Handbook for Key Functionaries on

Vocational Education

(With Reference to NEP 2020 and NCF-SE 2023)

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NCERT

PSS CENTRAL INSTITUTE OF VOCATIONAL EDUCATION


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भारत
एक कदम स्वच्छता की ओर

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FOREWORD

The National Curriculum Framework for School Education 2023 (NCF-SE) recommends integrating work and education within the curricular framework, embedding it across all areas of learning while also giving it an identity of its own at relevant stages. School education should prepare students not only to understand the world around them but also to do productive work. These capacities for work will enable students to be productive members of their households as well as participate in the economy. In this context, NCF-SE 2023 envisions Vocational Education as an integral part of the curriculum. Through the Curricular Area of Vocational Education, students will be introduced to and develop foundational skills in three forms of work: work with life forms, work with machines and materials, and work in human services.

The school curriculum at the Preparatory and Middle Stages will build relevant competencies in the three forms of work, laying the foundation for capacities aligned with the primary, secondary, and tertiary sectors, contributing to economic participation. In the four-year Secondary Stage, the first two years will focus on consolidating these capacities to develop transferable skills. In the final two years, students will specialise in specific vocational areas of their choice.

The present document Handbook for Key Functionaries on Vocational Education based on the recommendation of NEP 2020 and NCF-SE 2023 is an essential resource for educators, policymakers, and administrators, offering comprehensive guidance on implementing vocational education, aligning it with policy goals, adopting innovative pedagogical approaches, enhancing student engagement, and fostering collaboration among stakeholders to develop a robust vocational education framework. Furthermore, it also reflects the spirit of NEP 2020 and NCF-SE 2023, which advocates for experiential learning and seamless integration of vocational streams with academic subjects, fostering a multidisciplinary and integrated approach to education.

I express my gratitude to everyone involved in the development of this handbook and hope that it meets the expectations of all stakeholders and invite constructive suggestions and feedback from its users for future editions.

DINESH PRASAD SAKLANI
Director
National Council of Education
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PREFACE

The National Education Policy 2020 envisions an educational system rooted in Indian ethos and civilizational achievements across all domains of human knowledge and endeavour, while simultaneously preparing students to engage constructively with the opportunities and challenges of the 21st century. This aspirational vision has been comprehensively outlined in the National Curriculum Framework for School Education (NCF-SE) 2023, which addresses all curricular areas across educational stages.

As an apex organization in the field of vocational education, the PSS Central Institute of Vocational Education (PSSCIVE) has been at the forefront of promoting skill-based education in India. The Institute continuously undertakes new initiatives to develop an integrated system of vocational education and provides advisory services and assistance to the Ministry of Education (MoE), Government of India, and state governments for implementing the vocationalisation of education under the National Skill Qualification Framework (NSQF).

One of the key functions of PSSCIVE involves planning and organising orientation/awareness and induction programs for key functionaries responsible for implementing vocational education in schools across various states and Union Territories (UTs). For effective implementation of these initiatives, it is essential to have comprehensive resource materials that address crucial aspects of vocational education. These materials serve as guiding documents for administrators, educators, teachers, and other stakeholders. This in turn, will enhance the efficiency of training programmes and supports key functionaries in fulfilling their roles effectively.

In response to these developments and needs, the Institute has developed the Handbook for Key Functionaries on Vocational Education with reference to NEP 2020 and NCF-SE 2023. This handbook is designed to serve as a resource for key functionaries across all states, providing them with a clear understanding of vocational education implementation in schools from Grades 6 to 12. By offering valuable insights and guidance, the handbook aims to empower key functionaries in their critical role of strengthening vocational education in India.

The development of this handbook has been a collaborative effort, with valuable contributions from faculty members of PSSCIVE, external experts, and reviewers from various organizations and institutions. Their expertise is gratefully acknowledged, and the effectiveness of this document will ultimately be determined by its utility across different states. Its essence is suggestive in nature and can be embraced and modified by the states, union territories, and other stakeholders as required. We encourage stakeholders to provide feedback and suggestions, which will help us enhance the quality and usability of this handbook.

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We are grateful to the Director of the National Council of Educational Research and Training (NCERT) for providing constant support in the development of this handbook.

This handbook is the result of a collaborative effort, and we extend our sincere gratitude to Deepak Paliwal, *Joint Director*, PSSCIVE, for his invaluable academic guidance.

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PSSCIVE welcomes suggestions from key functionaries and other stakeholders to help us further improve the quality and usefulness of this material in future editions.

ABOUT THE HANDBOOK

Vocational Education equips students with industry-relevant skills, fosters employability, and supports national economic growth. With NEP 2020 and NCF-SE 2023, vocational education has renewed emphasis in Indian schooling. This handbook supports State/UTs officials, School administrators, and policymakers in implementing vocational education from Grades 6 to 12.

This handbook provides a comprehensive understanding of vocational education by presenting a structured framework that includes outlining the key roles and contributions of PSSCIVE. Essential vocational education terminologies are also defined to ensure clarity among stakeholders. The historical perspective of vocational education highlights policy developments and reforms. The integration of vocational education under Samagra Shiksha is explored/analysed, focusing on funding mechanisms and its strategic implementation. NEP 2020 and NCF-SE 2023 emphasise vocational learning, detailing their objectives and implementation strategies.

Furthermore, this handbook covers the middle-stage vocational education framework for Grades 6 to 12, emphasising early exposure to vocational skills. Innovative learning approaches, including fun-based learning, bagless days, and the hub-and-spoke model, are also highlighted in detail. Employability skills essential for workforce readiness, real-world training through internships, apprenticeships, and vocational fairs like *Kaushal Utsav* is covered. In the document the student support system, including mentorship and financial assistance, ensures equitable access to vocational education is also given/provided.

Awareness and promotion strategies, along with the community and industry participation, play a crucial role in vocational education expansion. Competency-based assessment methods and evaluation strategies are highlighted in detail. Teachers' training for quality vocational education is emphasised, along with the role of state and district officials in implementation. Inclusive vocational education for children with special needs ensures accessibility. Finally, vocational education in higher institutions bridges the gap between school-based training and career pathways.

This has been developed with the support schools and educators in ensuring skill-based learning, enhancing student engagement, and preparing learners for real-world career opportunities. By aligning with contemporary educational policies and best practices, this handbook serves as a comprehensive reference for driving vocational education initiatives in schools across India.

With the incorporation of case studies, best practices, and real-world examples, this handbook serves as a valuable tool for educators striving to make vocational education an integral part of the school curriculum as envisioned in NEP 2020.

Vipin Kumar Jain
Associate Professor and
Project Coordinator
PSSCIVE

CONSTITUTION OF INDIA

Part III (Articles 12 – 35)
(Subject to certain conditions, some exceptions
and reasonable restrictions)

guarantees these

Fundamental Rights

Right to Equality

- before law and equal protection of laws;
- irrespective of religion, race, caste, sex or place of birth;
- of opportunity in public employment;
- by abolition of untouchability and titles.

Right to Freedom

- of expression, assembly, association, movement, residence and profession;
- of certain protections in respect of conviction for offences;
- of protection of life and personal liberty;
- of free and compulsory education for children between the age of six and fourteen years;
- of protection against arrest and detention in certain cases.

Right against Exploitation

- for prohibition of traffic in human beings and forced labour;
- for prohibition of employment of children in hazardous jobs.

Right to Freedom of Religion

- freedom of conscience and free profession, practice and propagation of religion;
- freedom to manage religious affairs;
- freedom as to payment of taxes for promotion of any particular religion;
- freedom as to attendance at religious instruction or religious worship in certain educational institutions.

Cultural and Educational Rights

- for protection of interests of minorities;
- for minorities to establish and administer educational institutions;
- saving of certain Laws 31A–31D.

Right to Constitutional Remedies

- by issuance of directions or orders or writs by the Supreme Court and High Courts for enforcement of these Fundamental Rights.

CONTENTS

THE CONSTITUTION OF INDIA

PREAMBLE

WE, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a [1]**[SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC]** and to secure to all its citizens :

JUSTICE, social, economic and political;

LIBERTY of thought, expression, belief, faith and worship;

EQUALITY of status and of opportunity; and to promote among them all

FRATERNITY assuring the dignity of the individual and the [2][unity and integrity of the Nation];

IN OUR CONSTITUENT ASSEMBLY this twenty-sixth day of November, 1949 do **HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION.**

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1. Subs. by the Constitution (Forty-second Amendment) Act, 1976, Sec.2, for "Sovereign Democratic Republic" (w.e.f. 3.1.1977)
2. Subs. by the Constitution (Forty-second Amendment) Act, 1976, Sec.2, for "Unity of the Nation" (w.e.f. 3.1.1977)

CHAPTER
1

Key Roles and Functions of PSSCIVE

OVERVIEW

The Pandit Sunderlal Sharma Central Institute of Vocational Education (PSSCIVE) is an apex research and development organisation in the field of vocational education in India. It is a constituent unit of National Council of Educational Research and Training (NCERT), established in 1993 by the Ministry of Education (MoE) formerly known as MHRD, Government of India. The Institute has a picturesque 38 acre campus at Shyamla Hills, Bhopal M.P. The institute has 06 departments and 05 centres working effectively in the field of Vocational Education.

The Institute is also a UNEVOC (International Project on Technical and Vocational Education) Network Centre in India, which coordinates all the activities, including communication with UNESCO-UNEVOC International Centre, Bonn, Germany. Through the network, the Centre shares knowledge and experiences related to all aspects of Vocational Education (VE), exchange country experiences, and discuss issues of common relevance.

The Institute is conducting activities in 4 core areas of research, curriculum and resource development, training and extension programmes on vocational education. The orientation of key functionaries and capacity building of vocational teachers is done on various aspect of implementation of vocational education. The highly qualified team of the Institute possesses excellent professional skills and experience required to organise various programmes and activities of the institute. The evolution of the Institute in the last 30 years witnesses various challenges, but these has served as opportunities to explore new horizons and work on possibilities of reimagining vocational education in light of NEP 2020 and NCF-SE 2023, for meeting the skill needs of the people at the local and global

canvas. The institute is playing an important role through supporting States/UTs in implementation of Vocational Education aligned with the recommendations of NEP 2020 and NCF-SE 2023.

Objectives

After the completion of this chapter, you will be able to:

1. provide a comprehensive overview of the PSSCIVE, its vision, mission, roles, functions, infrastructure and significance in the vocational education landscape.
2. describe PSSCIVE's involvement in the implementation and strengthening of Vocational Education in India.
3. highlight recent initiatives undertaken by PSSCIVE to implement and improve the activities related to vocational education.

Institute's Vision

To be a leading organisation to strengthen vocational education and training system to meet the skill needs of the current and future workforce.

Institute's Mission

To build the capacity of Vocational Education institutions for meeting the skill needs of current and future workforce.

Roles and Functions

The role and functions of PSSCIVE have been summarised below:

- Advise and assist the Central and State/UT governments in the implementation of vocationalisation of education in schools.
- Develop guidelines, curricula, courseware and digital resource materials for a wide spectrum of target groups, including children with special needs.
- Promote and conduct research to gain new knowledge and to bring about qualitative improvement in the vocationalisation of education in schools.

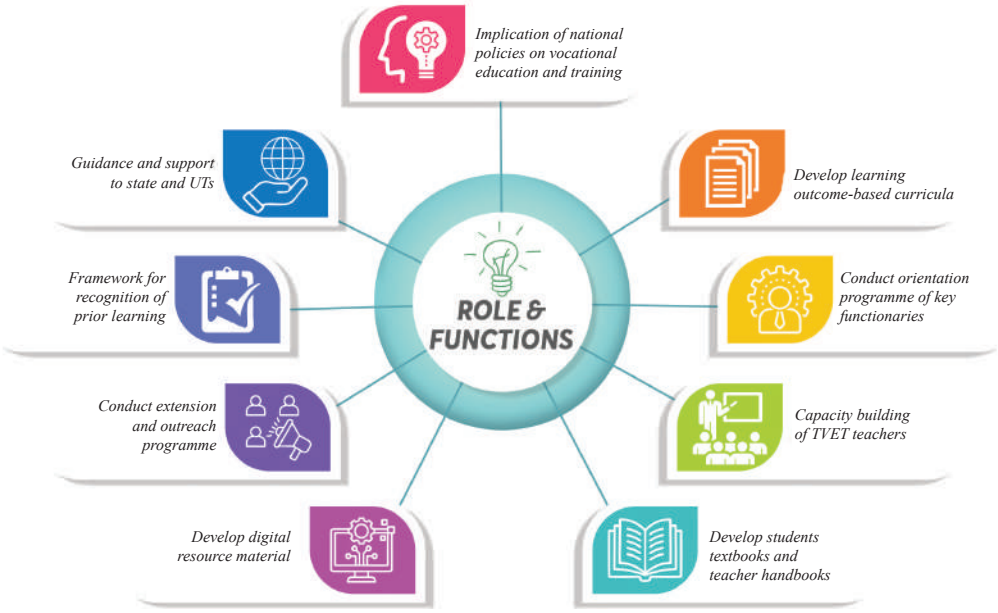

Fig 1.1: Roles and Functions of PSSCIVE

- Develop vocational courses and programmes under the National Skill Qualification Framework (NSQF).
- Offer a wide range of courses and training programmes for capacity building of key functionaries and vocational teachers/ trainers.
- Collaborate with national and international organisations, institutions, and agencies for the promotion of quality Vocational Education across world.
- Share experiences and ideas through various extension activities.
- Organise national and international seminars, conferences and workshops to provide a forum for discussion and strategic directions for effective implementation of VE.
- Develop virtual skill labs for vocational courses to enhance learning through simulation.

Departments, Centres, Campus Facilities and Infrastructure of PSSCIVE

Departments

The Institute has the following 06 Departments:

1. **Department of Agriculture and Animal Husbandry (DAAH):** This department operates in designing and developing vocational courses and teaching-learning materials in different areas of agriculture and allied sectors under the National Skill Qualification Framework (NSQF). The Department is also involved in training of key functionaries and teachers, and in conducting researches in the field vocational education. The department aims to the promotion of vocational courses for supporting sustainable agriculture such as organic farming, vermicompost production, etc., as well as improving the production, processing and quality of food.
2. **Department of Business and Commerce (DBC):** The department involves in developing guidelines, curricula and teaching-learning materials for the vocational education in various service-related sectors, such as retail, logistics, banking, financial services and insurance. Over the years, the department has developed the credibility of designing and developing courses and conducting training programmes for vocational teachers working in different service sectors.
3. **Department of Engineering and Technology (DET):** The department involves the designing and implementation of programmes and activities for research, development of guidelines, curricula and teaching-learning materials for vocational courses related to various sectors in engineering and technology, including automotive, electronics, information technology, IT-enabled services, power, etc. Besides research and development inputs, the department conducts training in vocations related to engineering and technology.
4. **Department of Health and Paramedical Sciences (DHPS):** The department is contributing to the development of high-quality middle level skilled manpower in the health sector. The department strives for innovation and continuous improvement in the quality and relevance of the training programmes and activities for the development of curricula and teaching-learning materials in healthcare sector.

5. **Department of Home Science and Hospitality Management (DHSHM):** The department involves in organising programmes and activities for development of curricula and courseware and conducting orientation and training programmes for the teachers and instructors teaching home science based vocational courses. It has developed courses for a wide range of services in different sectors, including Apparel, Textiles, Tourism and Hospitality, etc.
6. **Department of Humanities, Science and Education Research (DHSER):** The department having a wider scope, provides research and development inputs for guiding the process of developing curricula, courseware and other materials in areas like performing arts, commercial art, entrepreneurship development, rural development, etc.

Fig 1.2: Departments of PSSCIVE

Centres

1. **Programme Planning and Monitoring Centre (PPMC):** This centre coordinates the process of programme formulation, monitoring and evaluation. It also compiles periodic reports of the activities organised by the Institute. It works for the

implementation of all the programmes approved by the Institute Advisory Board (IAB) of PSSCIVE and Programme Advisory Committe (PAC) of NCERT. It also coordinates with the Programme Monitoring Division of NCERT for monitoring and evaluation of programmes.

2. **Curriculum Development and Evaluation Centre (CDEC):** This centre coordinates the activities of development, evaluation and vetting of curricula and courseware for the vocational subjects in schools under the National Skill Qualification Framework. The Centre has developed the design for the learning outcome-based curricula and courseware.
3. **Centre for International Relations (CIR):** The centre contributes to the international networking and development of relations with various international institutions or organisations for academic exchange.
4. **UNEVOC Network Centre:** This centre is one of the centres in India, which coordinates all the activities, including communication with UNESCO-UNEVOC International Centre, Bonn, Germany. Through the network, the centre shares knowledge and experiences related to all aspects of TVET, exchange country experiences, and discuss issues of common relevance.
5. **ICT Centre:** The centre contributes in developing digital resources or E-content for vocational courses. It also provides for photography and videography services during different activities of the Institute. The centre also operates acoustic E-studio with all state-of-art facilities required for audio and video recording. Apart from this, ICT Centre is also responsible for the maintenance and supervision of the PSSCIVE website, Intranet, Internet and Wi-Fi facilities.

Campus Facilities and Infrastructure

- **Guest House and Hostel:** The Institute has a well-furnished guest house and hostel facility for the officials, teacher-trainees and visitors visiting the institute.
- **Auditorium and Seminar Hall:** The Institute have a well-equipped auditorium and seminar hall. This serves as a regular venue for conferences, workshops and seminars, and is equipped with all requires facilities.

Fig 1.3: Campus Facilities and Infrastructure

- **Committee Hall and Meeting Rooms:** Each department has well equipped classroom and meeting rooms, with comfortable seating arrangement for providing better teaching learning environment.
- **Laboratories:** The institute has following six well-equipped labs where teachers and stakeholders engage in hands-on experiences. These labs also serve as a leaning hub for students of the PGDVET programme, as well as participants from other activities:
  - (i) Agriculture and animal husbandry lab
  - (ii) Automobile lab
  - (iii) Food technology & processing lab
  - (iv) Health and paramedical lab
  - (v) Retail lab
  - (vi) Textile and clothing lab
- **Library:** The Library of the Institute has all kinds of print and non-print resources, including textbooks, reference books, periodicals, newspapers, manuscripts, DVDs and learning materials in other formats. The well-stocked library offers users access to a wide range of printed resources.
- **Computer Centre:** The computer centre is well-equipped to handle the academic and administrative needs of the institute. It houses the state-of-the-art computers with latest software. It has Wi-Fi connectivity.

Summary

The Pandit Sunderlal Sharma Central Institute of Vocational Education (PSSCIVE), established in 1993 under NCERT in Bhopal, is India's apex research and development organisation for vocational education. It comprises six departments and five centres and serves as a UNEVOC Network Centre, engaging in international collaboration. PSSCIVE aims to strengthen vocational education and training systems to meet workforce needs, aligning with NEP 2020 and NCF-SE 2023. Its core functions involve advising government bodies, developing curricula and digital resources, conducting research, and providing capacity-building training for vocational teachers. It also promotes national and international collaborations and organises seminars.

PSSCIVE's departmental structure covers various sectors, each focused on developing relevant vocational courses. Its centres support diverse functions like programme planning, curriculum development, international relations, UNEVOC networking, and ICT. The institute has infrastructure including laboratories, a library, a computer centre, a guest house, and an auditorium. Through research, development, training, and extension activities, PSSCIVE plays a crucial role in advancing vocational education, fostering employability, and addressing the evolving skill demands of the nation.

CHAPTER
2

Terms to Know

Overview

Vocational Education and Training (VET) is essential for equipping students with practical skills and knowledge for the workforce. The National Education Policy 2020 (NEP 2020) and the National Curriculum Framework for School Education (NCF-SE) emphasise the integration of VET into the mainstream curriculum to enhance employability foster skill education and meet the diverse needs of learners. This glossary provides key terms and concepts in VET, aligning with NEP 2020 and NCF-SE guidelines. Understanding these terms will aid educators, students, and stakeholders in navigating and implementing effective vocational education programme.

Objectives

After the completion of this chapter, you will be able to:

1. familiarise with clear definitions of technical terms used in vocational education.
2. ensure consistent understanding of terminologies.

Generic Terms

1. **Academic Education:** Education that emphasises theoretical knowledge and intellectual pursuits rather than practical skills.
2. **Action Plan:** Detailed plan outlining specific actions, targets, and timelines for achieving vocational education goals.
3. **Apprentice:** A person who is undergoing apprenticeship training in pursuance of a contract of apprenticeship.
4. **Apprenticeship:** Training under skilled workers to gain practical experience.

