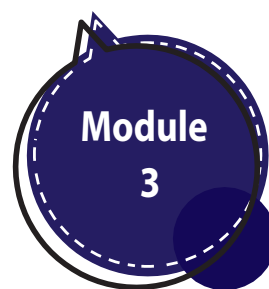
Classroom-cum-lab/workshop are developed in the schools to ensure effective practical training of the students. Lab equipment and resources are based on the requirements of the subject and the financial limits. The list of tools, equipment and materials for setting up the lab/workshop are provided by the PSSCIVE in consultation with the concerned Sector Skill Council.

Enrolment of students

Enrolment drives, provision of special facilities, working in close collaboration with parents and community based organization are being organised to ensure participation of special groups in vocational education. Extensive awareness and publicity campaigns through mass media (newspapers, radio, internet, etc.) and rallies are being taken up for dispelling the negative attitude towards vocational education and attracting young students to the vocational courses.

Vocational guidance and counselling

Vocational guidance and counselling drives are being organized in the schools involving experts and Counsellors, with special counselling sessions for girls.



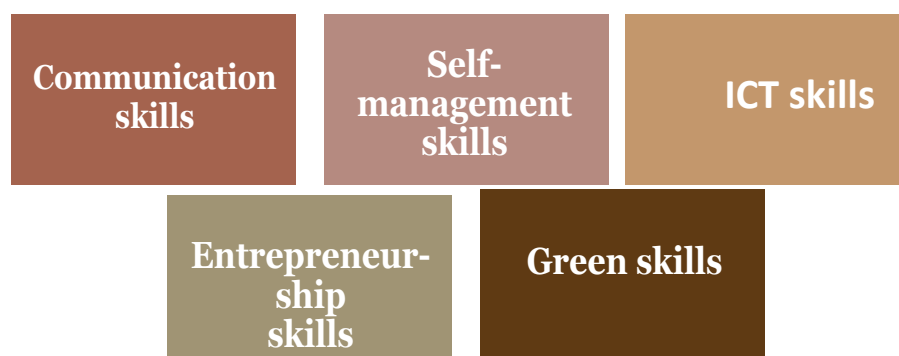
Appointment of Vocational Teachers

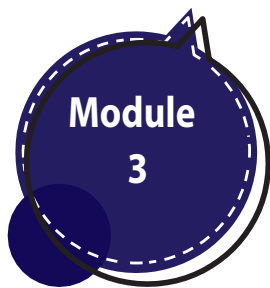
Vocational courses are conducted with the help of Vocational Teachers/Trainers, recruited by the State Government or the NSDC empaneled Vocational Training Providers (VTPs) as well as guest faculty on need basis. The PSSCIVE makes recommendations regarding qualification criteria for engaging Vocational Teachers and the common rules and standards for recruitment, service conditions, criteria and processes for appraisal, evaluation, recognition and rewards are being implemented across all the States/UTs.

Vocational Curriculum

Learning outcomes based The vocational curriculum, which is based on learning outcomes. comprises (i) employability skills and (ii) vocational skills.

The employability skills modules include communication skills, self- management skills, information and communication technology skills, entrepreneurship skills, and green skills.





Aligned to National Occupation Standards

National curriculum and courseware development agency

Learning outcomes are based on National Occupation Standards (NOSs)³ given in the Qualification Packs (QP) of the job roles in various sectors.

Curriculum and courseware development is being done by the PSS Central Institute of Vocational Education, Bhopal. The teaching- learning materials include student textbook, teacher handbook and e-learning materials. The textbooks are published by the National

³The National Occupation Standard (NOS) specifies the standard of performance an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding they need to meet skill standard.

Council of Educational Research and Training (NCERT). These are made available on the website of NCERT and PSSCIVE.

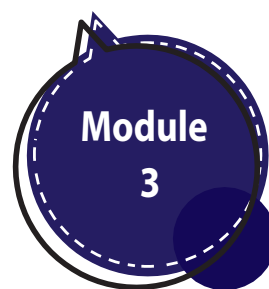
Capacity building of key functionaries

Orientation programme for Officials of State Education Departments and Boards

Officials of the Department of Education at the State and District level, Principals and Vocational Coordinators are orientated on the effective implementation of Vocationalisation of education in the States/UTs.

Training programme for Vocational Teachers/Trainers

The PSSCIVE acts as the principal coordinating agency for organizing teacher training programmes. An induction training of 10 days duration for newly recruited vocational teachers are organized by the States/UTs for all the selected teachers/skill trainers. In-service training programmes of 5 days on pedagogy, subject content and other related aspects of vocational education are organized by the PSSCIVE and State Education Departments for all teachers/skill trainers through established training institutes having necessary



experiences and expertise. The training programmes are organised by the State Implementing Agency in collaboration with PSSCIVE and Sector Skill Councils. Training programmes on communication skills, self-management skills, ICT skills, entrepreneurship skills, green skills, vocational guidance and counselling, and assessment and evaluation are organised by PSSCIVE and States/UTs. Vocational teachers are being trained in utilizing e-learning materials, instructional video-films and interactive computer aided programmes for supplementing teaching and providing a wide variety of learning experiences to the learners. Training programmes are organized with the help of industry experts and Sector Skill Councils for upgradation of domain-specific competencies. Pre-test and Post-test is conducted in teacher training programmes for training need analysis and to improve the quality of training.