5. **Apprenticeship Training:** It is the combination of on-the-job training and the classroom training, wherein the Learners (apprentice) earn while learning the skills required for performing the specialised job.
6. **Aspirational Vocations:** Jobs or careers that people aspire to do due to their perceived prestige or benefits.
7. **Assessment:** The process of evaluating the knowledge, skills, and abilities of students.
8. **Bachelor of Vocation (B.Voc.):** Bachelor's degree programme designed to provide vocational skills and knowledge to students.
9. **Career Counselling:** Guidance and advice provided to individuals to help them make informed decisions about their career paths.
10. **Career Development:** Programmes and activities promoting long-term career growth.
11. **Career Pathways:** Structured routes leading to employment in specific fields.
12. **Career Skills:** Abilities critical for success in specific professions or trades.
13. **Carpentry:** The skill of cutting, shaping, and installing building materials, particularly wood.
14. **Certification:** Official recognition of completion of vocational training.
15. **Cognitive Development:** Any mental activity relating to or involving the processes of thinking and reasoning.
16. **Cognitive Skills:** These are defined as the ability to understand complex ideas, to adapt environment effectively, to learn from experience and, to engage in various forms of reasoning, to overcome obstacles by taking thought.
17. **Collaboration:** Working together with others to achieve common goals.
18. **Communication:** The ability to convey information effectively and efficiently.
19. **Competency:** A combination of skills, knowledge, and attitudes necessary to perform tasks effectively.
20. **Competency-based Training:** The training that focuses on achieving specific skills and competencies in vocational programmes.

21. **Continuing Education:** Further training and development beyond initial vocational education.
22. **Creativity:** The ability to think outside the box and come up with new and innovative ideas.
23. **Credit:** It is a recognition that a learner has successfully completed a prior course of learning corresponding to a qualification with pre-defined outcomes and at a given.
24. **Credit-based Framework:** System where academic credits are awarded based on the number of hours completed in a course.
25. **Critical Thinking:** Analytical and reflective thinking aimed at evaluating information and making reasoned judgments.
26. **Curiosity:** A desire to learn and understand more about a particular subject or the world in general.
27. **Curricular Areas:** Different subjects or fields of study included in a school's curriculum.
28. **Curricular Goals:** Broad educational objectives that guide the design and implementation of curriculum and instructional practices.
29. **Curriculum Integration:** Inclusion of vocational subjects within mainstream educational programmes.
30. **Customer Service Orientation:** An approach focused on providing excellent service to customers.
31. **Digital Skills:** Competence in using digital technologies for vocational purposes.
32. **Dignity of Work:** The concept that all types of work are valuable and should be respected.
33. **Discovery-based Learning:** Educational approach emphasising exploration, experimentation, and active learning.
34. **Economic Sustenance:** The ability to maintain financial stability and support oneself economically.
35. **Educational Partnerships:** Collaborations between educational institutions and industry stakeholders.
36. **Emerging Vocations:** New and developing types of work that are becoming relevant in the job market.
37. **Empathy:** The ability to understand and share the feelings of others.

38. **Employability Skills:** Abilities and traits that make individuals suitable for employment.
39. **Employer Feedback:** Input from employers on the skills and competencies needed in vocational graduates.
40. **Entrepreneurship Development:** Training in starting and managing businesses.
41. **Entry level Training:** The training undertaken to enter into the workforce or further vocational education and training.
42. **Faculty Career Management:** Systems and practices supporting the professional growth and development of academic staff.
43. **Field-based Exposure:** Learning experiences that take place in real-world settings, such as farms, factories and service centres.
44. **First Aid:** Basic medical care provided immediately after an injury or illness.
45. **Flexible Learning Pathways:** Options for students to choose vocational courses aligned with their interests.
46. **Formal Training:** The training that is given in an orderly, logical, planned and systematic manner in a specially equipped workshop under the guidance of a qualified trainer for a specific period of time in the specified field.
47. **Formative Assessment:** It refers to a variety of methods that teachers or trainers use to conduct in-process evaluation of student's understanding, learning needs and the academic progress during a session, unit, or a course.
48. **Forms of Work:** Categories of work based on their nature and required capacities, such as working with life forms, materials, and machines, or in human services.
49. **General Education:** Comprehensive education covering a wide range of subjects, often leading to academic qualifications.
50. **Generic Skills:** These are the transferable skills, which can be used across all occupational groups.
51. **Global Employability Ratio (GER):** An Indicator measuring the percentage of employable individuals within a specific population.
52. **Global Skills:** Abilities essential for success in a globalised job market.

53. **Governance and Regulatory Changes:** Policies and rules governing educational institutions and research activities.
54. **Green Skills:** These are the skills, knowledge, values and attitudes needed in the workforce to develop and support sustainable social, economic and environmental outcomes in business, industry and the community.
55. **Greening TVET:** It refers to the efforts to reorient and reinforce existing TVET institutions and policies in order to reinforce achievement of sustainable development. It clarifies the role of different green jobs and green skills in promoting sustainable development.
56. **Handicraft Work:** The creation of products by hand using materials such as paper, wood, clay, fabric, paints and inks.
57. **Hands-on Experience:** Practical experience acquired by actually doing or performing tasks rather than just reading or learning about them.
58. **Healthcare:** Services and practices aimed at maintaining or improving health.
59. **Holistic Education:** Approach to education that considers the cognitive, emotional, social, and physical development of students.
60. **Hospitality and Tourism:** Industries focused on providing services for travelers, including accommodation, food and recreational activities.
61. **Hub and Spoke Model:** Network configuration where smaller institutions (spokes) are connected to a central institution (hub).
62. **Human Services:** Vocations that involve providing services to individuals and communities, such as healthcare, education and social services.
63. **Inclusive Education:** Access to vocational training for all students, including those with disabilities.
64. **Incubation Centres:** Facilities supporting the development of entrepreneurial ventures and innovation.
65. **Indigenous Knowledge:** The knowledge that an indigenous (local) community accumulates over generations of living in a particular environment.
66. **Recognition of Prior Learning (RPL):** Individuals with prior learning experience or skills towards gaining a qualification.

67. **Industrial Spaces:** Areas or facilities where industrial activities, such as manufacturing or production, takes place.
68. **Industry Collaboration:** Partnerships between educational institutions and industries to enhance vocational education and training.
69. **Industry Demand Analysis:** Assessment of skills needed by industries for future workforce planning.
70. **Industry Engagement:** Involvement of industries in shaping vocational education programmes.
71. **Industry Immersion:** Exposure to real-world industry settings during vocational training.
72. **Industry Standards:** Guidelines and benchmarks for skills and practices within industries.
73. **Industry-recognised Certification:** Credentials acknowledged and valued by employers.
74. **Information Communication and Technology (ICT):** A diverse set of technological tools and resources used to create, store, transmit, share, or exchange information.
75. **Innovation:** The Introduction of new ideas, methods, or products to improve existing practices or create new opportunities.
76. **Integrated Approach:** An approach to learning in which different subject areas are integrated, intertwining, and permeating each other.
77. **Interdisciplinary Research:** Collaboration between researchers from different academic disciplines to address complex problems.
78. **Internship:** A period of work experience offered by an organisation for a limited period of time where the intern learn or understand the working of that organisation.
79. **Industrial Training Institutes (ITIs):** Institutions that provide technical education and training in various trades.
80. **Job Analysis:** It is the process of examining a job in detail to identify its component tasks; the detail and approach may vary according to the purpose for which the job is being analysed, e.g., training, equipment design, work layout, etc.
81. **Job Placement:** Assistance in securing employment after completing vocational training.

82. **Job Role:** These are unique set of skills performed by an Individual with in a particular occupation or sector.
83. **Job-oriented Education:** Training focused on acquiring skills directly applicable to employment.
84. **Job-relevant skill:** These are task-related and build on a combination of cognitive and socio-emotional skills.
85. **Kaushal Mela:** A skills (Kaushal) fair where students demonstrate their projects and learning outcomes to the community.
86. **Knowledge Creation:** The process of generating new ideas, theories, and innovations through research and intellectual inquiry.
87. **Knowledge:** It is the body of facts, principles, theories and practices that is related to a field of study or work.
88. **Knowledge Society:** Society where knowledge is a primary resource and key driver of social and economic development.
89. **Labor Market Demands:** Skills needed by industries for their workforce.
90. **Learner:** A learner is an individual undergoing vocation education or accruing a skill.
91. **Learning:** It is the process of acquiring new understanding, knowledge, behaviour, skills, values and attitudes.
92. **Learning Outcomes:** These are statements summarising the knowledge, skills, attitudes, and values that all learner must possess and demonstrate upon the completion of a learning experience or sequence of learning experiences.
93. **Learning progression:** A specific sequence of knowledge and skills that students are expected to learn as they progress through their education.
94. **Learning standards:** These are concise, written descriptions of what students are expected to know and are be able to do at a specific stage of their education.
95. **Learning-to-Learn:** The capacity to learn new skills and knowledge independently and continuously.
96. **Life Forms:** Biological entities, such as plants and animals, that are involved in vocations like agriculture, horticulture and animal husbandry.

97. **Local Industry Collaboration:** Partnership between educational institutions and local nearby businesses to enhance vocational training and education.
98. **Locally Contextualised Work:** Vocations that are relevant and applicable to the local community and environment.
99. **Locally Relevant Vocations:** Jobs or careers that are significant and offer opportunities within a specific local context.
100. **Logbook:** It is the personal data folder which contains all documentation and evidence relevant to each assignment and each module in the training and development roadmap and keeps a record of the awareness, knowledge, skills and attitude acquired during training and development.
101. **Machine and Materials:** Vocations that involve working with machinery and materials, such as manufacturing, construction, and engineering.
102. **Mainstream Education:** Traditional academic education that focuses on theoretical learning and prepares students for higher education.
103. **Management Information System (MIS):** A system for managing information within an organisation, often involving computer systems.
104. **Mentor:** A person who focuses on including students in an activity, supports them in case of questions and helps them learn work-related skills.
105. **Merit-based Funding:** Allocation of resources based on the quality and impact of research proposals.
106. **Motor Skills:** The abilities required to coordinate and control the movement of the body.
107. **Multidisciplinary:** Combining or involving more than one discipline or field of study into education.
108. **Muscle Memory:** The ability to reproduce a particular movement without conscious
109. **National Committee for the Integration of Vocational Education (NCIVE):** Committee tasked with overseeing and promoting the integration of vocational education across India.
110. **National Research Foundation (NRF):** Organisation focused on funding and promoting research across various disciplines.

111. **National Skills Qualifications Framework (NSQF):** Framework that organises qualifications according to levels of knowledge, skills, and aptitude.
112. **NSQF (National Skills and Qualifications Framework):** A competency-based framework consisted of ten levels, each representing different levels of complexity, knowledge and autonomy.
113. **Nature-friendly Farming:** Agricultural practices that are environmentally sustainable and promote biodiversity.
114. **NSQF Levels:** The levels within the NSQF framework, ranging from one to ten, indicating the complexity and autonomy of tasks.
115. **Nursery Management:** The process of growing and managing plants in a nursery setting.
116. **On-the-job Training:** It is refer to a form of professional learning experience provided to students at workplace (Industry, Company or Organisation) for meaningful practical engagement in the field of study.
117. **Open and Distance Learning (ODL):** Education delivered remotely, often using online resources and materials.
118. **Pathway to Higher Education:** Options for vocational students to pursue further academic studies.
119. **Peer-reviewed Research:** Evaluation of research papers by experts in the same field before publication.
120. **Performance Evaluation:** Assessment of students' practical skills and work performance.
121. **Persistence:** The ability to continue striving towards a goal despite challenges and setbacks.
122. **Personalised Learning:** Tailoring vocational education to meet individual student needs.
123. **Pest and Disease Control:** Methods and practices used to manage and prevent pests and diseases in agricultural settings.
124. **Phased Integration:** Gradual implementation of vocational education programs over a specified period.
125. **Phenomenon:** An observable fact or event that typically is unusual or difficult to
126. **Physical Development:** The growth and strengthening of the body's physical abilities through activities and exercise.

127. **Play-based Learning:** Educational method utilising play and exploration to enhance learning experiences.
128. **Policy Implementation:** The Process of putting educational policies into practice through specific actions and strategies.
129. **Polytechnics:** Institutions offering vocational education in engineering and technical fields.
130. **Portfolio:** It is a compilation of academic work and other forms of evidence to evaluate students learning. It is a set of pieces of creative work intended to demonstrate a person's ability to a potential employer.
131. **Pottery:** The craft of making objects from clay and other ceramic materials.
132. **Pre-vocational Education:** Pre-vocational education is mainly designed to introduce participants to the world of work, and to prepare them for entry into further vocational or technical
133. **Pre-vocational Capacities:** Skills and abilities developed in the early stages of education that are useful in various vocations later.
134. **Private and Philanthropic Organisations:** Non-governmental entities providing financial support for research and innovation.
135. **Procedural Knowledge (Know-how):** Knowledge of how to perform certain tasks or activities.
136. **Project-based learning:** It refers to any instructional approach that utilises projects as a central organising strategy for educating students. Students are generally required to demonstrate their skills in producing various work products, such as multimedia presentations, video documentaries, art installations, and such other performances.
137. **Public Institutions:** Government-funded educational and research institutions.
138. **Qualification:** It means a skill competency in respect of which the Council has approved
139. **Quality Assurance:** It is the process to ensure the effectiveness and standards of vocational education.
140. **Recognition of Prior Learning (RPL):** A process that recognises formal, non-formal, or informal learning based on the learning outcomes defined in the NSQF.

141. **Replicability:** Process that can be repeated and results in similar outcomes.
142. **Research and Innovation:** Systematic investigation to discover new knowledge or develop new products, services, or processes.
143. **Research Funding:** Financial support provided to researchers and institutions for conducting research activities.
144. **Research Mindset:** Attitude and approach emphasising curiosity, inquiry, and pursuit of new knowledge.
145. **Resource Allocation:** Distribution of funds and materials to support vocational education programmes.
146. **Resource Person:** A person with expertise in a certain area who may be called upon as necessary to perform a task or provide information.
147. **Resource Trainers:** Individuals with expertise in specific vocational areas who provide training and guidance.
148. **Robotic Machining:** The use of robots for performing machining tasks, often involving precision and automation.
149. **Safety Protocols:** Procedures and guidelines designed to ensure safety and prevent accidents or injuries in the workplace.
150. **Scaffolding:** Specific and structured form of support provided to help learner learn a particular concept.
151. **School Education:** Formal education provided in schools, typically covering primary and secondary levels.
152. **Scientific Method:** Systematic approach to conducting research involving observation, hypothesis formulation, experimentation, and conclusion.
153. **Scientific Temper:** An attitude of logical thinking, rationality, and an inquiry-based approach to understand the world.
154. **Seed Bed Preparation:** The process of preparing soil for planting seeds, ensuring optimal conditions for germination and growth.
155. **Skill Assessment:** Evaluation of students' proficiency in vocational skills.
156. **Skill Development:** Enhancement of specific skills required for employment in various sectors.

157. **Skill Gap Analysis:** Assessment of the disparity between the skills possessed by individuals and those required by industries.

158. **Skill:** It is the ability to use one's knowledge effectively and readily in execution or performance.

159. **Skill Labs:** Facilities equipped for practical skill development and training within educational institutions.

160. **Skill Training System:** Educational programmes focused on developing specific skills required for various jobs.

161. **Skill-based Learning:** Education centred around practical skill acquisition.

162. **Social Hierarchies:** The ranking of people within a society based on various factors such as occupation, wealth, or education.

163. **Socio-cultural:** It is related to the different groups of people in society and their habits, traditions, and beliefs.

164. **Soft Skills:** Personal attributes that enable individuals to interact effectively with others, such as communication and teamwork.

165. **Stages of School Education:** Various Stages that are operated in school education

    (i) **Foundational Stage:** The stage of schooling for children aged 3–8 years (3 Years Aganwadi/ Pre-School/Balvatika and 2 Years class 1–2).

    (ii) **Preparatory Stage:** The stage of schooling for children 8–11years (Class 3–5).

    (iii) **Middle Stage:** The stage of schooling for children aged 11–14 years (Class 6–8).

    (iv) **Secondary Stage:** The stage of schooling for children aged 14–18 years (Class 9–12).

166. **Stimulation:** Simple activities such as playing, reading, and singing with children that encourage their development and learning.

167. **Sustainable Development:** Development that meets present needs without compromising the ability of future generations to meet their own needs.

168. **Sustainable Vocational Practices:** Environmentally and socially responsible approaches in vocational education.

169. **Swachh Bharat Abhiyaan:** The national-wide Clean India mission or campaign launched by Prime Minister Shri Narendra Modi in 2014 on the occasion of Mahatma Gandhi's 145th birth anniversary.
170. **Tailoring:** The craft of making, repairing, or altering clothing.
171. **Teacher Coordinator:** A Person responsible for implementing and carrying out the activities and objectives of a specific programme, project or area within an educational institutional.
172. **Teacher Training:** Preparation of educators to teach vocational subjects effectively.
173. **Technical Education:** Instructions in specific technical skills and knowledge.
174. **Technical Knowledge:** Theoretical understanding of technical concepts and principles.
175. **Technical Skills:** Practical abilities in specific technical areas.
176. **Theoretical Knowledge (Know-that):** Knowledge about facts and information related to a specific subject area.
177. **Tinkering Laboratory:** A space to work with materials and instruments to design and execute ideas in a flexible environment.
178. **Trainer:** someone who trains, instructs, teaches or otherwise enables the learners to acquire the appropriate knowledge and skills to gain a Qualification.
179. **Training Provider:** A person or an organisation, which is affiliated with an awarding body recognised by the Council for providing training with respect to a qualification.
180. **Values:** Values are beliefs about what is right and what is wrong, while dispositions are the attitudes and perceptions that form the basis for behaviour.
181. **Vertical Mobility:** Ability of individuals to progress from lower levels of education to higher levels within a specific vocational stream.
182. **Virtual Lab:** A virtual training lab is an interactive online environment designed for education and training purposes. It simulates a real-world setting or lab experience, allowing users to engage in hands-on learning activities without needing physical equipment or presence in a specific location.

183. **Visual Cues:** Concrete objects, pictures, symbols, or written words that provide a child with information about how to do a routine, activity, behaviour, or skill.

184. **Vocation:** A type of work or a way of life that you believe to be especially suitable for you.

185. **Vocational Education:** Education that prepares individuals for specific careers or trades through practical training and hands-on experience.

186. **Vocational Pedagogy:** It is the science, art and craft of teaching and learning vocational work-based learning. It is an educational approach for secondary and post-secondary students that provide opportunities to achieve employment-related competencies in the workplace. It is useful in connecting educational experiences gained at an institution to real-life work activities. It is generally undertaken in conjunction with classroom learning, and may take the form of work placements, work experience, and instruction in workplace competencies related to industry.

187. **Welding and Casting:** Techniques used to join metals (welding) and to form metal shapes by pouring molten metal into molds (casting).

188. **Work:** To do something which needs physical or mental effort, in order to earn money or to achieve something.

189. **Work Ethics:** A set of moral principles and attitude at the workplace. Honesty, integrity and accountability define good work ethics in any workplace.

190. **Work in Human Services:** Vocational activities involving interactions with people to provide services, such as healthcare, education, and hospitality.

191. **Work Plan:** Refers to a detailed list that shows what needs to be done, when it should happen, and how to do it. It helps teachers and students to implement activity in systematic way.

192. **Workforce Readiness:** Preparation of students to enter the job market with necessary skills.

193. **Workforce:** The group of people engaged in or available for work, either in a specific company or industry or in a country as a whole.

194. **Workplace Ethics:** Standards of behaviour and professionalism in work environments or workplace.

195. **Workplace Safety:** Knowledge and practices ensuring safety in vocational settings.

196. **Workplace Skills:** Abilities required for effective performance in professional environments.

CHAPTER 3

Vocational Education Scenario in India: Post Independence

Overview

The vibrant Indian handicrafts and skills interwoven with the culture of people is trans-generational. This phenomenon and rich heritage culture have made this country unique across the globe. Keeping this aspect in view, various commissions and policies on education stressed upon India's vocational education system to be evolved significantly to meet the socio- economic and national development needs. This chapter highlights significant recommendations wherein emphasis has been given on diversification and effective implementation of vocational education at secondary and higher secondary stages of education. Tracing the journey of development of vocational education from traditional, informal, craft-based learning systems to more structured and progressive vocational education systems is important to understand the need-based policy decisions for socio-economic development and industrial needs.

In this chapter an attempt has been made to acquaint with the development of vocational education over the years as per recommendations of various policies and education commission which suggested its clear diversification.

Objectives

After the completion of this chapter, you will be able to:

1. describe the progression of vocational education in India
2. explain the importance of development in vocational education.
3. explore recent developments and challenges in vocational education in India.
4. comprehend the role of public-private partnerships and digital initiatives in skill development.

Vocational Education: 1947–1963

The Education scenario must foster Futuristic-approach and match the needs/requirements of new-world development. Relooking back, the essence of Gandhiji's Philosophy on *bunyadi Shiksha* which leads to *'Nai Talim'* is a beautiful blend of four Important components viz Craft Art, Health and Education. The basic Philosophy of Education leads to the development of mind, body and Soul. The Knowledge includes all training that is useful for the services of mankind. Taking this essence education further, the characteristic of basic education is the formation of skill and attitude development in a non-discourse situation. It is aimed at relating immediate environment and practical life and can be provided to any age group having the desire to have a practical and pragmatic life.

India's vocational education system evolved significantly throughout time in response to the nation's evolving needs and aspirations, both economically and socially.

After gaining independence in 1947, India faced the massive work of rebuilding and restructuring its education system, including vocational education, which had been largely neglected during the colonial era. Prior to independence, vocational training was primarily informal, focused on traditional crafts, and lacked a cohesive national policy.

The British colonial administration, while introducing some formal technical education, primarily sought to create a workforce that met their administrative and industrial needs, rather than fostering a strong and independent local vocational education system.

Post-independence, the Indian government recognised the critical need to modernise and expand vocational education to support economic development and reduce unemployment. The period from 1947 to 1950, leading up to the implementation of the first Five-Year Plan in 1951, was marked by significant efforts to lay the groundwork for a comprehensive vocational education policy.

One of the first steps taken by the newly independent government was the establishment of the University Education Commission in 1948, chaired by Dr. S. Radhakrishnan. The commission emphasised the importance of vocational education and recommended the integration of technical and industrial training within the broader education system. This was a departure from the colonial focus,

aiming to create a skilled workforce capable of contributing to the country's industrial and economic growth as well as nation-building and industrialisation. The commission recognised the importance of vocational education and recommended its integration within the broader education system.

In 1950, the Constitution of India came into effect, laying the groundwork for a more structured approach to education, including vocational training. While education as a fundamental right was introduced later through the 86th Amendment Act in 2002, the original Constitution emphasised the importance of education through Article 41 that states "The State shall, within the limits of its economic capacity and development, make effective provision for securing the right to work, to education and to public assistance in cases of unemployment, old age, sickness and disablement, and in other cases of undeserved want" (The constitution of India, Article 41). These principles underscored the government's commitment to vocational education as a means to achieve economic self-reliance and social equity.

The era just before the first Five-Year Plan also saw the establishment of various institutions aimed at promoting technical education. The Indian Institutes of Technology (IITs) were conceptualised during this period, with the first one being set up in Kharagpur in 1951. These institutes were designed to provide high-quality technical education and research opportunities, reflecting the government's vision to develop a technologically skilled workforce for country's development.

Transformation and Developments in Vocational Education in India: 1951–1964

The First and Second Five-Year Plans (1951–1961) were pivotal in shaping India's education system, focusing on expanding basic, vocational, and technical education. The First Plan prioritised universal primary education and social education to improve overall quality of life. The Second Plan continued this focus, expanding technical education infrastructure, increasing ITIs and polytechnics, and aligning vocational training with industry needs. Efforts included scholarships, improved curricula and teacher training. Secondary and higher education expanded, aiming to develop a skilled workforce. Agricultural education was emphasised, with agricultural

universities and rural universities established to modernise farming and integrate education with rural development. The plans aimed to create a skilled workforce to support industrial growth and self-sufficiency. During this period, the government also recognised the need to set up premier institutions for technical education. This led to the establishment of the Indian Institutes of Technology (IITs). The first IIT was established in Kharagpur in 1951, setting a precedent for high-quality technical education in the country. These institutes were envisioned to produce top-notch engineers and technologists who could spearhead India's industrialisation efforts.

The Mudaliar Commission (1952–1953) emphasised the importance of vocational education, recommending an eleven-year school system with diversification after eight years. It suggested offering training in various crafts like spinning, weaving, and metalwork to enhance vocational efficiency. The aim was to prepare students to enter the workforce after +2 education. The Second Five-Year Plan (1956–1961) focused on expanding vocational education and aligning it with industry needs, increasing ITIs and polytechnics and introducing new vocational courses.

Vocational Education: 1964–1985

The Kothari Commission (1964–66) recommended restructuring education into a 10+2+3 system across India, promoting vocational education at the +2 level. The goal was to increase vocational course enrollment to 20 per cent at the lower secondary stage and 50 per cent at the higher secondary stage by 1986. The commission suggested offering both part-time and full-time vocational education in urban and rural areas, with special sections in Education Departments to assist dropouts. It also recommended that the central government provides special grants to states for the Vocationalisation of Secondary Education. Additionally, it encouraged vocational school graduates to start small businesses or collaborate in creating small-scale industries.

The National Policy on Education (NPE) 1968 emphasised the integration of vocational education into the Indian education system to address unemployment and skill shortages. It advocated for the diversification of education at the secondary level by introducing vocational streams as an alternative to academic education. These streams aimed to equip students with job-oriented skills and prepare

them for employment or self-reliance immediately after school. The policy proposed the development of sector-specific vocational courses in agriculture, industry, commerce and services to meet the demands of the growing economy. It highlighted the need for practical training and curriculum reforms to align education with the needs of the labour market. By promoting vocational education, the NPE 1968 sought to reduce the academic burden, create a skilled workforce, and bridge the gap between education and employment, laying a foundation for the growth of vocational training in India.

The Vocationalisation of Higher Secondary Education programme initiated in 1976, was implemented in 10 states and 5 Union Territories, covering 2.5 per cent of students at the higher secondary level, with an intake of 72,000. Despite efforts by the MHRD and NCERT to promote vocational education, it struggled to gain popularity due to factors like poor coordination, unemployability of graduates, and societal reluctance. Socially Useful Productive Work (SUPW) and Work Experience (WE) programmes were integrated at the elementary and secondary stages to prepare students for vocational courses, but their implementation was lacking. By 1985, only a small fraction of students was enrolled in vocational courses, far below the goals set by the Kothari Commission.

National Working Group on Vocationalisation of Education (Kulandaiswamy Committee, 1985)

Reviewed the Vocational Education Programme and developed guidelines for expansion. Recommendations led to the Centrally Sponsored Scheme (CSS) on Vocationalisation of Secondary Education and suggested SUPW should focus on life skills.

Vocational Education:1986–2012

The NPE 1986 advocated a systematic and well planned programme of vocational education which would be a distinct stream intended to prepare students for identified occupations. It envisaged that vocational courses would ordinarily be provided at the higher secondary (+2) stage but flexibility was provided to start vocational education after class VIII. The NPE 1986 set a target to cover 10 per cent of higher secondary students under vocational courses by 1990 and 25 per cent by 1995.

A substantially funded centrally sponsored scheme for Vocationalisation of Secondary Education was started with effect

from February 1988. The scheme was taken for implementation in all States and Union Territories excepting Tripura, Daman and Diu, Dadra & Nagar Haveli and Lakshadweep. At the end of 1991-92, 12,543 vocational sections were approved in 4400 schools, thereby creating facilities for diversion of about 6.27 lakh students at the +2 stage (25 students per vocational section in grades 11 and 12). This accounts for 9.3 per cent of students enrolled· at the +2 stage. Although quantitatively the implementation of the Vocational Education Scheme at the +2 stage has been fairly substantial, in qualitative terms, there remains much to be done. Vocationalisation of education is identified as a priority area in the Eighth Five Year Plan.

PSSCIVE Establishment: 1993

The Pandit Sunderlal Sharma Central Institute of Vocational Education (PSSCIVE) is an apex research and development organisation in the field of vocational education. It is a constituent unit of National Council of Educational Research and Training (NCERT), established in 1993 by the Ministry of Education (MoE), Government of India. The Institute has a picturesque 38 acre campus at Shyamla Hills in Bhopal. It comprises six academic disciplines, namely Agriculture and Animal Husbandry, Business and Commerce, Engineering and Technology, Health and Paramedical Science, Home Science and Hospitality Management and Humanities, Science, Education and Research with 05 Centres. The Institute is also a UNEVOC (International Project on Technical and Vocational Education) Network Centre in India, which coordinates all the activities, including communication with UNESCO-UNEVOC International Centre, Bonn, Germany. Through the network, the Centre shares knowledge and experiences related to all aspects of VET, exchange country experiences, and discuss issues of common relevance. It is a central institute in Bhopal under NCERT to provide research and development support for vocational education.

National Curriculum Framework (NCF) 2005

NCF (2005) proposed to move in a phased manner towards a new programme of Vocational Education and Training (VET), and was conceived to be implemented in mission mode, involving the establishment of separate VET centres and institutions from the level

of village clusters and blocks to sub-divisional/district towns and metropolitan areas. Wherever possible, it would be in the national interest to utilise the school infrastructure (often utilised for only a part of the day) for setting up this new institutional structure for VET. Such VET centres/institutions also need to be evolved in collaboration with the nationwide spectrum of facilities already existing in public-private sector. This will imply the expansion of the scope of institutions like ITIs, polytechnics, technical schools, Krishi Vigyan Kendras, rural development agencies, primary health centres (and their auxiliary services), engineering, agricultural and medical colleges, S & T laboratories, cooperatives and specialised industrial training in both the private and public sectors. These measures would naturally call for shifting and adjusting the resources of the present 6,000 odd senior secondary schools with vocational streams by dovetailing them with the new VET programme.

National Policy on Skill Development 2009

Skills framework must move to a system of equivalence to diplomas and degrees. National Vocational Qualification Framework (NVQF) 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 various learning pathways having standards, comparable with any international qualification framework. NVQF will support lifelong learning, continuous upgradation of skills and knowledge.

National Skill Qualification Framework (NSQF) 2012

The National Skills Qualification Framework (NSQF) is a competency-based system that organises qualifications into 10 levels based on learning outcomes in knowledge, skills, and aptitude. Notified on 27 December 2013, it replaced earlier frameworks like the NVQF. NSQF allows certification through formal, non-formal, or informal learning, ensuring quality assurance.

Anchored at the National Skill Development Agency (NSDA), it is implemented via the National Skills Qualifications Committee (NSQC), which approves standards, accreditation norms, and guidelines for inclusivity, and aligns with NSQF.

NSQF Pilot Project (2013)

Haryana successfully launched the pilot project of the National Vocational Education Qualification Framework (NVEQF) under the Centrally Sponsored Scheme (CSS) in 2012-13. Four trades—Retail, Security, Automobile, and IT/ITeS (Information Technology in IT enabled services) were introduced in 40 schools across 8 districts based on criteria like student strength, industry proximity, and available infrastructure. The curriculum was developed by PSSCIVE, aligning with National Occupational Standards (NOSs). The project aimed to enhance employability skills and facilitate placements.

National Policy for Skill Development and Entrepreneurship 2015

The National Policy for Skill Development and Entrepreneurship aims to empower youth, particularly from underprivileged backgrounds, by upskilling their skills and creating employment opportunities both in India and abroad.

Introduced in 2015 as an extension of the 2009 policy, it focuses on skill development for youth and the workforce while fostering entrepreneurship and self-reliance. Recognising the global shortage of skilled labour, the policy targets rural and impoverished populations, providing them with training and opportunities to excel in their chosen fields.

To achieve its goals, the government is committed to improve training standards, infrastructure, and facilities, enabling talented individuals to access opportunities domestically and internationally.

(a) National Education Policy (NEP) 2020

The NEP 2020 emphasises the integration of vocational education into mainstream education to equip students with practical skills and prepare them for the workforce. It envisions making vocational education an integral part of school and higher education, aiming to introduce at least 50 per cent of learners to vocational training by 2025. The policy advocates for the inclusion of skill-based activities and exposure to the 'world of work,' such as 10 bagless days from Grade 6 onwards, along with hands-on training, internships, and on-the-job training (OJT) from Grades 9-12, in collaboration with industries to ensure relevance to the job market. NEP 2020 also focuses on creating flexible learning pathways, fostering entrepreneurship, and

promoting inclusivity by making vocational education accessible to all sections of society, especially specially-abled children and the underprivileged. By aligning with global standards of skills and competencies, the policy seeks to bridge the gap between education and employability, enhancing India's human capital.

National Curriculum Framework for School Education (NCF-SE) 2023

The NCF-SE 2023 emphasises integrating vocational education from an early stage to develop practical skills and employability among students. It promotes skill development through experiential learning, internships, and collaboration with industries. Starting from middle school, students are encouraged to explore various trades, ensuring alignment with NEP 2020 goals. The framework focuses on making vocational education accessible, inclusive, and relevant to industry demands, fostering entrepreneurship and preparing students for future careers.

Centrally Sponsored Scheme

The Centrally Sponsored Scheme for Vocationalisation of Secondary and Higher Secondary Education (VSHSE) under the National Skill Qualification Framework (NSQF) aims to integrate vocational education with general education to enhance youth employability and providing alternative career path.

The NSQF is a competency-based framework with 10 levels, designed to upskill underprivileged, semi-skilled, and unskilled populations. The CSS for VSHSE, launched by the Ministry of HRD, focuses on market-driven vocational courses to bridge the gap between education and employability, reduce school dropout rates, and prepare students for the job market.

Students gain practical knowledge and job-specific skills through modular courses and internships, often receiving stipends. The scheme benefits employers by reducing training costs and it also benefits students by offering immediate employment opportunities post-secondary education.

Empower Pragati, a NSDC training partner, has been implementing this scheme since 2013, covering 16 states, 1,181 schools, 1,220 trainers, and over 65,000 students annually across 9 sectors, including Beauty & Wellness, Agriculture, ITeS, etc.

Summary

Post-independence, vocational education in India has seen the active development of a structured system, moving away from traditional crafts. Early actions involved the integration of practical skills into basic education, influenced by Gandhian principles. Foundational policies and commissions, such as the University Education Commission (1948) and the Constitution (1950), prioritised vocational training for economic self-reliance. This was followed by the expansion of technical education and the diversification of secondary education through the Five-Year Plans and the Mudaliar Commission (1952–1953). The Kothari Commission (1964–66) introduced vocational streams at the higher secondary level. While efforts to align education with industry, as envisioned by NPE 1968 and subsequent initiatives, faced hurdles, key institutions like PSSCIVE (established in 1993) were created to bolster research. More recently, the National Curriculum Framework (NCF 2005) proposed a structured system, the National Skill Qualification Framework (NSQF) (2012) implemented a competency-based model, and the National Policy for Skill Development and Entrepreneurship (2015) focused on empowering youth with skills. Current efforts under NEP 2020 and NCF-SE 2023 are underway to integrate vocational education from earlier grades, promote hands-on learning and industry partnerships, supported by schemes like Vocationalisation of Secondary Higher Secondary Education (VSHSE) to enhance employability.

CHAPTER 4

Implementation of Vocational Education in Schools under *Samagra Shiksha*

Overview

Vocational education in schools is recognised as a significant component in preparing students for the world of work. It equips learners with practical skills and knowledge essential for various sectors and professions, enhancing their employability and aligning education with industry needs.

Samagra Shiksha is an overarching programme launched by the Government of India in 2018, aiming to unify and improve the quality of school education across the country, from pre-school to higher secondary levels. It is a holistic initiative that subsumes three existing schemes—*Sarva Shiksha Abhiyan (SSA)*, *Rashtriya Madhyamik Shiksha Abhiyan (RMSA)*, and the Teacher Education (TE) programmes under a single framework.

The implementation of Vocational Education in schools under *Samagra Shiksha* is to integrate skill-based education into the school curriculum, aiming to prepare students for employment and entrepreneurship from an early age. This initiative is aligned with NSQF and National Education Policy (NEP) 2020.

Objectives

After the completion of this chapter, you will be able to:

1. describe the NSQF and its significance in vocational education.
2. acquire how vocational curricula are aligned with the NSQF.
3. explore implementation of vocational education under *Samagra Shiksha.*
4. identify the infrastructure and facilities needed for effective vocational education in schools.
5. review case studies of successful vocational education implementation.

National Skills Qualifications Framework (NSQF)

The NSQF is a competency-based framework that classifies qualifications based on a series of levels of knowledge, skills, and aptitude. The framework's purpose is to provide a national standard for skills development, ensuring that vocational training is relevant, standardised, and meets industry requirements.

The NSQF categorises qualifications from Level 1 (entry-level) to Level 8 (highest level of NSQF), facilitating the recognition and transfer of skills across various sectors and regions.

Key Features of NSQF

The following are the key features of NSQF:

(a) Integration and Credit Recognition: Vocational education, training, and skill learning must be integrated into academics, skilling, and experiential learning. Credits should be assigned based on relevant experience and professional proficiency, subject to appropriate assessment.

(b) Competency Standards: Define clear competency levels specifying knowledge, skills, aptitude, responsibility, and expected learning outcomes. Each level/course or qualification should align with a pre-defined NSQF/NCrF (National Credit Framework) level.

(c) Credit Allocation: Assign credit levels for vocational education and skilling across school and higher education. Credits should reflect the cumulative hours/years of learning, with all learning types and durations assessed and credited.

(d) Academic-vocational Equivalence: Establish academic equivalence between vocational and general education, ensuring mobility within and between the two streams.

(e) Flexibility and Mobility: Enable multidisciplinary pathways and multiple entry-exit options (ME-ME) across school, higher, technical, and vocational education, as well as Training and employment markets.

(f) Learning Trajectories: Provide students with flexibility to choose their learning pathways and career options, allowing for mid-course corrections as needed.

(g) Industry Collaboration: Recognise learning through industry partnerships, such as internships, on-the-job training and apprenticeships in all sectors.

(h) Recognition of Prior Learning (RPL): Acknowledge prior learning through a credible and transparent assessment process.

(i) Lifelong Learning: It fosters lifelong learning and skill development, promoting continuous growth and adaptability.

Levels and Descriptors

The NSQF is an eight-level framework that defines the skills and knowledge required for different occupations. Each level represents a different level of complexity and requires learners to acquire specific learning outcomes. Each NSQF level is defined by specific descriptors such as process, professional knowledge, professional skill, core skill, and responsibility. These descriptors help in designing curricula that meet the required standards of proficiency and competence at different levels.

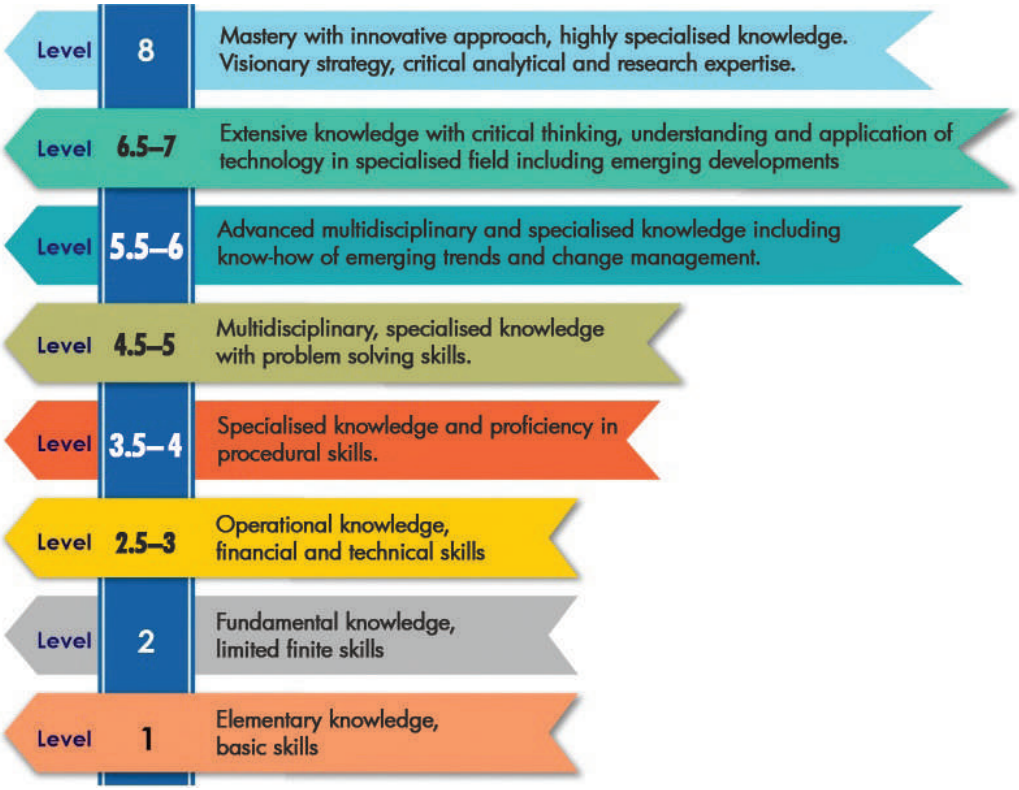

Fig 4.1: Various Levels and Descriptors of NSQF

Benefits of NSQF Alignment

The alignment of education with the NSQF offers multiple benefits, including improved employability of students, Standardised qualifications with national and international recognition, enhanced quality of education through clear benchmarks, and better alignment with industry needs, thereby increasing job opportunities for graduates.

Some of the key advantages of implementing the NSQF are given below:

(a) NSQF qualifications are globally recognised, enabling students to access higher education or job opportunities abroad.

(b) The NSQF emphasises skill development, ensuring graduates are equipped with the competencies needed for specific occupations.

(c) Its flexible structure allows learners to enter or exit the system at different levels based on their needs and aspirations.

(d) By providing industry-relevant skills, the NSQF enhances employability and helps bridge workforce skill gaps.

(e) The NSQF supports a progressive educational model, allowing learners to continuously advance their skills and knowledge.

(f) It promotes lifelong learning and quality education, ensuring individuals stay adaptable and competitive in a dynamic world.

(g) Aligning education with market demands and improving workforce readiness through collaborations between educational institutions and industries.

Implementation of Vocational Education under *Samagra Shiksha*

The *Samagra Shiksha* scheme aims to ensure inclusive and equitable quality education from pre-school to senior secondary stages, integrating vocational education as a significant component. The key features of Vocational Education under *Samagra Shiksha* highlighted below:

(a) Policy Framework: The policy framework under *Samagra Shiksha* emphasises the importance of vocational education in providing holistic development to students. It outlines

the objectives, strategies, and resources necessary for implementing vocational education in schools.