Curriculum Transaction

Curriculum is being transacted in classroom, laboratory or workshop and field. Field visits of students are organized in industry and actual work situations to enable them to understand and appreciate the real-time work requirements and make choices accordingly. Special training classes for teachers and students on entrepreneurship are conducted, besides giving necessary guidance to the students for setting up their own ventures. The industry and specialized organisations/ institutions support the training in terms of skill training by resource persons or experts, assessors, and engaging vocational passouts for apprenticeship training. A component of internship or on-the-job training is an integral part of the curriculum transaction. Students are required to complete a minimum of 80 hours of workplace learning or on-the-job learning.

Vocational teachers should possess a working knowledge of the communication skills, ICT skills, generic skills, vocational skills and values needed for performing effectively and efficiently in an occupation or business enterprise, so that he/she can provide relevant learning experiences to students for achieving realistic vocational goal or career. Effective communication ability would help a vocational teacher to effectively utilize teaching aids and transact curriculum. Vocational teachers should also utilize instructional video-films and interactive computer aided programmes for supplementing teaching with audio-visual aids and providing a variety of learning experience to the students through effective curriculum transaction.

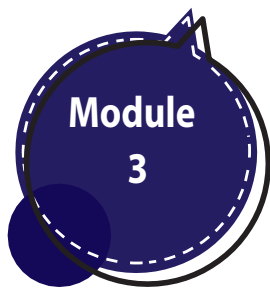


Table 2: Roles and functions of Vocational Teacher

- Plan teaching and training sessions.
- Demonstrate competencies including content knowledge, practical skills, communication skills, presentation skills, numeracy skills, social skills, pedagogy skills, evaluation skills, etc.
- Use a variety of teaching and training aids including multimedia.
- Demonstrate values, work ethics and empathy towards students.
- Demonstrate concern for safety, health and environment.
- Maintain all kinds of student's records- (attendance record, student's progress report, on-the-job training record, on-the-job training, assessment report, field visit record, student log book, non-scholastic achievements record, etc.).
- Evaluate the performance of students continuously and provide feedback.
- Motivate students to learn and encourage them to become self-directed learners.
- Assess the competencies of students and evaluate their performance.
- Contribute to the placement of vocational students for on-the-job training and apprenticeship training.
- Conduct action research.
- Participate in training programmes, seminars, conferences, workshops, etc.

Assessment and evaluation of learners

The competencies acquired by the learners are assessed and certified by the awarding bodies i.e. the concerned National and State Examination Boards to which the schools are affiliated along with the concerned Sector Skill Council. External assessment and evaluation is done in Classes X and XII. The examination includes both written assessment of knowledge and practical skills in employability and vocational skills. Students prepare student portfolio from Classes IX to XII. The student portfolio is evaluated as per the scheme of examination. Besides the certificate given by the examination boards, a separate certificate is also given by the NSDC and SSC to the successful candidates.

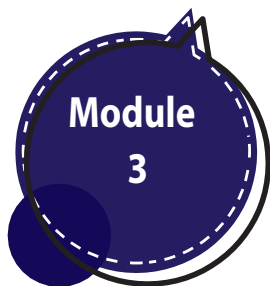
Vertical mobility of learners

The vertical progression in vocational education has been strengthened through a continued access to vocational courses offered as diploma, advanced diploma and degree courses. B. Voc. Program has been designed by the University Grants Commission (UGC) to provide judicious mix of skills related to a profession and appropriate content of general education with exit points for diploma, advanced diploma and degree. The curriculum is a suitable mix of the general education component and skill education component in a ratio of 40:60. A vocational passout from school can gain entry into vocational courses offered by Polytechnics, Industrial Training Institutes and higher education institutions, including Bachelor of Vocation (B.Voc.) and Masters in Vocation (M.Voc).

Apprenticeship training

Apprenticeship is an agreement between a person (an apprentice) who wants to learn a skill and an industry/organization (apprenticeship training provider or potential employer). The Apprentices are taught the latest applications, processes and methodologies in their respective fields of work. This also acts as a transition phase for a school / college student from classroom to a work environment. The apprentice also learns soft skills, work culture, ethics and organizational behaviour while undergoing training.

The National Apprenticeship Training Scheme (NATS) is a one year programme equipping technically qualified youth with practical knowledge and skills required in their field of work. There are 126 subject fields for graduate / diploma students for which training is provided. The Apprentices are imparted training by the organizations at their place of work. During the period of apprenticeship, the apprentices are paid a stipend amount, 50% of which is reimbursable to the employer from Government of India. At the end of the training period the apprentices are issued a Certificate of Proficiency by Government of India which can be registered at all employment exchanges across India as valid employment experience. The apprentices are placed for training at Central, State and Private organizations which have excellent training facilities.