(b) Integration with Mainstream Education: Strategies include flexible timetables that allow vocational subjects to be integrated with academic subjects, mechanisms for credit transfer, to facilitate the inclusion of diverse learning experiences.

(c) Curriculum Design Based on NSQF: The vocational courses are aligned with the National Skill Qualification Framework (NSQF). This ensures that students are trained according to nationally recognised standards, with defined outcomes for each NSQF level.

(d) Vocational Labs and Infrastructure: Schools are provided with funds under *Samagra Shiksha* to set up vocational labs and procure tools, equipment, and materials necessary for practical training. The scheme promotes setting up industry-standard infrastructure in schools to ensure students are trained for real-world scenarios and must gain relevant skills.

(e) Teacher Training and Capacity Building: Effective implementation requires well-trained educators and trainers who are competent in both vocational subjects and pedagogical skills. Continuous professional development programmes are essential to keep teachers updated with the latest industry trends and teaching methodologies.

(f) Industry Collaboration: Partnerships with industry are important for the relevance of vocational education. Industries can provide insights into curricula development, OJTs, internships, apprenticeships, guest lectures, ensuring that students gain practical exposure and skills that are required for the world of work.

Infrastructure and Facilities for Vocational Education

Adequate infrastructure and facilities are essential for the effective delivery of vocational education. This includes physical, technological, human resources and regulations. The following is an elaborated explanation:

1. **Physical Resources**
   - **Infrastructure Requirements:** Schools need to have dedicated spaces such as classrooms, laboratories, and workshops equipped with the necessary tools and

machinery for various trades. Infrastructure is designed to be inclusive, ensuring that students with disabilities have access to facilities.

- **Equipment and Tools:** *Samagra Shiksha* ensures that schools have access to industry-standard equipment necessary for vocational training. This includes computers, machinery, medical tools, and other specialised equipment to allow students to learn using tools they would encounter in real workplaces. The infrastructure needs to be regularly updated, ensuring that students are trained on modern tools and methods.

2. **Technological Resources**
   - **ICT and Digital Resources:** Integrating Information and Communication Technology (ICT) in vocational education can enhance learning. Digital resources such as e-learning platforms, virtual labs, smart classrooms and simulation tools can provide interactive and engaging learning experiences.

3. **Human Resource**

   This includes all aspects of managing, supporting, and developing the availability of qualified and skilled human resources (Vocational Coordinators, Vocational Teachers). Under *Samagra Shiksha*, this plays a vital role in the effective implementation of the scheme.
   - **Teacher Training Facilities:** Regular professional development of Vocational teachers is an integral part of *Samagra Shiksha.*

4. **Regulations**
   - **Safety and Standards:** Ensuring safety in workshops and laboratories is paramount. Schools must adhere to safety standards and regulations, conduct regular maintenance of equipment, and provide safety training to students and staff.

Case Studies and Best Practices

Case studies provide insights into successful implementation strategies and innovative practices in vocational education.

(a) Successful Implementations: For example, the Haryana state government's initiative to integrate vocational education

in secondary schools has led to increased student engagement and improved employment outcomes.

(b) Innovative Approaches: Schools adopting blended learning approaches, combining online and offline methods, have seen higher student participation and better learning outcomes. Examples include the use of virtual reality for skill training in fields like welding and automotive repair.

Summary

Implementation of Vocational Education in Schools under *Samagra Shiksha*, highlights the integration of skill-based education into school curricula to enhance employability and entrepreneurship. *Samagra Shiksha*, launched in 2018, unifies existing education schemes and aligns with the National Skills Qualifications Framework (NSQF) and National Education Policy (NEP) 2020.

The NSQF defines eight levels of competencies, integrating vocational and general education while promoting flexibility and lifelong learning. It ensures industry-aligned training, employability, and international recognition.

Under *Samagra Shiksha*, vocational curricula aligned with NSQF are designed and supported by industry collaboration for internships and practical exposure are designed. Schools receive funds for vocational labs, tools, and ICT resources, such as e-learning platforms and virtual labs. Teacher training ensures quality delivery, while safety standards are also emphasised.

The chapter also highlights best practices, such as Haryana's successful integration of vocational education, showcasing increased student engagement and improved employment outcomes.

CHAPTER
5

Vocational Education in NEP 2020 and NCF-SE 2023

Overview

The landscape of education in India is undergoing a significant transformation with the implementation of the National Education Policy (NEP) 2020 and the National Curriculum Framework for School Education (NCF-SE) 2023.These landmark documents scale to reform the educational system. The educational framework, with the strong focus on integrating vocational education to better equip students with skills needed to meet the demands of the changing world of work. NEP 2020 envisions a holistic, flexible, multidisciplinary approach to education, smoothly blending academic and vocational streams. The policy emphasises the importance of skill development from an early age, promoting the idea that vocational education is not an alternative but an integral part of mainstream education. Complementing the NEP 2020, the NCF-SE 2023 provides a detailed framework for implementing these educational reforms. It delineates the curriculum and pedagogical strategies required to integrate vocational training into the school system effectively. Vocational education emphasises practical skills through Working with Life Forms (e.g., farming, animal care), Working with Machines and Materials (e.g., tailoring, carpentry), and Work in Human Services (e.g., nursing, hospitality). These areas integrate knowledge with hands-on learning, preparing students for real-world challenges.

Objectives

After the completion of this chapter, you will be able to:

1. explain NEP and NCF-SE incorporate VE into main stream.
2. analyse key strategies, understanding policy objectives and review stage-wise vocational education.

National Education Policy (NEP) 2020

The National Education Policy (NEP) 2020 represents a significant transformation of India's educational system, particularly focusing vocational education. This is the first education policy of the 21st century which addresses the nation's developmental needs by overhauling and restructuring education system of India. The policy emphasises nurturing the creative potential of students, going beyond foundational literacy and numeracy to include advanced cognitive skills like critical thinking and problem-solving, along with social, ethical, and emotional development. By integrating practical skills with academic learning, NEP 2020 seeks to bridge the gap between education and employment. Also, this will pave the way to prepare a generation that is not only knowledgeable but also equipped with the skills needed to be successful in real world of work.

Objective of Policy and Key Strategies

The NEP 2020 aims to integrate vocational education into general education to overcome the challenges and eliminate the social stigma associated with vocational education. Key strategies include:

1. **Vocational Education in school:** Beginning with vocational exposure at early ages in middle and secondary school, quality vocational education will be integrated smoothly into higher education. It will ensure that every child learns at least one vocation and is exposed to several more. This would lead to emphasising the dignity of manual work and importance of various vocations involving/Indian arts and artisanship.
2. **Flexibility and Choice:** Allowing students to choose from a range of vocational subjects, alongside academic subjects, particularly in secondary school. Also, provide opportunity for multi-entry exit in continuing education by credit and accumulation credit transfer.
3. **Skill Development and Local Needs:** Establishing skill labs and collaborating with ITIs, polytechnics, and local industries to meet local needs and gaps.
4. **Increased Participation:** Aiming for at least 50% of learners to have exposure to vocational education by 2025.
5. **National Committee for Integration:** Forming a National Committee for the Integration of Vocational Education (NCIVE) to oversee efforts and innovations in vocational education.

6. **Lifelong Learning and Adult Education:** Developing infrastructure for adult education and lifelong learning, using schools, libraries, and other community spaces for the implementation of vocational education courses.
7. **Teacher Training and Standards:** Developing national professional standards for teachers and local teacher education programmes for vocational education.
8. **Holistic and Multidisciplinary Education:** Promoting a holistic and multidisciplinary education system that includes vocational subjects and soft skills, and promotion of employability.
9. **Public and Private Participation:** Encouraging both public and private participation in expanding vocational education offerings.

National Curriculum Framework for School Education 2023

School education should prepare students not just to understand the world around them, but also to do productive work. These capacities for work would enable students to be productive members of their households as well as participate in the economy. Thus, NCF-SE 2023 considers vocational education an integral part of the curriculum (NCF-SE 2023 para. 1.5.2). School education must provide all students with both the possibility to join the workforce and the opportunity to pursue higher education. In the Foundational and Preparatory Stages, multiple competencies will be developed through play and other activities, which will subsequently be useful in vocations. These competencies are termed prevocational competencies. In the Middle Stage, exposure to a wide range of work will be given to students. This will equip them to achieve competencies (including specific skills) in a vocation of their choice in the Secondary Stage and help them progress towards gainful employment and contribute meaningfully to the economy.

Approach to Vocational Education

Vocational education should integrate and build upon skills from other subjects, such as Mathematics for calculations, Social Science for understanding work in society, and Science for understanding functionality and improvement. This approach ensures that vocational education complements and enhances other curricular areas rather than standing alone.

Fig. 5.1: Integration of Vocational Education, Academic Learning and Skill Development

Distinguishing between Vocational and Skills Training

The NCF capacities are broader, deeper, and more complex human abilities, while skills are narrower and more focused. Most capacities are constituted by many skills. In other words, many skills are required to develop a capacity. For example–critical thinking is a capacity, while sorting data is a skill which is part of critical thinking. Appropriate irrigation of crops is a capacity, which requires the skills of reading the landform and its slopes, trenching and constructing channels, and understanding how much and when to water. Vocational Education focuses on capacities relevant to particular vocations, however, a vocation requires more than capacities, which is why vocational education is also about developing the appropriate knowledge base and values. For example–the vocation of 'grooming and personal care' requires not only the skill of haircutting or pedicure, but also requires the knowledge of different kind of hairstyles and their trends, and methods of pedicure, and the sources of knowledge for all these. It also requires a disposition of serving with dignity. Thus, school education focuses on vocational education while the large skills training system complements it by focusing on skills. (NCF-SE 2023 para-9.1.2)

Forms of Work

1. **Work with Life Forms:** Working with Life forms involves developing capacities to do productive work that involves plants and animals. For example, a school could choose to develop a vegetable garden or a chicken coop as part of this category in the Middle Stage, and floriculture, dairy farming, sugarcane cultivation, or natural farming in the Secondary Stage. The abilities required for such work involves both practical skills as well as some knowledge of the biology behind these life forms, thus making school knowledge in science relevant and practical.

Fig.5.2: Forms of Work

2. **Work with Machines and Materials:** Working with machines and materials involves comprehending how any machine or tool works. It incorporates the processes and tasks that lead to tangible outputs. Students can get involved in this form of work by introducing handicraft work using various materials such as paper, wood, clay, and fabric. A student willing to the work of tailoring uses basic tools such as scissors, cutters, thread, pins, and machines, including the sewing machine, to sew cloth in a predetermined design. The student by this will develop manual skills, attention to detail and persistence to create high-quality products. Illustratively, a school could choose to offer high-tech machining, tailoring, carpentry and pottery in the Middle Stage, and robotic welding along with advanced courses in carpentry and tailoring in the Secondary

Stage. Students in Grades 11 and 12 can get benefit from gaining skills in operating advanced machinery that is used in more automated manufacturing.

3. **Work in Human Services:** Work in Human Services involves interaction with people to understand their needs and requirements. It deals with the skill to communicate well and understand the processes and resources involved in providing a particular service. So, a person inclined to work in a nursing home should be well informed about procedures, and ways of communication with patients to deliver appropriate service. Through this form of work, students develop the essential skills required for that service as well as interpersonal skills and compassion for other fellow beings. Illustratively, a school could choose to help in a nursing home or work in a shop as part of this category in the Middle Stage. In the Secondary Stage, courses could, illustratively, be offered in housekeeping, wellness/beauty, and tourism/hospitality.

Stage-wise Designs—Middle Stage

In each Grade, three projects, one from each form of work will be implemented in schools. Thus, by the end of this stage, students will work on nine projects.

Towards the end of the academic year, a *Kaushal Mela* (skills fair) will be organised in the school for students to demonstrate their projects to the school, community members and other stakeholders. This will include a presentation of the project work, key learnings, reflections, and use of learnt skills at home.

It is to be noted that with this design in the Middle Stage, students will indeed be exposed to vocations and develop relevant capacities and knowledge; thus, this NCF does not use the phrase 'prevocational' for such learning in the Middle Stage, while that phrase has been used in other school education related documents.

Illustrative Projects in Middle Stage

Following is the illustrative list of Projects with brief descriptions under each form of work:

Illustrative Project List for the Middle Stage

S.No.	Projects (Life Forms)	Description
1.	Kitchen Garden	The kitchen garden project will engage students in working with soil and agricultural equipment to produce simple fruits and vegetables on the school ground or available premises near the school.
2.	Urban/Rural farming	By growing at a larger scale than a kitchen garden, students will learn the basics of soil preparation, sowing, irrigation, protection of crops from weeds, and properly storing the harvested crop.
3.	Plant nursery	The Project Mobile Nursery will enable students to plant and manage the growth of different plants. Students will learn to grow plants through different methods (cutting, grafting) and using different plant parts (vegetative propagation).

S.No.	Projects (Machine & Materials)	Description
1.	Solar Panel Model	The project will engage students in learning about this renewable source of energy. The components of the project will include building the basic concepts related to solar energy, a demonstration of constructing the model by the Teacher, followed by assembling the model and observing how it functions with students.
2.	Stitch and sew	The project will enable the students to learn the basic skills of stitching, creating patterns on fabrics, shaping fabrics, and eventually designing a basic garment of their choice.
3.	Carve the wood	The woodcarving project will engage students in creating aesthetic wood crafts. The components of the project will include an introduction to basic woodcarving tools, drawing or planning an object to carve on wood, rough carving through chisels, detailed carving and polishing of the product.

S.No.	Project (Work in Human Services)	Description
1.	School's salon	The project of School salon will enable the students to develop the best practices in providing beauty wellness through various modes. Also, understanding the basics of salon practices.
2.	First aid	The first aid project will enable students to acquire basic knowledge of simple over-the counter medicines and their application in providing the first form of aid. Students will learn to handle the medicines and relevant materials diligently while taking care of the injured/sick patient.
3.	Food Fair	The project will be the school's annual fair with students taking the lead in serving food from different localities and different cuisines. This project will enable the students to learn the operationalisation processes of food from the basics of cooking to presenting and serving.
4.	School Shop	This project will enable the students to learn the management skills of running a shop on the school premises. The shop can consist of materials (stationary, snacks) which are of relevant utility to the school, or which promote the local craft (artworks) made by students. They will learn how to manage a business venture.

Secondary Stage — Grades 9 and 10

- Students will be given exposure to six vocations (two from each form of work) spread over two years. These will be equivalent to NSQF Levels 1 and 2, where relevant.
- Students will learn the relevant skills for these vocations through both workshops conducted in the school as well as projects and internships on local sites of work.

Illustrative Course Design in Secondary Stage – Grades 9 and 10

In the Secondary Stage, there will be 6 core vocations covering two from each form of work. The illustrative core vocations include agriculture, plumbing, and beauty and wellness in Grade 9, and

gardening, carpentry, and nursing and care in Grade 10. These core vocations represent all three forms of work. The design of the course will be as follows:

Courses in the Secondary Stage

Form of Work	Grade 9	Grade 10
Working with Life forms 	**Agriculture** (a) Familiarising with and operating basic agricultural equipment. (b) Seed bed preparation, seed selection, proper spacing, row cropping, and intercropping (c) Fertilisation and soil management. (d) Pest and disease identification and control.	**Gardening** (a) Gardening tools - Familiarity with, using, organising and maintaining the tools (b) Techniques of plant propagation (c) Dealing with weeds (d) Dealing with pests
Working with Machine and Materials 	**Plumbing** (a) Measuring, cut, thread, or bend pipe to required angle, using hand or other tools. (b) Installation of household equipment such as geyser, RO (c) Identifying minor plumbing issues and resolution	**Carpentry** (a) Measuring, cutting and sawing using basic hand tools such as planes, chisels, sandpaper, mallets (b) Joining wooden pieces, driving nails, etc. (c) Basics of painting and finishing restoration of old wooden items
Working in Human Services 	**Beauty and wellness** (a) Introduction to beauty and wellness (b) Learning Manicure, pedicure, and Mehendi services (c) Hair care (d) Customer service orientation	**Nursing and care** (a) Basic concept of health and Nursing care, Patient care, and counselling (b) Measuring vital signs (c) Service orientation

Secondary Stage — Grades 11 and 12

In Grades 11 and 12 students take choice-based courses in different Curricular Areas. Vocational Education is one of the Curricular Areas that should be available for students. Students choosing vocational courses from this Curricular Area would have in-depth training in a specific vocation over the period of two years. These will be at NSQF levels 3–4 where relevant.

The following is a list of courses for each of the forms:

S.No.	Work with Life Forms	Work with Machines and Materials	Work in Human Services
1.	Dairy Farming	Agricultural Machine Operation	Frontline Health Worker
2.	Sericulture	Irrigation Service Technician	Vision Technician
3.	Small Poultry Farming	Plumber (General)	Heritage Tour Guide
4.	Soil and Water Testing Lab Assistant for Agriculture	Hi-tech Technical Services	Beauty Therapist
5.	Gardening	Field Technician — Washing Machine/ Air Conditioning/ Refrigerator	Yoga Instructor
6.	Floriculture	Auto Service Technician	Hair Stylist
7.	Mushroom Cultivation	Baking	Dietician
8.	Sheep / Goat Farming	Jam, Jelly and Ketchup Processing	Home Health Aide

Summary

'Vocational Education in NEP 2020 and NCF-SE 2023' highlights the transformation of India's education system through the integration of vocational education with other subject areas. The National Education Policy (NEP) 2020 envisions a holistic, flexible, and multidisciplinary approach, ensuring vocational training is an integral part of mainstream education. It emphasises skill development from an early age and aims for 50 per cent of learners to have vocational exposure by 2025. The National Curriculum Framework for School Education (NCF-SE) 2023 provides a structured implementation

plan, incorporating practical skills through working with life forms, machines and materials, and human services. Vocational education is stage-wise, with exposure starting in the Middle Stage and skill-building continuing in secondary education through internships and practical projects. The chapter also distinguishes vocational training from skill training, underscoring the need for structured learning for employment. By integrating academic and vocational skills, these reforms bridge the gap between education and the real-world workforce.

CHAPTER 6

Implementation of Vocational Education at Middle Stage (Grades 6 to 8) of School Education

Overview

Implementation of vocational education in pursuance of NEP 2020, NCF-SE 2023 is being introduced as a separate subject in the Middle Stage of schooling, aiming to provide students with practical skills and a broad understanding of different economic sectors/vocations. The core objective of the curriculum is to develop values and sensibilities related to work and an appreciation of the dignity of labour, making it integral to preparing students for challenges and opportunities in the world of work. Also, hands-on learning opportunities provided through vocational projects helps students acquire practical skills that can be directly applied in their communities.

The vocational curriculum at Middle stage (Grades 6 to 8) exposes students to three distinct forms of work—Work with Life Forms, Work with Machines and Materials, and Work in Human Services, allowing them to experience a wide variety of vocational fields. These categories align with the broader economic sectors (primary, secondary, and tertiary) and cover vocations that share common skills and knowledge, thereby giving students a comprehensive foundation for productive work/vocations. Thus, the curriculum encourages students to develop both practical skills and conceptual understanding of the vocation

Objectives

After the completion of this chapter, you will be able to:

1. acquaint and introduce younger generation of students to the three sectors of economy—primary, secondary and tertiary.
2. explore different fields of interest and understand the practical applications of their academic knowledge.
3. foster hands-on learning experiences in three forms of work i.e. life forms, machines and materials and human services.

4. provide opportunities to students for career exploration and awareness, helping them to understand various vocational pathways.
5. align skill education with personal strengths, aspirations and interests of the students and to meet the societal and economic needs of the country.
6. promote the seamless integration of vocational education with traditional academic subjects.
7. introduce students to employability skills and their importance
8. ensure that all students have equal access to skill education opportunities.
9. develop students' core skills and change societal perceptions.

Vocational Education at Middle Stage

Three forms of work

The vocational education curriculum focuses on three main forms of work, which are broadly aligned with the types of vocations students may encounter in the real world:

1. **Work with Life Forms:** This form involves working with plants, animals, and other living organisms. It focuses on developing both practical skills and theoretical knowledge related to life sciences. Students might engage in gardening, animal care, or sustainable farming practices. For example, in Grade 6, they could start with creating a school kitchen garden, progressing to more complex activities like dairy farming or floriculture in later grades. Students will develop a deeper understanding of biology, environmental science, and sustainable agricultural practices through these projects.
2. **Work with Machines and Materials:** This category covers vocations that involve the use of tools, machines, and various materials. It includes tasks that result in tangible products such as machining, carpentry, tailoring, pottery, and robotics. Students will learn the practical aspects of using machines and tools, as well as the underlying scientific and mathematical principles. For example, a project on tailoring would teach students to use basic tools like scissors and sewing machines, while more advanced projects in later grades could include robotics or welding.

3. **Work in Human Services:** This involves vocations that require interpersonal interaction and service-oriented work. Professions in this category include nursing, hospitality, retail, and caregiving. Students will learn how to understand people's needs, communicate effectively, and provide appropriate services. For example, they might participate in a nursing home project or work in a school museum, developing key skills such as empathy, communication, and collaboration. These vocations also help students understand the social sciences, psychology, and the importance of community service.

(Note: For exemplar project, kindly refer Chapter 6)

Pedagogical Approach to Vocational Education at Middle Stage (Grades 6 to 8)

Project-based Teaching-learning

Project-based teaching-learning plays a central role in the vocational education curriculum. Projects are structured activities that span long periods, providing students with the time and scope to investigate, experiment, collaborate, and reflect on their work. The goal of these projects is not just to create a final product but to develop an understanding of the processes, tools, and protocols involved in different vocations. This approach fosters critical thinking, creativity, collaboration, and communication skills, all of which are essential for success in any vocational field.

Projects are structured to result in a tangible product, process, or service, but the primary focus is on developing vocational competencies through hands-on tasks. The pedagogical approach for vocational education in the Middle Stage is centreed on the following principles:

- Collaboration
- Real-world connections
- Diverse learning styles
- Hands-on learning
- Reflection

Critical Components in the Pedagogy

Across projects, students must first systematically prepare to undertake activities related to the project, actually 'do' them (DIY),

record observations, and outcomes of tasks, and then reflect on the entire process. For example, Hydroponics in schools is an innovative and hands-on way to teach students about plant biology, sustainability, and modern agriculture techniques. This soil-free method of growing plants allows students to see the direct relationship between water, nutrients, and plant growth. It encourages inquiry-based learning as students experiment with variables like light, nutrients, and plant types by observing how they affect plant health and yield.

Hydroponic systems are ideal for urban schools or those with limited outdoor space, as they can be set-up indoors with the use of LED lights and nutrient solutions. By incorporating Hydroponics into the curriculum, schools can foster an understanding of environmental responsibility, food production, and scientific inquiry, while also making subjects like biology, chemistry, and environmental science more engaging and practical. This type of project-based learning can cultivate skills among students like problem-solving, teamwork, and critical thinking and they learn to apply what they learned in the classroom to real-world scenarios.

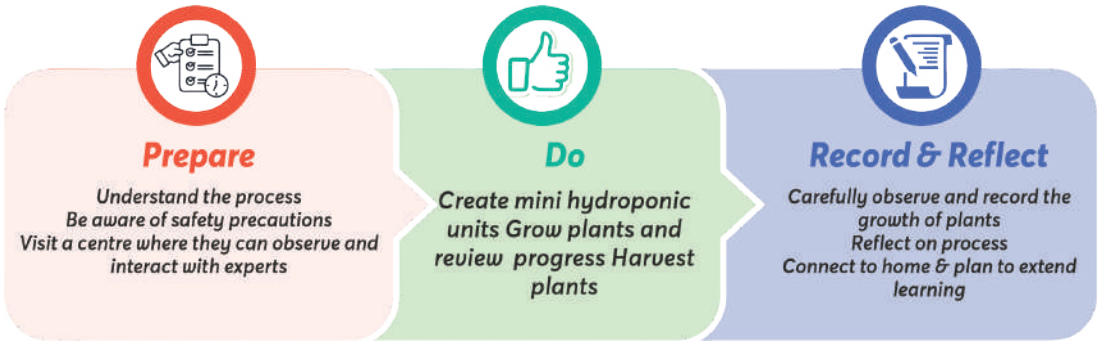

Fig. 6.1: Pedagogical Approach for a Project Related to Hydroponics

In rural schools, projects focused on solar power, wind energy, or biogas generation can introduce students to renewable energy technologies. These initiatives help students to understand sustainable energy solutions while addressing the local energy needs in areas with limited access to reliable electricity. Projects related to health and hygiene can raise awareness of sanitation practices in rural communities. Students may be engaged in clean water initiatives, building sanitary toilets, or promoting health campaigns on issues, like nutrition and disease prevention.

Encouraging students to work on projects that involve traditional rural crafts or small-scale entrepreneurship can equip them with skills to contribute to their local economy. Projects might include learning to create and sell local handicrafts, developing small businesses, or marketing agricultural products.

Time Allocation and Scheduling

To ensure that students have sufficient time to engage in vocational activities, the curriculum allocates 110 hours (or 165 periods of 40 minutes each) per academic year for three vocational projects—one from each form of work. This time allocation includes approximately 10 hours for preparing and organising a Kaushal Mela (Skill Fair), a skill fair where students present their projects to the community. Additional hours are allocated for unforeseen tasks or to revisit and improve projects.

Schools may adjust the scheduling based on student interests and project needs, but the allocated time must strictly be used for vocational education activities. Block periods are recommended to allow for extended hands-on learning sessions, which are essential for activities like preparing materials, cleaning up after tasks, and working through trial and error. For example, projects involving gardening or pottery may require frequent follow-ups and attention throughout the academic year, and block periods allow students to manage these ongoing tasks effectively.

Learning Standards and Outcomes

The learning standards and learning outcomes for vocational education in the Middle Stage are designed to ensure that students develop the necessary skills, knowledge, values and work ethics to be successful in various vocations and in their personal lives. The curriculum aims to achieve four key objectives:

1. Broad understanding of Forms of work;
2. Preparation for specific vocations;
3. Respect for the dignity of labour; and
4. Development of work ethics and values.

Learning standards in vocational education are divided into curricular aims, Curricular Goals, Competencies, and Learning Outcomes, which together ensure that students achieve the desired educational objectives. Learning outcomes are defined as measurable

or observable benchmarks to assess student progress in learning. For example, by the end of Grade 6, students should be able to demonstrate basic skills in using tools, understanding processes, and applying their learning to practical tasks.

Syllabus

The table given below details the learning outcomes for each of the competencies, the capacities students must develop to attain these learning outcomes, and the activities that will enable learning:

Learning Outcomes	Capacities (Knowledge, skills, and values)	Learning Activities
C-1.1: Perform procedures competently through required tools/equipment		
• Selecting tools appropriate for specific tasks. • Use tools correctly to complete given task.	• Knowledge of tools/ equipment for doing identified work – physical tools as well formal protocols/SOPs (Standard Operating Procedures). • Demonstration of use of tools for authentic tasks at a site of work, in school or through a video or similar format.	Using physical tools/ equipment: • Practicing use of tools for doing authentic tasks at a site of work or in school. • Using the tools to complete an authentic task. Using protocols/ structures: • In the case of Work in Human Services, tools include protocols (e.g. steps involved in providing first aid, order of service in a restaurant, steps in cutting a garment) as well as the 'intrinsic tool to interact, empathise, show humility, serve, repair'. • They also include short pieces of writing/audio-video presentations either directly related to vocations (e.g. social media, news platforms, etc.) or for communication.

		Grade 8: Students will use tools that require greater consideration of safety, and more strength for handling, e.g. shovel, axe; hack saw, stove, mixer, agricultural tools, audio-visual presentation based on a detailed script; supporting other persons (e.g. providing first aid, volunteering in an old age home).
C-1.2: Approaches tasks in a planned and systematic manner		
• Demonstrating appropriate stepwise process for completing a task. • Developing time-based plan for completion of task.	• Knowledge of steps and sequence required to do the identified work. • How to plan the identified work and why it is necessary to plan?	Defining product/ outcomes: • Either through exploration via different modes (e.g. library, Internet) or a survey of stakeholders. Identification of tasks to be completed: • Breaking down the process into smaller tasks that lead to the desired product/ outcomes; detailing how each of them is to be completed and by whom; estimating the time required for each. Developing a plan: • Setting broad timelines (e.g. weeks) and assigning responsibility to ensure completion of the project on time. **Grade 6:** Students will understand how to plan broad activities and timelines (e.g. weeks).

		Grade 7: Students will understand how to develop a plan of action with activities broken into smaller tasks, and dates to mark timelines. **Grade 8:** Students will understand how to do more precise planning, breaking activities to be completed into smaller time-bound tasks, noted in an Excel/chart.
C-1.3: Maintains and handles materials/equipment for the required activity		
• Describe the steps necessary to keep materials and equipment ready for use. • Follow the safety protocol while handling tools/materials:	• Specific requirements related to tools and materials related to the identified work, and where to locate these requirements (e.g. in manual, on label, word of mouth). • Demonstration of authentic tasks (at a site of work, in school or through a video) related to ensuring tools and materials are ready to use as per specific requirements. • Different types of injuries that can occur to self and others, steps necessary to avoid these injuries. • Safe work environments- implicit and explicit components	Keeping materials and equipment ready for use: • Determining requirements related to use of tools and materials (e.g. in manual, on label, through asking more experienced persons). • Cleaning and storing tools/implement/ equipment. • Preparing materials and storing them as per requirements. Following safety protocols: • Demonstrating the safe way to handle tools/implements/ equipment. • Demonstrating safety -confidentiality requirements, cyber safety, concern for others, etc.

		Grade 6: Maintenance and cleaning of tools will be simple and direct, with minimal chances of injury. Materials will also be safe and manageable, requiring little preparation. Safety requirements will be basic. **Grade 7:** As tools become more complex, their cleaning and maintenance require more from students. Also, material preparation and storage may also increase in complexity. Safety requirements will be more demanding. **Grade 8:** As for Grade 7, expectations from students related to cleaning and maintenance of tools, and preparation and storage of materials will also become more complex, and safety requirements will be more demanding.
C-2.1: Describes the contribution of vocation in the world of work		
Grade 6: Describe the importance of vocation in the world around them.	• Unique contribution of the identified work to society and to other vocations (e.g. transportation makes agriculture more profitable; advertising funds social media).	Connecting the outcomes/products created to the real world: • Explaining how the project connects to real life, and why it is important. They must be able to identify what exactly is of interest to them in the project or reasons why they are not interested in doing/opting these projects.

		• Survey of related work in their surroundings Identifying work opportunities related to the project they have undertaken and discussing them in class.
C-2.2: Applies skills and knowledge learned in the area		
Grade 6: Not to be assessed in this grade. **Grades 7 and 8:** Explains how prior knowledge and skills have been used to complete the task.	• Reflection on own learning.	• Explaining how prior learning is useful in this context. • Explaining how the work they are doing can be done in other similar contexts. **Grade 6:** Since the development of vocational capacities begins in Grade 6, students are not expected to attain this learning outcome. **Grades 7 and 8:** The difference between Grades 7 and 8 will simply depend on the greater experience and therefore maturity of students.
C-2.3: Evaluates and quantifies the associated products and materials		
• Identifies criteria for evaluating quality of products. • Identifies criteria for evaluating quantity of products.	• Meaning of quality. • Importance of quality (in terms of value for money, returning customers, etc) • Quantity in terms of output. • Factoring in wastage and other factors that might impact quantity.	Identifying criteria for quality: • Stating simple criteria used to evaluate the quality of a product; using these criteria to evaluate standard products and also to reflect on how their own product could be better. • Identifying criteria for quantity: • Stating simple criteria to identify quantity of products/output

		Assessing investment: • Simple calculations for estimating the selling price of a product/ output. • Determining how much money was spent and how much has been saved. • As students gain more experience with doing work, their understanding of quality will grow. They will also be able to define criteria more finely. **Grade 6:** Students will have to be supported in identification of criteria - these must be simple and used to evaluate a product of quality. They must use these to evaluate standard products and compare them against the criteria. They must also reflect on how their own product could be better. **Grade 7:** In addition to the above, students connect what they could have done differently to improve the quality of the product. **Grade 8:** In addition to the above, students plan to evaluate the quality of the products at different points of time during the project.

C-3.1: Develops the following values while engaging in work:		
Observation:		
• Keenly observes the usage of tools and materials during demonstration and asks relevant questions. • Shows care and respect towards people doing physical labour, irrespective of gender. Plans tasks with peers and helps others during difficulty at work. • Reworks/redoes task for improved efficiency. • Asks questions about functioning of tools and machines, and gives suggestions for alternative use. • Willingness to do physical work while enjoying working with tools and materials.	• Values related to work and why they are important for successful completion of tasks. • Exemplars of values related to work in action-recognised professionals, success stories, etc.	Opportunities throughout project to demonstrate these values: • Projects must provide opportunities to develop the essential values for engaging in work stated in the competency. • This will imply that all students participate in all the tasks related to the competencies above. • It will also imply that students are able to perform a range of tasks over a period of time and are able to make mid-course corrections.
C-4.1: Applies the acquired vocational skills and knowledge in home settings		
• Identifies where skills and knowledge are relevant at home.	• Extending learning at home.	Generic capacities: • Students apply knowledge and skills in daily life or at home, demonstrating values and dispositions related to work. • Performing a task directly related to their learning in school, or sharing examples of how they have applied their learning at home.

Integration of Generic Capacities and Cross-cutting Themes

The vocational education curriculum is designed to be inclusive, ensuring that all students, including those from Socio-Economically Disadvantaged Groups (SEDGs) and those with disabilities, can

participate and succeed. Inclusive vocational education ensures that every student has the opportunity to develop valuable skills and prepare for future employment, regardless of their personal circumstances. Schools are encouraged to create an inclusive environment by:

1. **Adapting the curriculum** to meet the needs of students with special needs, providing assistive devices or alternative methods of participation where necessary.
2. **Promoting equity** by ensuring that all students, regardless of background or ability, have equal opportunities to engage in vocational projects.
3. **Fostering a supportive school culture** that values diversity and inclusion, with a zero-tolerance policy for discrimination or exclusion.

In addition to vocational skills, the curriculum integrates several generic capacities that are essential for daily living. These include:

- Digital literacy
- Financial literacy
- Environmental literacy
- Cultural literacy
- Self-sufficiency
- Occupational literacy

4. **Cross-cutting themes,** such as environmental sustainability, inclusivity, and rootedness in Indian knowledge systems, are also woven into the vocational curriculum at the Middle stage. Projects are designed to connect with native social and environmental contexts, making learning relevant and meaningful to students' lives.

Selection of Vocations and Projects

The selection of projects is flexible, allowing schools to choose activities that are relevant to their local context and resources. However, each project must align with the curricular goals and competencies laid out for the Middle Stage, ensuring that students develop the necessary skills and knowledge across the three forms of work.

Schools have the flexibility to implement multiple projects concurrently or sequentially, depending on their resources and scheduling. For example, a school may allow different groups of

students to work on different projects simultaneously, promoting peer learning and resource sharing.

The selection process is guided by several principles as depicted in Fig. 6.2.

By carefully selecting vocations and projects, schools can provide students with a comprehensive and meaningful vocational education experience.

(Note: For details and examples of Vocations, Vocational projects and templates for developing vocational projects kindly refer "*Kaushal Bodh*" Grades 6 and 7, Free download from NCERT website).

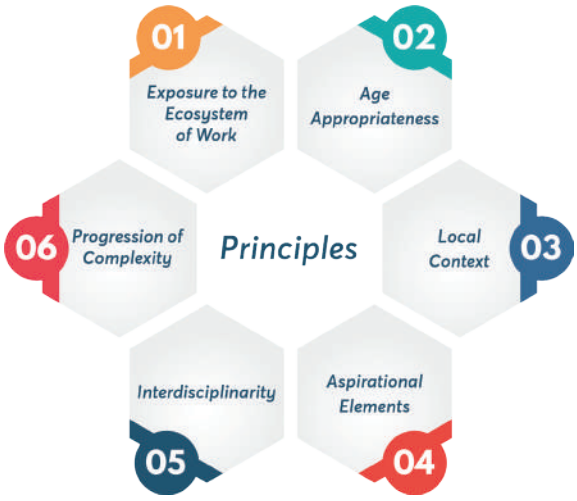

Fig. 6.2: Principles Guiding the Selection Process

Integration of Artificial Intelligence

The curriculum recognises the growing importance of Artificial Intelligence (AI) in modern work environments and seeks to introduce students to AI as a tool for enhancing vocational tasks. AI is integrated into projects where appropriate and helping students understand how technology can be used to improve creativity, problem-solving, and work processes. For example, students working on a project related to agriculture might use AI tools to recognise plant diseases, or those involved in a project on recycling might use AI to optimise waste sorting.

As students' progress through the grades, they will gain confidence in using AI tools and may even design their own AI applications in later stages.

The integration of AI into vocational education ensures that students are prepared for the future of work, where technology plays an increasingly important role.

Assessment of Students

Assessment in vocational education is comprehensive and includes multiple methods to evaluate both the process and the product of students' work. The key forms of assessment include:

- Formative assessment
- Summative assessment
- Self and peer assessment
- Assessment of values and dispositions
- Rubrics assessment

Leveraging Community Resources

Community involvement is a crucial element of vocational education. Schools are encouraged to partner with local businesses, industries, and resource persons to provide students with real-world learning opportunities. The community plays a key role in supporting vocational projects by offering resources, mentorship, and internship opportunities. Pairing students with teachers, senior students, or community members will guide them in academics and career development. By leveraging community resources, schools can enhance the vocational education experience and provide students with meaningful connections to the world of work.

Support System

The successful implementation of vocational education requires coordination at multiple levels, from the national to the school level. The key stakeholders include the following:

1. **National level:** The Pandit Sunderlal Sharma Central Institute of Vocational Education (PSSCIVE), a unit of NCERT, serves as the principal coordinating agency for vocational education at the national level, responsible for curriculum development, teacher training, and teaching-learning resource creation.
2. **State and district levels:** State Councils of Educational Research and Training (SCERTs) and District Institutes of Education and Training (DIETs) play key roles in supporting

schools by providing training to teachers, developing localised teaching materials and offering guidance on project selection and implementation.

3. **Schools:** At the school level, the School Head and Vocational Coordinator are responsible for overseeing the implementation of vocational projects, ensuring that students have access to the necessary resources and support. Teachers work closely with the school leadership to design and implement projects, assess student progress, and facilitate community engagement.

At the school level having trained counsellors to support students' emotional and mental well-being through regular check-ins, therapy sessions, and conflict resolution should be ensured at all stages of education. Establish a variety of clubs (sports, arts, science, vocational) to help students build social skills, leadership, and teamwork. Engaging parents and guardians through regular communication and school events to ensure a collaborative approach to the student's success should be encouraged at all levels.

Role of Teachers

Teachers are central to the success of vocational education in the Middle Stage. They are responsible for designing and implementing vocational projects, assessing student progress, and providing feedback. Teachers are encouraged to:

1. **Foster collaboration** among students by organising group projects and facilitating peer learning.
2. **Connect projects to real-world situations,** helping students see the relevance of their work to their lives and future careers.
3. **Accommodate different learning styles** by offering a variety of teaching methods and tasks.
4. **Encourage reflection** on the learning process, helping students think critically about their experiences and identify areas for improvement.

Teachers are also responsible for developing relationships with local resource persons and community members to enhance the vocational education experience for their students.

Organisation of *Kaushal Mela* (Skill Exhibition)

The *Kaushal Mela* (Skill Exhibition) serves as a platform for students to showcase their projects to the community, building a triangular

relationship among students, teachers, and community members. This event encourages community members to take an active interest in students' learning and provides valuable feedback on their projects. This event serves several purposes:

- Exhibition of student's project work
- Showcasing Community engagement
- Student reflection
- Teacher-Parent Interaction

The *Kaushal Mela* is an important instrument for assessing student's ability, motivating them, building community support for vocational education and providing valuable feedback to both students and teachers.

Summary

Vocational education at Middle Stage is a transformative initiative that aligns with the goals of NEP 2020 and NCF-SE 2023. The implementation of vocational education in the Middle stage (Grades 6 to 8) aims to expose students to various soft skills and vocational skills through project-based teaching-learning, thus enhancing their career awareness and skill development. The vocational education at the early age focuses on early exposure to practical skills, fostering critical thinking, problem-solving, and developing entrepreneurial abilities. It encourages integration of vocational subjects with academic learning, while promoting inclusivity and equitable access to skill education for all students. By introducing students to a wide range of vocations and providing hands-on, project-based learning experiences, the curriculum equips students with the skills, knowledge, values and work ethics they need to succeed in the world of work. The project-based approach will enable infusion of technology and encourage community participation in the development of vocational skills in students to meet future challenges. The guidelines emphasise the development of soft skills like communication and teamwork, and preparing students for using technologies like artificial intelligence, to improve productivity and efficiency. Project-based learning elevates the value of vocational professions and create a balanced educational experience that supports both academic and skill-based growth of students.

CHAPTER 7

Fun-based Learning, Bagless Days, Hub and Spoke Model

OVERVIEW

Modern educational approaches have evolved significantly, shifting from traditional, lecture-based methods to more innovative, student-centred learning strategies. This transformation emphasises the importance of engaging students actively in the learning process, moving away from passive absorption of information to dynamic, interactive experiences. Techniques such as project-based learning, flipped classrooms, and the integration of technology, including digital tools and online platforms, are now dominant. These methods encourage critical thinking, problem-solving, and collaboration among students, defining learning more relevant and practical. Engaging students in this way not only enhances their understanding and retention of knowledge but also fosters a love for stress-free learning, equipping them with the skills necessary to adapt to an ever-changing world.

Fun-based learning activities, bagless days, and the hub and spoke model represent innovative educational strategies designed to enhance student engagement and learning outcomes.

Fun-based learning activities incorporate playful, interactive methods into the curriculum, making learning enjoyable and fostering a deeper connection to the material. Historically, traditional education often focused on rote memorisation and rigid structures, but the shift towards fun-based learning recognises the importance of motivation and enthusiasm besides incorporating joyful learning. Bagless days, where students attend school without their traditional heavy school bags, promote experiential learning and reduce the physical burden on students. This concept has evolved from hands-on, practical learning experiences over textbook-based instructions. The activities may include visits to industries and different types of workplaces.