Apprentices Act 1961 amended in 1973, 1986 and 2014	The Apprentices Act 1961 was enacted with the objective of regulating the programme of training of apprentices in the industry (industry means any industry or business in which any trade, occupation or subject field in engineering or non-engineering or technology or any vocational course may be specified as a designated trade or optional trade or both) by utilising the facilities available therein for imparting on-the- job training. The Act was amended in 1973 and 1986 to include training of graduates, technicians and technician (vocational) apprentices, respectively under its purview. Optional trade means any trade or occupation or any subject field in engineering or non-engineering or technology or any vocational course as may be determined by the employer for the purposes of this Act. There are four categories of apprentices namely; trade apprentice, graduate, technician and technician (vocational) apprentices. Qualifications of trade apprentices vary from class VIII pass to XII pass (10+2) system. Period of training varies from 6 months to 4 years.
Implementation of Apprentices Act 1961	The apprenticeship training scheme is being implemented through the four Regional Boards of Apprenticeship Training (BOAT) at Mumbai, Kolkata, Chennai and Kanpur. The State Education Department and District Education Office liaise with the BOATS for apprenticeship training of the students.
Minimum age for Apprenticeship training	The Act sets the minimum age for being engaged as an apprentice at 14 years and that for apprenticeship in designated trades related to hazardous industries is 18 years.
Number of apprentices	The Central Government prescribe the number of apprentices to be engaged by the employer for designated trade and optional trade.
Basic training	The Act states that trade apprentices who have not received prior institutional training shall be imparted basic training before admission in the workshop for practical training. The Bill specifies that such training can be provided in any institute with adequate facilities.

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Module 3

Programme Management Unit

Programme Management Unit (PMU) at the state level has been set up by some states for effective implementation and monitoring of the vocational education programme on the basis of guidelines and norms. A system of Management Information System (MIS) has been created by the MHRD for proper monitoring and evaluation of the scheme of vocationalisation of school education.

Placement of vocational passouts

Job fairs are organized by the States in collaboration with Sector Skills Councils for providing a forum to the students to interact with the potential employers or recruiters and to provide information about the government schemes available for education and employment.

Educational loans

Educational loan for vocational training and studies covers expenses including tuition/course fee, examination/library/laboratory fee, purchase of books, equipment and instrument and security deposit if any. The bank provides funds for schools recognized by central or state education boards or colleges affiliated to recognized university leading to a certificate, diploma, degree issued by such organization as per NSQF Industrial Training Institutes (ITIs) courses, Polytechnics, National Skill Development Corporation (NSDC) affiliated training partners, and other training organisations associated with Sector Skill Councils, State Skill Mission, State Skill Corporation. The courses or training should translate into a certificate, diploma or degree from an organisation falling under NSQF. There is no requirement of collateral or third party guarantee. The parent/guardian will execute loan documents along with the student, as joint borrower and spouse will be included as co-applicant wherever applicable, in addition to parent/natural guardian.

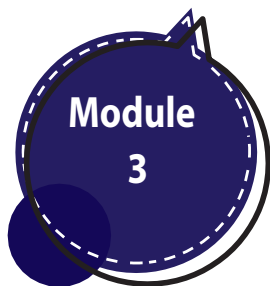
Activity 1: Role Play

Theme: Importance of vocational education and training

Situation: A girl wanted to celebrate her birthday. The whole market was closed on that day due to some disturbance. One of her friends had done a vocational course in bakery. He volunteered to prepare a cake for her.

Procedure:

- Form groups with three students in each group.
- Identify the characters for the role play
- Act out a conversation between the three people.
- Discuss what you learned from this.



Self- Assessment

1. Describe any three challenges that you think are the most important that vocational teacher.
2. Write any five major roles and functions of a vocational teacher
3. Describe in short (50 words) any three skills that a teacher should possess to impart vocational knowledge and skills to students.

Definitions and Acronyms

Vocational Education is described as “all forms and levels of the educational process involving, in addition to general knowledge, the study of technologies and related sciences, the acquisition of practical skills, know-how, attitudes and understanding relating to occupations in the various sectors of economic and social life” (UNESCO).

Vocationalisation of Education has two dimensions: (i) provision for development of generic and basic technical skills alongside general education throughout the ten-year of schooling; and (ii) provision for development of generic and specialized technical skills at the higher secondary stage and post secondary stage for enhancing individual’s employability and to prepare him/her for the ‘world of work’(UNESCO,1985).

MHRD	Ministry of Human Resource Development
MSDE	Ministry of Skill Development and Entrepreneurship
NCERT	National Council of Educational Research and Training
PSSCIVE	PanditSundarlal Sharma Central Institute of Vocational Education
NOS	National Occupation Standards
SSC	Sector Skill Council
AT	Apprenticeship Training
NATS	National Apprenticeship Training Scheme
GOI	Government of India

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5. National Apprenticeship Training Scheme: <http://mhrdnats.gov.in/>
6. National Council of Educational Research and Training: <http://ncert.nic.in/>
7. National Institute of Educational Planning and Administration: <http://www.nuepa.org>
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