The hub and spoke model in education refers to a central hub (a main school or learning centre) connected to various spokes (satellite schools or learning resources), facilitating resource sharing and collaborative learning. Originating from logistical frameworks in business and transportation, this model in education aims to optimise resource use and enhance educational accessibility and opportunities. In contemporary education systems, these approaches are significant as they address diverse learning styles, promote holistic development, and adapt to the evolving needs of students, thereby preparing them for the complexities of the modern world.

Objectives

After the completion of this chapter, you will be able to:

1. describe the shift to innovative teaching methods
2. explain how fun-based learning differs from rote memorisation make learning enjoyable.
3. explain the role of bagless days in experiential learning and recognise how 'bagless days' strategy helps in providing opportunity to get exposure to this world of work.
4. identify benefits and challenges of the hub and spoke model.
5. discuss NEP 2020's integration of Fun-based activities and vocational skills with focus on hands-on learning.
6. comprehend FBLA objectives for Grades 6, 7, and 8.

Fun-based Learning in NEP 2020

NEP 2020 has concretised the learning concept that involves fun element, in their report by providing 21st century skills to the middle school students in stipulated bagless days through the pedagogy of Fun-based learning. It also envisages that "every student will opt fun course, during Grades 6–8, that gives a survey and hands-on experience of a sampling of important vocational crafts, such

Fig. 7.1: Fun-based Learning

as carpentry, electric work, metal work, gardening, pottery making, etc., as decided by states and local communities and as mapped for local skilling needs. A practice-based curriculum for Grades 6-8 will be appropriately designed by NCERT while framing the NCF-SE 2023. All students will participate in a 10 days bagless period sometime during Grades 6–8 where they will do internship within local vocational experts such as carpenters, gardeners, potters, artists, etc. Similar internship opportunities to learn vocational subjects may be made available to students throughout Grades 6–12, including holiday periods. Vocational courses through online mode will also be made available. Bagless days will be encouraged throughout the year for various types of enrichment activities involving arts, quizzes, sports, and vocational crafts. Children will be given periodic exposure to activities outside school through visits to places/monuments of historical, relevance cultural and tourist importance, meeting local artists and craftsmen and visits to higher educational institutions in their village/Tehsil/District/State."

Fun-based Learning Activities (FBLA)

Fig. 7.2: Fun-based Learning Activities

Fun-based learning is a popular pedagogical approach and is practised across the world. It means indulging students in relevant activities by stimulating their senses of sight, smell, vision or touch and involving them in the learning of the subject. Fun-based learning can also be an exhilarating, motivating and transformative experience for the students.

The FBLA are designed to provide the basic knowledge of various livelihoods and life-skills in a fun-based manner to the students of Grades 6–8 so as to make them aware of the world of work and develop a positive attitude towards dignity of labour.

The FBLA include activities which are exclusively developed from scratch and draws no hard boundaries between curricular, extra-curricular, or co-curricular areas of the current education system. The developed activities can easily be applicable and

replicable according to regional and local skilling needs with its dynamic and frugal nature. These activities offer a glimpse of future professions along with practical exposure of different types of vocations. The FBLA have been designed for Grades 6 to 8, based on cognitive levels, age appropriateness and safety measures.
(Note: The FBLA books have been designed separately for Grades 6 to 8. These books under the title "Fun-based Learning Activities" are available on PSSCIVE website).

Bagless Days

Bagless days will be encouraged throughout the year for various types of enrichment activities involving arts, quizzes, sports, and vocational crafts.

Fig. 7.3: Bagless Days

Every student will take a fun course, during Grades 6–8, that gives a survey and hands-on experience of a sampling of important vocational crafts, such as carpentry, electric work, metal work, gardening, pottery making, etc., as decided by States and local communities and as mapped for local skilling needs. Children will be given periodic exposure to activities outside school through visits to places/monuments of historical, cultural and tourist importance, meeting local artists and craftsmen and visits higher educational institutions in their village/Tehsil/District/State (NEP 2020).

The idea of Bagless Day Activities is in line with the NEP 2020's emphasis on easing academic stress and encouraging a well-rounded approach to education. These activities are designed to reduce both the physical and mental load on students by offering engaging learning experiences that do not rely on textbooks or heavy school bags.

Children will also be exposed to business establishments and other work places related to the areas mentioned in the NEP 2020 such as gardens, shops of electric, metal, carpentry, etc., in the vicinity during visits.

One of the key features of Bagless Day Activities is the interdisciplinary approach, where learning extends beyond the confines of a single subject. For instance, a field trip to a historical site may simultaneously cover elements of history, geography, and environmental science. These activities also integrate technology by offering digital resources and virtual field trips that enhance learning beyond physical boundaries. In addition, community engagement projects enable students to learn about social issues, develop empathy, and take part in real-world problem-solving. Bagless Day activities are not just about reducing the load on students; they create opportunities for hands-on learning, which contributes significantly to the development of practical skills. The '10 bagless days' approach will be helpful for students, not only in knowledge acquisition but will also play a crucial role in developing values, work ethics and multiple skills with respect to giving due emphasis on VE, the bagless days may be related to activities and concerning world of work.

(Note: The details are given in the guideline entitled "Implementation of 10 Bagless days in School" available on PSSCIVE website).

Difference between the Approaches – Fun-based Activities and Bagless Days

Fun-based Activities and Bagless Day Activities encourages active participation and holistic learning, they differ in their primary focus, approach and types of outcomes. Fun-based Activities are primarily centred on enjoyment, creativity, and social-emotional development, using play-based methods and fostering hands-on learning experiences whereas Bagless Day Activities, focuses on reducing the physical and mental burden of traditional schooling, field trips, digital learning experiences, and community projects to offer students a broader perspective of the world including job market.

These activities, while distinct in their structure, are complementary and align with the broader objectives of NEP 2020. The NEP advocates for experiential learning, where students engage directly with the material and the world around them. It also emphasises interdisciplinary learning and the integration of technology to enhance educational experiences. By incorporating Fun-based Learning and Bagless Day into the curriculum, educators

can ensure that students develop a wide range of skills, from creativity and critical thinking to collaboration and problem-solving.

The alignment of these types of activities with the principles of NEP 2020 reflects a commitment to fostering holistic development, student-centred learning, and inter-disciplinary approaches. By integrating these activities, schools can create an engaging, dynamic, and holistic development that prepares students for the complexities of the modern world.

Aspect	Fun-based Learning	Bagless Days
Objective	To enhance engagement, creativity, and social-emotional development through play-based and interactive methods.	To reduce the physical and mental burden of traditional schooling while exposing students to real-world experiences and career insights.
Implementation	Involves games, art, storytelling, role-playing, hands-on projects, and group activities within the classroom setting.	Includes field trips, digital learning sessions, community projects, and experiential learning outside the traditional classroom.
Focus	Encourages enjoyment, imagination, and self-expression through fun and interactive learning methods.	Emphasises real-world exposure, practical knowledge, and interdisciplinary learning beyond textbooks.
Approach	Play-based and student-centred, fostering intrinsic motivation and curiosity.	Experience-based and exploratory, connecting students to practical life applications.
Integration with NEP 2020	Supports experiential learning, interdisciplinary approaches, and fostering critical thinking and collaboration.	Aligns with the vision of reducing rote learning, encouraging skill-based education, and making learning more application-oriented.
Outcomes	Develops creativity, communication skills, teamwork, and problem-solving abilities.	Broadens students' perspectives, enhances adaptability, and prepares them for future career and societal roles.
Overall Impact	Creates an enjoyable and interactive learning environment that improves conceptual understanding.	Provides holistic development by integrating practical exposure with academic learning.

Hub and Spoke Model

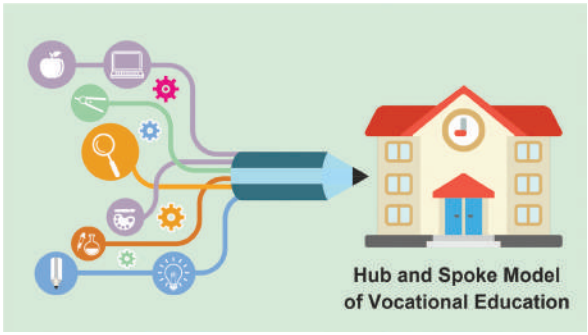

Fig. 7.4: Hub and Spoke Model

Hub and Spoke Model of vocational education has been introduced for providing the utilisation of the infrastructure available in the Hub schools by the students of nearby schools known as spoke schools for vocational training. The hub and spoke model are an organisational framework that features a centralised 'hub' supported by various 'spokes' for efficient distribution of resources. In this model, the hub serves as the main centre that houses key resources, expertise, and administrative functions. The spokes are smaller, satellite locations that connect to the hub, facilitating the flow of resources, information, and services. This structure allows for a streamlined and coordinated approach to managing and disseminating resources.

Advantages of Hub and Spoke Model

The hub and spoke model have several advantages in vocational education:

- **Optimised Resource Utilisation:** By centralising resources at the hub, schools can reduce redundancy and costs. This shared access to facilities and expert instructors allows for efficient use of resources.
- **Enhanced Learning Opportunities:** Students benefit from exposure to specialised resources and instructors, enriching their learning experiences and leading to improved educational outcomes.
- **Flexibility and Adaptability:** This model allows schools to quickly respond to changing educational needs and trends. The centralised resources and expertise at the hub facilitate adaptability and innovation.

Holistic Curriculum Design

Holistic curriculum design combines fun-based activities, bagless days, and the hub and spoke model to create a dynamic, engaging curriculum. This approach enhances student engagement, reduces

physical strain, and facilitates resource sharing across different learning centres, preparing students for a holistic development.

Teacher Training

Teacher training programmes should focus on fun-based learning techniques, bagless days, and hub and spoke model operations. Professional development workshops, continuous learning modules, and hands-on sessions equip teachers with necessary skills.

Fig. 7.5: Teacher Training

Assessing Effectiveness

The effectiveness of integrated approaches to education is assessed through regular assessments, surveys, feedback, and data-driven analysis. Regular monitoring and adjustments ensure the curriculum remains relevant and effective, while identifying areas for improvement and enhancing student well-being.

Portfolio

Portfolio is the unique collection of an individual's students work over the years showcasing his/her talent and unique skills. The Fun-based activities, bagless days and Kaushal Utsav engagements also offer opportunities for creativity and innovations in various art and craft based vocational projects. Compilation of these activities into a portfolio will be an asset for the students in their future endeavour.

Summary

The integration of Fun-based activities, bagless days, and the hub and spoke model offers a holistic approach to education. By blending these methods, educators can create dynamic and

engaging learning environments. Teacher training and continuous development are crucial for effective implementation. Regular assessments and feedback mechanisms are essential for monitoring progress and making necessary adjustments. Addressing potential challenges, such as resistance to change and resource constraints, is key to ensuring successful integration. By fostering a supportive environment and adapting to diverse learning needs, schools can create inclusive and effective educational frameworks. Integrating Fun-based activities, bagless days, and the hub and spoke model creates a dynamic and holistic curriculum.

CHAPTER
8

Development of Employability Skills

OVERVIEW

Employability skills form the cornerstone of a successful and sustainable career in the modern workforce. As industries evolve in response to technological advancements, globalisation, and environmental challenges, the need for a versatile and skilled workforce has become paramount. This chapter delves into the essential employability skills that enable individuals to adapt to professional demands, excel in their chosen fields, and contribute meaningfully to society.

Employability skills are vital not only for securing employment but also for thriving in diverse and dynamic professional environments. Communication skills are emphasised as the foundation for effective interpersonal and professional interactions. As the world increasingly integrates digital technology, Information and Communication Technology (ICT) and use of Artificial Intelligence (AI) is indispensable for workplace efficiency and innovation. Similarly, entrepreneurship fosters critical thinking, innovation, and leadership, enabling individuals to navigate and succeed in competitive business landscapes.

By exploring these interconnected skill sets, the chapter aims to bridge the gap between academic learning and real-world application, ensuring that individuals are well-prepared to meet the demands of a rapidly changing job market. The insights and practices discussed here will empower learners to not only secure meaningful employment but also to excel and lead in their respective fields, contributing to a sustainable and prosperous future.

Objectives

After completing this chapter, you will be able to:

1. describe employability skills.
2. identify the importance of employability skills in bridging the gap between academic learning and real-world application.
3. assess the role of teacher in developing employability skills.
4. empower learners to thrive and lead in diverse professional settings.

Employability Skills

Employability skills can be defined as those soft skills which employers look for in a potential employee. These skills equip the employees to carry out their role to the best of their ability and client satisfaction. For example, the ability to explain what you mean in a clear and concise way through written and spoken means, helps to build a better relationship with the client or the customer. Similarly, handling stress that comes with deadlines for finishing work and ensuring that you meet the deadlines can be done through effective self-management training. It can also be done by working well with other people from different disciplines, backgrounds, and expertise to accomplish a task or goal.

Fig. 8.1: Employability Skills

In today's digital age, employers expect that the employees should be able to make use of elementary functions of information and communication technology to retrieve, access, store, produce, present and exchange information in collaborative networks via the Internet. Students need to develop entrepreneurial skills, so that they can develop necessary knowledge and skills to start their own business, thus becoming job creators rather than job seekers. Potential employees need to develop green skills, technical skills, knowledge, values and attitudes required in the workforce to develop and support sustainable social, economic and environmental outcomes in business, industry and the community. Thus, it comprises the range of skills to meet the skill demands of the organisation or to set up or run a business.

Importance of Employability Skills

The specific objectives of vocationalisation of secondary education are to enhance the employability of youth through demand-driven modular vocational courses; to maintain their competitiveness through provisions of multi-entry–multi-exit learning opportunities and vertical mobility; and to fill the gap between the educated and the employable, and to reduce the dropout rate of the secondary level education.

Fig. 8.2: Importance of Employability Skills

The success of an individual as an employee or as an entrepreneur (employer) in a knowledge-based economy will depend upon skills,

creativity, imagination, ability to create or innovate ideas, take risk, turn ideas into reality and the ability to cope with change and adapt quickly to new environment and people. Therefore, the employability skills become very important for the success of the learner.

The employability skills included in the curriculum will enhance employability of the students and prepare them for better and long-term wage employment, entrepreneurship, further learning and also for green skills (skills for sustainability). These skills go beyond technical expertise and enable individuals to adapt, collaborate, and contribute effectively in various professional settings. The importance of employability skills include:

1. Enhanced Job Performance

- **Teamwork and Collaboration:** These skills equip the individual with the ability to work effectively with colleagues that ensures smooth operations and fosters a productive environment.
- **Problem-solving:** Employers value workers who can analyse challenges and propose solutions independently or collaboratively.

2. Increased Career Opportunities

- **Communication Skills:** Strong verbal and written communication enhance the ability to network and secure job opportunities.
- **Adaptability:** Being flexible and open to change pave the way to get more accessible to employers and ever evolving job market.

3. Better Workplace Relationships

- **Emotional Intelligence:** Skills like empathy and self-awareness help build trust and rapport with colleagues and supervisors.
- **Conflict Resolution:** Effective management of disagreements contributes to a harmonious work environment.

4. Professional Growth

- **Time Management:** Prioritising tasks effectively boosts productivity and opens doors for leadership roles.
- **Critical Thinking:** Analytical skills helps in taking up complex projects and advancement in the career.

5. Employer Expectations

- Companies seek candidates who not only possess technical knowledge but also demonstrate the ability to learn new skills in ever-evolving job sectors.
- Employability skills often make the difference between candidates with similar technical qualifications.
- Future-proofing Careers in an era of automation and rapid technological change, employability skills like creativity, adaptability, and interpersonal communication remain critical.
- These skills ensure transition to new roles as industries evolve.

Employability skills often overlap. For example, leadership incorporates multiple abilities such as collaborating with others, planning and organising, decision-making, and verbal communication. Even verbal communication encompasses various methods, including phone conversations, delivering presentations, and explaining concepts to individuals with limited knowledge of a topic. Since these skills overlap, improving one skill often leads to growth in others.

In today's knowledge-driven economy, success increasingly depends on skills, creativity, and imagination for innovations. While foundational abilities like literacy, numeracy, and technical or craft skills remain essential, modern workplaces prioritise adaptability and the ability to navigate change. Employers value individuals who can thrive in new environments and collaborate effectively with diverse people. Highlighting employability skills on resume and demonstrating them during interviews can significantly improve the job prospects.

Employability Module

The employability skills are embedded in the Qualification Packs (QPs) of the different job roles in various sectors under the National Skill Qualification Framework. It is under this backdrop that Pandit Sunderlal Sharma Central Institute of Vocational Education (PSSCIVE), Bhopal, has developed learning outcomes based modular curricula for employability

Fig. 8.3: Skills

skills from Grades 9 to 12. These modules have been developed under the Centrally Sponsored Scheme of Vocationalisation of Secondary and Higher Secondary Education. These employability skills modules take care of generic skills embedded in various job roles in a comprehensive manner and also provide more opportunities and scope for students to engage with these common and necessary skills, such as communication, critical thinking and decision making in different situations pertaining to different job roles. A common textbook on 'Employability Skills' developed for Grades 9 to 12 across all sectors which covers communication skills, self-management, information and communication technology, entrepreneurial and green skills. These skills are highly valued by employers and are often transferable across different roles and industries. Following are the key employability skills.

1. Communication Skills

- **Verbal Communication:** Clearly expressing ideas through communication and furnishing information.
- **Written Communication:** Writing clear and precise expressions/instructions for reports, emails, presentations, etc.
- **Listening Skills:** Attentively listening, recording and following instructions or noting down feedback.

2. Self-management

- **Time Management:** Prioritising tasks to meet deadlines.
- **Discipline and Accountability:** Staying motivated and responsible for the work in hand.
- **Stress Management:** Maintaining composure and productivity under stressful situation.
- **Goal Setting:** Envisioning, strategising, planning and pursuing short- and long-term objectives.

3. Information and Communication Technology (ICT) Skills

- **Digital Proficiency:** Using tools like MS Office, Google Workspace, or specialised software.
- **Internet Research:** Accessing reliable information and resources online.
- **Communication Platforms:** Proficiency in tools like Zoom, Slack, or Microsoft Teams.

- **Data Security:** Understanding basic principles of cybersecurity and safe data handling.
- **AI Inclusion:** Recent Technological Advancement in the job market have attracted robotics, AR, VR with the support of AI. Similarly, Virtual Labs are significant in handling simulations through AR and VR.

4. Entrepreneurial Skills

- **Innovation and Creativity:** Thinking outside the box and proposing new ideas.
- **Problem-solving:** Finding efficient and effective solutions to challenges.
- **Risk Management:** Assessing and taking calculated risks in decision-making.
- **Business Acumen:** Understanding market needs, customer behaviour, and financial basics.

5. Green Skills

- **Sustainability Awareness:** Understanding environmental challenges and promoting eco-friendly practices.
- **Resource Management:** Efficiently using resources like energy, water, and materials.
- **Waste Reduction:** Implementing strategies to minimise waste generation.
- **Renewable Energy Knowledge:** Familiarity with clean energy sources and technologies.

Scheme of Module

The vocational curricula are designed for Grades 9 to 12 in two parts, Part A contains Employability Skills and Part B contains Vocational Skills. Employability Skills carries 37 per cent and vocational skills carries 67 per cent of weightage in the curriculum. The employability skill module has been developed as per the learning outcome-based curriculum and designed to help individuals in developing knowledge, skills, and attitudes necessary for success in the workplace. These modules typically focus on skills that are highly valued by employers across various industries. These skills are not job-specific but are crucial for gaining employment, maintaining a job, and succeeding

in career development. The links given below provide an overview of what is covered in an Employability Skills Module for Grades 9 to 12:

1. Learning outcome-based curriculum employability skills for Grade 9— employability-skills-i-english.pdf
2. Learning outcome-based curriculum employability skills for Grade 10— employability-skills-ii-english.pdf
3. Learning outcome-based curriculum employability skills for Grade 11— employability-skills-iii-english.pdf
4. Learning outcome-based curriculum employability skills for Grade 12— employability-skills-iv-english.pdf

The employability skills module is to provide learning experience through a blended approach of text and video-based interactive e-learning lessons. These are typically developed through education, work experience, volunteer work, or extracurricular activities. The textbook developed by PSSCIVE, NCERT is available online.

Role of Teacher in Facilitating the Development of Employability Skills

Vocational teachers play a key role in equipping students with employability skills, which are essential for their success in the world of work. Their responsibilities extend beyond teaching technical knowledge, as they help bridge the gap between education and industry demands. Here are the key roles vocational teachers play:

1. Imparting Technical and Practical Skills

- **Job-specific Training:** Vocational teachers provide hands-on training in specific trades or industries, such as carpentry, healthcare, IT, automotive services, etc.
- **Use of Modern Tools and Technologies:** They expose students to industry-standard equipment, tools, and software, ensuring then workplace-ready.
- **Simulated Work Environments:** Teachers often replicate real-world job settings to give students a practical understanding of their future roles.

2. Fostering Core Soft Skills

- **Communication Skills:** Vocational teachers train students to communicate effectively in both verbal and written formats, which is vital for teamwork and client interactions.

- **Problem-solving Abilities:** They encourage critical thinking and innovation to help students address challenges in dynamic workplace scenarios.
- **Teamwork and Collaboration:** Through group projects and activities, teachers help students build interpersonal and teamwork skills.
- **Time Management:** Teachers emphasise the importance of meeting deadlines and managing workloads effectively.

3. Developing Work Ethics and Professionalism

- **Workplace Behaviour:** Vocational teachers instill values such as punctuality, accountability, and discipline.
- **Adaptability:** They prepare students to adjust to different roles, responsibilities, and changing industry trends.
- **Ethics and Integrity:** Students learn the importance of ethical behaviour and professionalism in their work.

4. Supporting Career Guidance

- **Industry Exposure:** Teachers often arrange site visits, internships, or guest lectures by industry professionals.
- **Career Guidance:** They help students understand career paths, job roles, and expectations in various industries.
- **Resume Building and Interview Preparation:** Teachers guide students in creating professional resumes and preparing for job interviews.
- **Career Counseling:** Teachers assist students in identifying career paths, understanding job roles, and setting career goals.

5. Building Employability Through Certifications

- **Industry-recognised Credentials:** Vocational teachers guide students in obtaining industry-recognised certifications that enhance their resumes and improve employability.
- **Competency Standards:** They align their teaching with industry benchmarks and competency frameworks.

6. Encouraging Entrepreneurship

- **Business Skills Training:** Vocational teachers provide basic training in entrepreneurship, including financial literacy, marketing, and business planning.

- **Innovation and Creativity:** Vocational teachers inspire students to think outside the box and identify market opportunities.

7. Providing Industry Exposure

- **Keeping Up with Industry Trends:** Vocational teachers regularly update their knowledge and skills to ensure their teaching remains relevant to evolving industry requirements.
- **Internships and Apprenticeships:** Vocational teachers often facilitate internships, apprenticeships, or on-the-job training to give students real-world experience.
- **Industry Connections:** Vocational teachers collaborate with employers and industry professionals to align teaching with market needs and offer students networking opportunities.
- **Guest Lectures and Site Visits:** Teachers organise industry expert sessions or workplace visits to help students understand job expectations.

8. Providing Mentorship and Support

- **Personal Development:** Teachers mentor students on setting career goals and overcoming personal or academic challenges.
- **Networking:** Vocational teachers help students build connections with industry professionals and alumni networks.

Planning and Execution for Development of Employability Skills During the Course

To develop employability skills in students during vocational education, effective planning and execution is desirable. Below is detailed strategic plan for specific industries with examples of activities and implementation strategies:

1. Hospitality and Tourism

Skills Area: Communication, customer service, teamwork, cultural awareness, and adaptability.

Activities

- **Role-playing Customer Interactions:** Simulate real-world scenarios like checking in guests, handling complaints, or recommending menu items.

- **Event Management Projects:** Assign students to plan and execute small events like mock weddings, conferences, or food festivals.
- **Guest Lectures:** Invite hotel managers, chefs, or travel consultants to discuss real-world challenges.
- **Field Visits:** Organise trips to hotels, airports, or tourism hubs to observe operations.

Practical Exposure

- Partner with hotels, restaurants, and tour operators for internships.
- Include certification programmes like food safety, first aid, or language courses (for example, English for Travel & Tourism).

2. Information Technology (IT)

Skills Area: Problem-solving, technical expertise, collaboration, adaptability, and critical thinking.

Activities

- **Project-based Learning:** Assign tasks such as building a website, developing an app, or setting up a small network.
- **Hackathons:** Organise problem-solving events where students work in teams to create innovative solutions.
- **Peer Code Reviews:** Teach collaboration by having students review and provide feedback on each other's work.
- **Workshops:** Conduct sessions on trending technologies like cloud computing, cybersecurity, or artificial intelligence.

Practical Exposure

- Partner with IT companies for internships or job shadowing.
- Encourage participation in online coding competitions (for example, Code forces, Hacker Rank).

3. Manufacturing and Trades

Skills Area: Technical skills, safety protocols, teamwork, attention to detail, and time management.

Activities

- **Hands-on Workshops:** Conduct activities on welding, CNC machining, or electrical installations.

- **Process Simulations:** Use tools like VR simulations to teach safety protocols or assembly line workflows.
- **Lean Manufacturing Games:** Teach efficiency and waste reduction through interactive exercises.
- **Tool Handling Demos:** Train students on industry-standard tools and machines.

Practical Exposure

- Partner with local manufacturing plants for apprenticeships.
- Collaborate with industry experts to conduct safety certification training.

4. Health and Allied Services

Skills Area: Communication, empathy, critical thinking, attention to detail, and adaptability.

Activities

- **First Aid and Emergency Response Training:** Use dummies or simulations to teach CPR and other first aid practices.
- **Patient Interaction Role-plays:** Simulate scenarios such as communicating with patients or resolving conflicts.
- **Case Studies:** Analyse real-life medical or health-related cases to enhance critical thinking.
- **Team Challenges:** Assign group projects to create patient care plans or mock health campaigns.

Practical Exposure

- Arrange internships in hospitals, clinics, or community health centres.
- Host workshops by healthcare professionals on latest medical technologies.

5. Retail and Customer Service

Skills Area: Communication, interpersonal skills, problem-solving, digital literacy, and adaptability.

Activities

- **Mock Store Set-up:** Create a retail space where students practice stocking shelves, customer interactions, and point-of-sale operations.

- **Conflict Resolution Training:** Teach how to handle difficult customers through role-playing.
- **Market Research Projects:** Assign students to analyse consumer behaviour trends or develop marketing plans.
- **Sales Pitch Practice:** Facilitate students develop and deliver sales pitches to improve persuasive communication.

Practical Exposure

- Partner with retail chains for part-time jobs or internships.
- Include certifications in digital tools like CRM software or inventory management systems.

Summary

Employability skills are no longer optional but essential for success in the modern workplace. They complement technical expertise and empower individuals to excel in diverse environments. These soft skills, including communication, ICT proficiency, entrepreneurial abilities, and green practices, enable individuals to adapt, excel, and contribute meaningfully in diverse professional environments. Integrated into vocational curricula under the National Skill Qualification Framework, employability modules focus on critical areas like self-management, problem-solving, and sustainability. These skills prepare students for employment, entrepreneurship, and future workplace challenges.

Teachers play a pivotal role in equipping students by providing hands-on training, fostering teamwork, guiding career preparation, and offering industry exposure through internships and certifications. Sector-specific activities, such as role-playing, mock set-ups, and workshops, enhance practical learning in fields like IT, healthcare, retail, and manufacturing. Employability skills improve job performance, strengthen workplace relationships, and expand career opportunities. They ensure students are future-ready, bridging the gap between education and real-world demands while promoting sustainable growth and innovation.

CHAPTER 9

Training Connects to Real 'World of Work' Settings: On-the-job Training, Internship, Apprenticeship Training and *Kaushal Utsav*

Overview

Vocational education has long been recognised as a cornerstone of workforce development, bridging the gap between academic learning and industry requirements. Among various strategies for experiential learning, on-the-job training (OJT), internship and apprenticeship training are effective methods, offering hands-on experience in real work settings. Unlike conventional classroom-based instructions, these skill development strategies will enable learners in fostering skill acquisition under the guidance of experienced professionals. NEP 2020, has further emphasises the role of OJT in integrating work-based learning into education systems. Similarly, *Kaushal Utsav* has also been introduced recently as innovative event to showcase creativity and skill development for excellence. NCF-SE 2023 has given focus to skill development through showcasing job fairs named as '*Kaushal Utsav*'. Towards the end of the academic year, a *Kaushal Mela* (skills fair) is being organised in schools for students to demonstrate their projects to the school, community members and other stakeholders. This includes a presentation of the project work, key learnings, reflections and use of learnt skills at home.

Objectives

After completing this chapter, you will be able to:

- acquaint with the concepts and importance of on-the-job training, internships, apprenticeship training, and *Kaushal Utsav*.
- understand the role of these training methodologies in enhancing vocational education and employability.
- plan and provide guidelines and best practices for implementing these training programmes.

- discuss the alignment of these training methods with the goals of NEP 2020 and NCF-SE 2023.
- offer insights into the benefits and challenges associated with each training methodology.

On-the-job Training (OJT)

On-the-job Training (OJT) offers trainees the opportunity to practice skills and apply knowledge in realistic work environments. This approach enables students to connect classroom learning with real-world tasks. Conducted under the supervision of experienced trainers or mentors, OJT combines theoretical understanding with hands-on application, promoting immediate learning and skill retention. The origins of OJT can be traced back to traditional apprenticeship systems, where learners honed their skills under the guidance of master craftsmen. With the advent of industrialisation, formal OJT gained prominence as industries required a skilled workforce capable of operating machinery and handling complex tasks. In principle, the OJT should include detailed instructions about safe handling of machine operations only under supervision of technical persons.

Fig. 9.1: On-the-job Training (OJT)

The instructions should be both verbal and written as required for accuracy with respect to the working, scientific principle and skills.

Significance of OJT in Vocational Education

OJT plays a pivotal role in vocational education by:

1. **Enhancing Practical Competencies:** It enables students to perform tasks in real-world settings, bridging the gap between theoretical learning and professional requirements.

2. **Improving Employability:** By gaining first-hand experience, students develop industry-specific skills, boosting their job prospects.
3. **Building Confidence and Adaptability:** Exposure to workplace dynamics fosters self-reliance and adaptability to diverse environments.
4. **Strengthening Industry Linkages:** Collaborative OJT initiatives help educational institutions align their curricula with evolving industry standards, ensuring relevance and responsiveness to workforce demands.

Implementation Strategies

Effective OJT implementation requires careful planning and collaboration among stakeholders. The guidelines recommend the following strategies:

1. **Planning and Budgeting:** Schools must prepare realistic budgets covering transportation, materials, and other logistics.
2. **Target Group Identification:** Focus on secondary school students (Grades 9–12) enrolled in vocational programmes.
3. **Training Plans:** Develop comprehensive plans outlining tasks, desired outcomes, and resource requirements, approved by school authorities.
4. **Execution:** Use the ADDIE model (Analysis, Design, Development, Implementation, Evaluation) for structured training delivery.
5. **Evaluation and Feedback:** Assess students' performance through pre-defined criteria, gather feedback from trainees and mentors, and incorporate improvements in future training sessions.

OJT Plan

The Training Plan is to be developed by the Instructor/Trainer or the Supervisor in consultation with the Vocational Teacher or Vocational Trainer (VT) in advance. This Training Plan may include a checklist of tasks to be performed, details about who will supervise each task and the list of the desired goals and learning outcomes to be achieved through the training programme. The Training Plan should

be approved by the Head of the school/institution. Employability skills development components may also be included namely entrepreneurial skills, green skills, use of ICT, self-management and communication skills.

Monitoring and Evaluation of OJT Programmes

Effective monitoring and evaluation of On-the-job training (OJT) programmes are critical to ensuring their success and relevance. Therefore, regular check-ins by the Vocational teachers is required for regular monitoring of OJT. Also, frequent interactions between vocational teachers, students, and industry mentors are essential. These meetings help track trainee progress, address challenges, and maintain programme alignment with learning objectives.

Internships

The internship is a planned activity which offers learning at the real job situation under supervision. This part of the skill development programme is important with a view to link theoretical knowledge with practical to develop skills desired for particular job task. The concept of internship is to expose students to professional learning experience at workplace, with respect to work place behaviour, positive attitude and active participation.

- **Relevance:** Internships bridge the gap between classroom learning and workplace applications. They help students understand how theoretical concepts are applied in real-life settings, thereby enhancing their practical skills and industry readiness.
- **Skill Development:** The guided internship sessions enable skill development and competencies to undertake actual task including development of employability skills at the real job situation including industry sites.
- **Workplace Dynamics:** Internships allow students to experience the nuances of professional environments, including teamwork, communication, and adherence to workplace norms.

Significance of Internship in Vocational Education

Internships provide students with hands-on experience, bridging the gap between academic learning and real-world application. The UGC guidelines highlight the following advantages:

1. **Enhancing Student Employability Through Real-World Experience**
   - **Skill Development:** Practical exposure helps students develop job-relevant skills essential for their careers.
   - **Resume Building:** Internship experience enhances a student's resume, making them more attractive to potential employers.
   - **Career Exploration:** Internship allows students to explore various fields, roles, and industries, enabling informed career decisions.

2. Networking Opportunities and Professional Growth

- **Professional Connections:** Internship facilitates interactions with industry professionals, leading to valuable networking opportunities.
- **Mentorship:** It provides guidance from experienced mentors to aid professional and personal growth.
- **Industry Insights:** It offers an understanding of workplace dynamics, practices, and emerging trends.

Implementation Strategies

The guidelines propose a structured approach to internships to maximise their effectiveness:

Steps for arranging school internship

1. Identification of school for Internship by students in hometown/place of duty or elsewhere in India having relevant vocational sector.
2. Contact School Head for internship engagement. Letter from Coordinator may be taken if required.
3. Intimation to coordinator about dates, school name and address, principal name and contact details. Official letter duly signed by the principal for providing facility and permission to carry out internship at the selected schools.
4. Letter from coordinator to school Principal with details of internship activities along with Student Assessment Proforma must be provided. Along with, Bonafide certificate from the school Principal.

5. At the end of internship, filled assessment proforma duly signed by the coordinator/principal will have to be sent to coordinator.

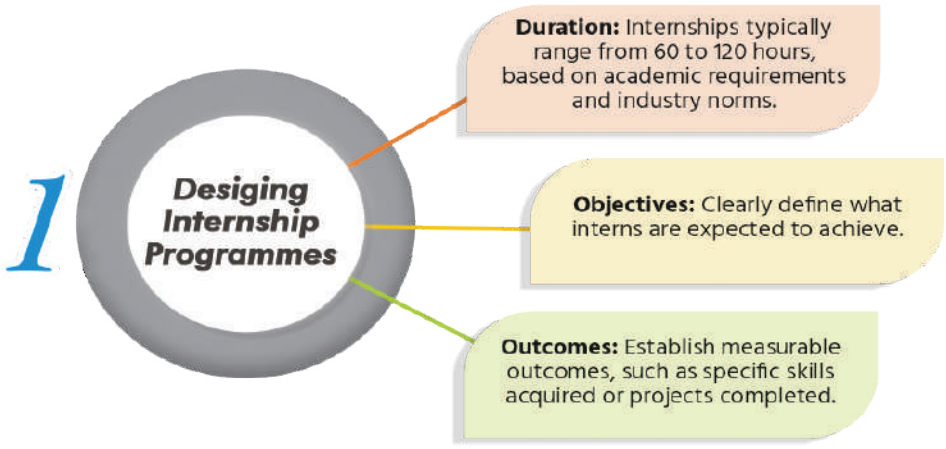

Fig. 9.2: Designing Internship Programmes

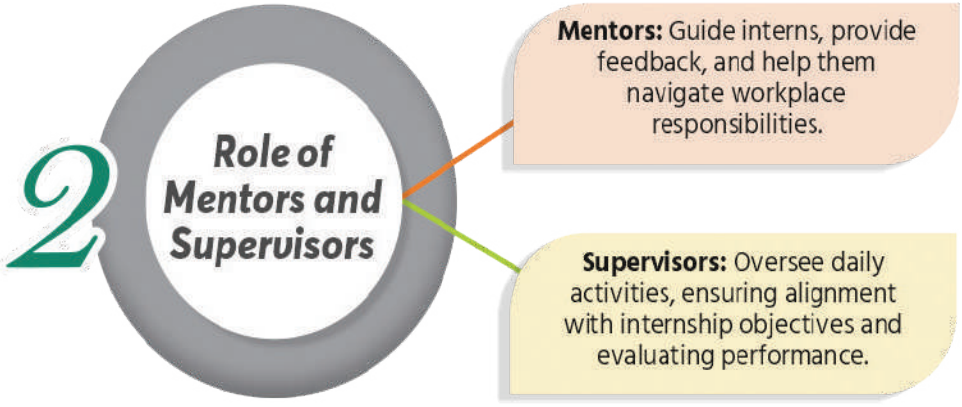

Fig. 9.3: Role of Mentors and Supervisors

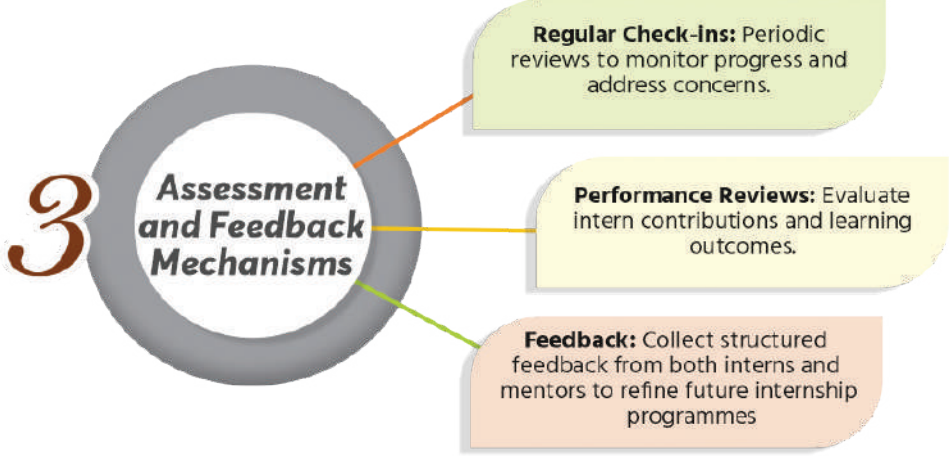

Fig. 9.4: Assessment and Feedback Mechanisms

Internship Plan

(a) An action plan for internship will be checked out by the teacher coordinator and vocational teacher in consultation with internship industry. The plan will include

(i) Activities during internships

(ii) Duration of each activity

(iii) Performance evaluation during the internship

(iv) Certification

(b) Monitoring and evaluation of internship programmes will be undertaken for each intern with respect to 'punctuality', 'attentiveness', 'commitment', 'outcome of the internship' in addition to Terms of Reference (TOR) mutually agreed by the school and the industry.

Apprenticeship Training

Apprenticeship is a Skill Training programme in which a person is hired as an apprentice by a company and receives classroom (theoretical) learning followed by on-the-job (practical) training.

The Ministry of Skill Development and Entrepreneurship (MSDE) runs the Apprenticeship Programme in India, which is governed by the Apprenticeship Act 1961. A digital platform (https://www.apprenticeship.gov.in/) has been created for implementation of the scheme of apprenticeship training.

NCF-SE 2023 has mentioned that in the Secondary Stage, students will need to be given advanced on-site exposure in industrial or agricultural spaces to broadly understand the functioning of vocations in the world of work. Schools must develop linkages with local industries, farms, service centres, cooperatives, relevant NGOs, state transport corporations, cottage industries, printing presses, call centres, software design companies, mobile operating companies, law companies, local water or electricity boards to enable students to spend part of their time gaining work or practical experience at these facilities as apprentices while they are still in school. They can develop a portfolio of their work to demonstrate their readiness for gainful employment. Modes could include an apprenticeship of about a month and a half during the summer vacation. Alternatively, students could spend 2 hours after school hours a few days a week. Assessment could be through a demonstration of work by students, or a portfolio.

Fig. 9.5: Apprenticeship Training

Significance of Apprenticeship in Vocational Education

Apprenticeship training provides for an industry-led, practice-oriented, effective and efficient mode of formal training and as such strengthening of apprenticeship training needs to be given a high priority.

Apprenticeship Training consists of Basic Training and On-the-job Training/Practical Training at workplace in the industry. The basic training is an essential component of apprenticeship training for those who have not undergone any institutional training/skill training before taking up on-the-job-training/practical training. It accounts for 20-30 per cent of overall duration of Apprenticeship Training. Apart from basic training, there is a component of on-the-job training which is performed in the establishments and undertaken by the establishment itself.

Apprenticeship training is available to anyone who has completed 14 years of age (18 years in the case of Hazardous Industries defined under the Apprenticeship Rules), has a minimum of 5th class pass (for Optional Trade), is physically fit for the course, and has the minimum educational qualification prescribed for the trade. The National Apprenticeship Promotion Scheme (NAPS) is a Government of India programme under Ministry of Skill Development and Entrepreneurship that provides financial assistance to enterprises

who offer apprenticeship training. National Apprenticeship Training Scheme (NATS) is one of the flagship programmes of Government of India under Ministry of Education for Skilling Indian Youth. It is a one-year programme equipping technically qualified youth with practical knowledge and skills required in their field of work. There are four region-specific Board of Apprenticeship Training (BOAT) in North, South, East and West region located in Kanpur, Chennai, Kolkata and Mumbai respectively. During the period of apprenticeship, the apprentices are paid a stipend amount, 50 per cent 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.

Some advantages of apprenticeship training are as follows:

1. It is one of the most important schemes in terms of quality of training, experiential learning and the enhanced employability.
2. It is the most promising skills delivery vehicle in the industrial/ training ecosystem.
3. It provides a structured and rigorous training programme which helps apprentices becomes skilled.
4. It gives apprentices a real chance to put skills into practice and helps them to gain confidence in a working environment.

Implementation Strategies

1. Setting Up Programmes

- Conduct need assessment to identify industry skill gaps.
- Develop structured curricula with defined competencies and durations.
- Collaborate with institutions for recruitment and training.

2. Industry Partnerships

- Establish Memorandum of Understanding (MoUs) with industries to ensure programme alignment with workforce demands.
- Engage advisory boards for curriculum development and programme oversight.

3. Monitoring and Certification

- Use online portals for tracking progress and managing documentation.
- Issue nationally recognised certifications upon successful completion of training.

Types of Apprenticeships

1. Traditional vs. Modern Apprenticeships

- Traditional Apprenticeships focus on trades like carpentry, plumbing, and welding, culminating in certification.
- Modern Apprenticeships encompass sectors like IT, healthcare, and finance, incorporating emerging technologies and industry practices.

2. Sector-Specific Programmes

- Designed to meet the unique needs of various industries, from manufacturing to digital services. For instance, IT apprenticeships focus on skills like software development, while healthcare apprenticeships target roles such as nursing assistants.

(Note: Head of the institution and vocational teacher are advised to find details for apprenticeship training regarding relevant industry, duration and stipend on portal of apprenticeship NAPS.)

Kaushal Utsav

Kaushal Utsav is a festival dedicated to celebrating and promoting vocational skills and education. It provides a platform for students, trainees, and professionals to showcase their talents and competencies in various trades and industries. The festival may be initiated from the school, block, district, state and national level. The congregation will include all schools offering vocational courses, local and traditional art and craft-based organisations, traditional folks, etc. These colourful festivals will be organised at all the levels sequentially.

Objectives

The primary objectives of *Kaushal Utsav* are to highlight the importance of vocational education, encourage skill development, and create awareness about career opportunities in skilled trades. It aims to bridge the gap between academic education and practical skills needed in the workforce.

Significance of *Kaushal Utsav*

By organising events and activities that focus on vocational skills, *Kaushal Utsav* raises awareness about the value of vocational education and its role in economic development.

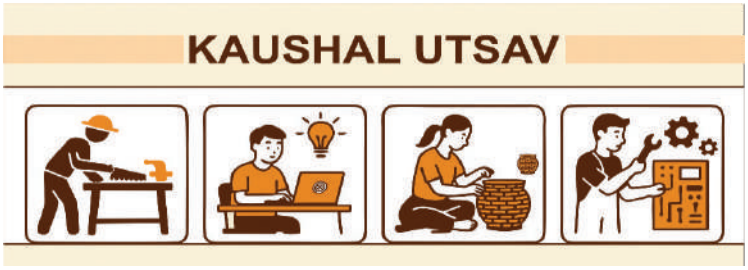

Fig. 9.6: Kaushal Utsav

- **Recognition:** It recognises and rewards the efforts of students, trainers, and institutions involved in vocational education, thereby motivating more individuals to pursue and excel in these fields.
- **Industry Linkages:** The festival fosters connections between educational institutions and industries, ensuring that vocational training is aligned with market needs and standards.

Implementation Strategies

1. Skill competitions, exhibitions, and workshops

- **Skill Competitions:** Participants compete in various skill areas such as carpentry, welding, culinary arts, IT, and more. These competitions not only test their abilities but also promote excellence and innovation.
- **Exhibitions:** Showcases of projects and products created by students and trainees, providing a platform for them to demonstrate their skills and creativity.
- **Workshops:** Interactive sessions where industry experts conduct hands-on training and share insights on the latest trends and technologies in their fields.

2. Engagement with industry experts and professionals

- **Panels and Talks:** Sessions where industry leaders and professionals discuss the future of vocational skills, industry demands, and career opportunities.
- **Networking:** Opportunities for participants to network with potential employers, mentors, and peers, facilitating knowledge exchange and career advancement.

Advantages of *Kaushal Utsav*

The advantages of *Kaushal Utsav* are as follows:

1. Showcasing student talents and skills

- **Recognition:** Students get an opportunity to display their skills to a broader audience, gaining recognition and accolades for their hard work and talent.
- **Exposure:** Participation in *Kaushal Utsav* exposes students to real-world scenarios and industry expectations, preparing them for their professional careers.

2. Encouraging innovation and creativity in vocational education

- **Innovation:** The event encourages participants to think creatively and come up with innovative solutions to problems, fostering a culture of continuous improvement and excellence.
- **Best Practices:** Sharing of innovative practices and success stories inspires other students and institutions to adopt new methods and approaches in vocational education.

Expected outcomes of the OJT

On completion of On-the-job Training, the trainees shall be able to:

1. relate knowledge and understanding acquired in the classroom to the performance of related jobs in their natural setting.
2. demonstrate learning outcomes for on-the-job training as per the content of the vocational course.
3. identify state-of-the-art technology and processes related to the job and demonstrate proficiency in the operation of tools and equipment.
4. acquire insights into the occupational intricacies associated with the performance of various tasks and use effective approaches, techniques and strategies in dealing with them.
5. demonstrate general work habits and traits, such as initiative, dependability, resourcefulness, regularity and such other occupation-specific desirable traits and characteristics.
6. identify strengths and weaknesses in relation to the job readiness and potential for career advancement and work upon them.
7. gain an understanding of specific trade and the various practices and protocols within the chosen industry.

Summary

This chapter emphasises the significance of On-the-job Training (OJT) within vocational education as a key strategy for bridging academic learning and practical workforce requirements.

It explores the historical evolution of OJT from traditional apprenticeships to modern structured programmes, highlighting its role in enhancing employability, practical competencies, and industry linkages. Key implementation strategies, including planning, partnerships with industries, and monitoring, are outlined to ensure effective training outcomes.

The chapter also delves into related methodologies, such as internships and apprenticeship training, discussing their objectives, benefits, and challenges. Internships provide students with practical exposure, skill development, and insights into workplace dynamics, while apprenticeships combine structured on-the-job learning with classroom instruction, governed by frameworks like the Apprentices Act, 1961, and policies such as the National Apprenticeship Promotion Scheme (NAPS).

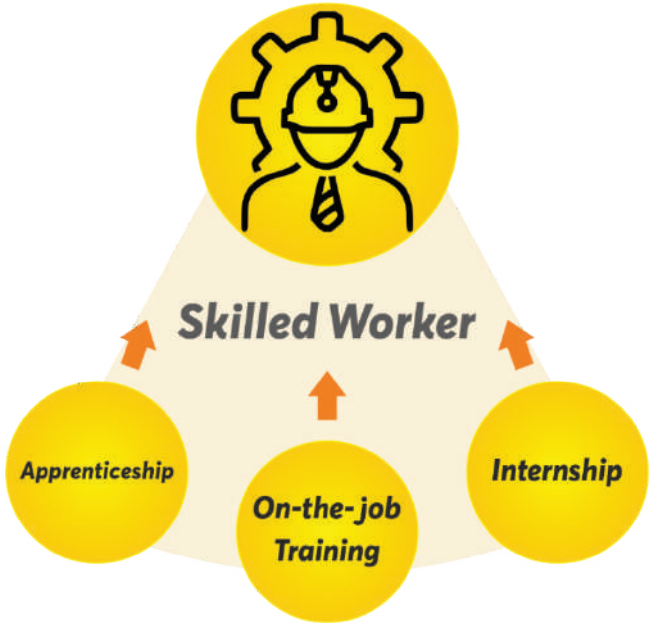

Fig. 9.7: Skilled Worker

Further, the concept of *Kaushal Utsav* is introduced, celebrating vocational skills through competitions, exhibitions, and workshops, fostering innovation, and strengthening connections between educational institutions and industries.

District skill mission has been set up by MSDE under chairmanship of District Magistrate. However, it may be relevant to sync and use support of district/state ecosystem for this.

The chapter underscores the collective impact of vocational training methodologies in equipping learners with skills for a dynamic job market, driving innovation, and fostering economic growth.

CHAPTER
10

Student Support System in Vocational Education

OVERVIEW

This chapter focuses on the significance of student support services required while offering vocational courses aligned to National Skills Qualification Framework (NSQF) in the school system accordingly, a strong support system is needed for students to seek guidance in selection of courses according to their abilities and attitudes. The SWOT analysis strategy may also help students in selecting suitable vocational courses. Further, support will also be needed during on-the-job training (OJT), apprenticeship training and timely placement and follow-up of students. Special efforts will be needed for the development of employability skills through community support, industrial visit, various enterprises and vocational exposure opportunities. In view of this, it is considered important to establish a robust student support system in the school. It is in this context an attempt has been made to focus on entrepreneurship which may also provide support in sharing experiences regarding start-ups.

In accordance with the above provisions featured in *Samagra Shiksha*, Vocational Education have also been highlighted in this chapter. The central aim of establishing student support services is to ensure quality training and placement to build confidence. It provides various career explorations and emphasises the importance of offering students' hands-on experiences through job shadowing which gives an idea of observing a professional in their role to learn about the task and responsibilities involved in that job, internships, and other experiential learning opportunities. Additionally, it stresses the importance of forging partnerships between schools, employers, and community stakeholders to provide students with holistic vocational guidance and support. Ultimately, this chapter underscores the crucial role that vocational career guidance and

counselling play in enabling students to make informed career choices and achieve their professional aspirations.

Objectives

After completing this chapter, you will be able to:

1. understand the significance of student support services in vocational education aligned with NSQF.
2. recognise the role of vocational guidance and counselling in career selection.
3. explore career information services and their dissemination strategies.
4. identify vertical mobility pathways for vocational students

Categories of Student Support System

In the backdrop of above provisions there is a need to provide the following kinds of student support system to vocational subject students:

- Vocational guidance and counselling
- Assessments, explorations and career goal
- Career information service
- Placement of students
- Vertical mobility
- Apprenticeship training
- Entrepreneurship development and start-up support

Vocational guidance and counselling

Vocational guidance for educational, vocational and career counselling are provided by the school. They provide individuals and groups with career, personal, social and educational counselling. The counsellor needs to consider the personal or social aspect of the individual to provide educational and vocational counselling.

Vocational counselling assists individuals in selecting a suitable vocation and preparing for the job and personal growth. It involves providing support and counselling, helping individuals understand their abilities, aptitudes, attitudes, and interests, ultimately leading to a more fulfilling work life.

Counsellor also provides counselling for rehabilitation, and support services in diverse community settings, addressing various issues like mental health disorders, addiction, disability, employment, school problems, and trauma. Their duties vary based on their specialty and the population they serve.

Need of Vocational Guidance and Counselling in Schools

The need for providing vocational guidance and counselling to students in schools are as follows:

- Identify the strengths and limitations of students.
- Develop effective study skills and time-management skills.
- Understand relationship between education and occupational choices.
- Select courses having a range of occupational choices.
- Identify and use various sources of information about employment opportunities.

Role of Vocational Teachers as Guidance Functionaries

Teachers have been in a guiding role for their students. The role of vocational teachers as guidance functionaries are as follows:

- Identify the needs of students and plan guidance programme accordingly.
- Help students recognise their aptitudes and interests for making realistic academic and vocational goals.
- Develop a database with up-to-date information on vertical mobility and employment opportunities.
- Disseminate career information by organising various group activities to assist students in further placement.
- Conduct follow-up survey of vocational pass-outs to know about their present status.

School Vocational Guidance Programme

The school vocational guidance programme plays an important role in assisting students to achieve their optimum personal and professional growth. Following two steps are important in planning and effective implementation of the guidance programme:

1. Establishing Vocational Guidance Committee

Vocational guidance programme is a teamwork. The number of team members may be selected from the following list depending upon the objectives and the number of activities to be organised in a particular year:

- Principal as Committee head
- Vocational Teacher as coordinator
- Counsellor
- *Kaushal Mitra*
- Subject teachers
- Parents
- Students
- Alumni
- NGOs
- Employers
- Community leaders

2. Setting up of School Guidance Resource Centre

A vocational teacher may develop Audio-video materials on career options and various government schemes to make the centre more attractive, informative and useful.

Activities of the Vocational Guidance Resource Centre are as follows:

(a) Collection of career information through various sources.

(b) Compilation of information and filing of career information in files or developing a database.

(c) Periodically updating of information.

(d) Preparation and display of audio-video guidance material (for example, charts, posters, brochure, audio/video recordings, etc.).

(e) Organisation of career talks, visits to industry/workplace, job fairs, campus interview, etc.

Vocational assessments

Vocational assessments are designed to help individuals make informed decisions about their career path. They typically involve a series of tests, interviews, and other assessments that are used

to evaluate a person's interests, skills, and abilities (Van Hai et al., 2022). Here are some of the most common types of vocational assessments:

- **Interest Inventories:** These assessments evaluate a person's interests and preferences for certain types of work. They may include questions about job tasks, work environments, and job characteristics. PSSCIVE has developed a Vocational Interest Inventory for students of Grade 8 which would help the students to opt for vocational courses in Grade 9 according to their interest.
- **Aptitude Tests:** These assessments evaluate a person's ability to learn or perform specific tasks, such as mechanical aptitude or spatial reasoning. PSSCIVE has developed a Skill-based Aptitude Test for students of Grade 10. This may help students and teachers to know whether the aptitude is matching with their chosen vocational courses.
- **Personality Tests:** These assessments evaluate a person's personality traits and characteristics, such as emotional stability, extroversion, and openness to experience.
- **Values Assessments:** These assessments evaluate a person's values and priorities, such as the importance of job security, work-life balance, or personal growth.

By taking the above assessments, students may have better understanding of their strengths, weaknesses, and preferences. This information may then be used to make more informed decisions about their career path.

Career Exploration and Decision Making

Career exploration and decision making are critical aspects of one's professional life which involves discovering and learning about various career options that align with one's interests, values, and skills (Fischer, A. 2022). It is a process of self-discovery, where an individual may explore their career options by researching different career fields, talking to professionals in the industry, and gaining hands-on experience through internships or volunteering. Decision making in career exploration involves carefully evaluating one's options and making a choice that is aligned with their long-term career goals.

Career Information Service

Career information service plays a very important role in providing support to students not only in selection of vocational course but also in future planning. Information about the world of work is required as a variety of new job opportunities are coming up in the employment market about which the job aspirants need to know. Therefore, there is a need for providing information to students at school level about requirements and trends pertaining to the world of work.

Strategies for Dissemination of Career Information

The group activities for dissemination of career information are as follows:

1. **Career Talk:** Career talk gives students the opportunity to clarify their doubts related to the careers through direct interaction with the experts or counsellor. In order to make the career talk effective, aspects need to be concamerated are selection of topic for the career talk, content coverage and organisation of talk, according to the age group, common interest, needs and educational level of the students.
2. **Organisation of Talk:** The date and time of the talk should be informed in advance to the students and the speaker. Duration maybe about 30 minutes followed by 5–10 minutes allocation for students' queries. The speaker may be requested to supplement the talk with some visuals, PowerPoint presentations, slides on projector, reading material, etc., to make the talk interesting and effective.
3. **Group Discussion (GD):** GD helps students to know the world of work through discussion on one or more career options from a particular occupational field. A small group of students may collect information using various sources and make presentation in the class. Experts/professionals may also be invited to discuss the details of a particular career option. The advantage of using GD for dissemination of information is that the group members share information collected by each one of them and therefore gain more insight about a particular occupation.

4. **Industry/Workplace Visits:** Visits to industry and workplace provide students a chance to observe employees in actual work situation and get first-hand information about different aspects of the workplace or industry such as nature of work or activities involved, working conditions (physical/social/psychological), educational qualifications, skill/training and personal qualities required, work culture, organisational hierarchy, facilities, hazards, etc. This creates awareness amongst students about the work environment in which they may enter later on.

Fig. 10.1: Strategies for dissemination of career information

Placement of Students

Collaboration with Industry Partners and Employers

Collaboration with industry partners and employers is essential for the success of schools and placement of their students. Such collaboration offers several benefits, including enhancing the quality and relevance of education, providing hands-on training and practical experiences, and creating networking opportunities for students (Fischer, A. 2022). One of the primary benefits of partnering with industry is to ensure that the educational programmes offered by institutions are aligned with the needs and expectations of the job market. Industry partners may provide valuable insights into the skills, knowledge, and experience required for their industry, and institutions can adapt their programmes accordingly. This ensures that students are well-equipped to enter the workforce and are capable of meeting the demands of the industry. Finally, collaboration with industry partners and employers may help create

networking opportunities for students. This may include mentorship programs, networking events, and job fairs. Such opportunities allow students to meet industry professionals, learn about career paths and potentially secure employment opportunities. Collaboration with industry partners and employers is crucial for educational institutions to provide relevant and practical education to students, prepare them for their future careers, and create networking opportunities.

Interview Preparation

Below are some useful tips for appearing in the interview:

1. **Understanding the company:** Prior to an interview, it is crucial to gather comprehensive information about the company, such as its infrastructure and type of work. This may be achieved by visiting their website, learning about their products and services, reviewing their social media presence, and reading any relevant news articles. Conducting this research will enable you to better grasp the company's objectives, culture, and values, allowing you to tailor your responses accordingly.
2. **Practice your answers:** It is important to practice your responses in order to alleviate nervousness during an interview. One of the main reasons for feeling anxious is the fear of not being able to answer certain questions. By rehearsing your responses to common inquiries such as "Tell me about yourself," "What are your strengths/weaknesses," and "Why do you want to work for us," etc., you can better prepare yourself. Additionally, it is beneficial to anticipate any questions that may be tailored to the company or the specific job role you are applying for.
3. **Enhancing Employability Skills:** Enhance your proficiency in key employability skills such as communication, ICT, sustainability skills, green skills, entrepreneurial abilities, and self-management through preparation and practice.
4. **Mock Interview:** A vocational mock interview should be tailored to the specific job and industry. This involves defining the role, researching the industry, and ideally having an industry professional as the interviewer. The interview should include questions assessing technical skills, problem-solving

(through situational questions), and relevant qualities (through behavioural questions). Simulating a realistic environment and providing constructive feedback on technical knowledge, communication, problem-solving, and professionalism are crucial. This tailored approach makes the mock interview a valuable preparation tool. Teachers may organise a mock Interview session involving industry professionals/employers.

Vertical Mobility

National Skill Qualifications Framework has made the progression pathways transparent so that institutes, students and employers are clear as to what they can or cannot do after pursuing a particular course and address the issues of inequity and disparity in qualifications. Bachelor of Vocational (B.Voc.), which is a 3-year programme, has been designed by the University Grants Commission (UGC) to provide a judicious mix of skills related to a profession and appropriate content of general education, with exit points for Diploma, Advanced Diploma, and Degree.

Skill universities provide vocational education along with practical education in most of the industry-demand areas. The candidates who have acquired Vocational Certificate or Diploma or Advanced Diploma from UGC recognised Community Colleges/ B.Voc. institutions or DDU *Kaushal Kendras* in a specific sector with certified skills on a particular job role will be eligible for admission through lateral entry to next higher level on the same sector.

They also focus on imparting employability skills, entrepreneurship skills and enhancing practical knowledge of the students for exploring some traditional and unconventional courses and careers. Some of the skill universities in India are Shri Vishwakarma Skill University, Haryana; Bhartiya Skill Development University, Jaipur; Delhi Skill and Entrepreneurship University (DSEU); Symbiosis Skills and Professional University, Maharashtra; SCOPE Global Skill University, Bhopal, Madhya Pradesh, etc.

Apprenticeship Training

Apprenticeship is a Skill Training programme in which a person undertakes training in a relevant industry as an apprentice. This ensures competency and skill development in the particular trade. The Ministry of Skill Development and Entrepreneurship (MSDE)

runs the Apprenticeship Programme in India, which is governed by the Apprenticeship Act 1961. A digital platform (https://www.apprenticeship.gov.in/) has been created for implementation of the scheme of apprenticeship training.

Apprenticeship training is available to anyone who has completed 14 years of age (18 years in the case of Hazardous Industries defined under the Apprenticeship Rules), has a minimum of 5th class pass (for Optional Trade), is physically fit for the course, and has the minimum educational qualification prescribed for the trade.

The National Apprenticeship Promotion Scheme (NAPS) is a Government of India programme under Ministry of Skill Development and Entrepreneurship that provides financial assistance to enterprises who offer apprenticeship training.

National Apprenticeship Training Scheme (NATS) is one of the flagship programmes of Government of India under Ministry of Education for skilling Indian youth. It is a one-year programme equipping technically qualified youth with practical knowledge and skills required in their field of work. There are four region-specific Board of Apprenticeship Training (BOAT) in North, South, East and West region located in Kanpur, Chennai, Kolkata and Mumbai respectively. During the period of apprenticeship, the apprentices are paid a stipend amount, 50 per cent 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.

Entrepreneurship and Start-ups

Entrepreneurship and start-ups are increasingly important components of vocational education, empowering individuals with the skills and mindset to create their own businesses. Vocational training provides practical, hands-on skills in specific trades and industries, which form the foundation for entrepreneurial ventures. By integrating entrepreneurship education into vocational programmes, students learn business planning, financial management, marketing, and sales, enabling them to turn their skills into viable businesses. This approach fosters innovation, self-employment, and economic growth, while also addressing the needs of a rapidly changing labour market that demands adaptability and entrepreneurial thinking.

Vocational teachers may seek information about start-ups in different sectors of economy by networking with Entrepreneurship Development Institutions (EDIs), District Trade and Industries Centre (DTIC), Local enterprises, DOITs, NSDC, NCVET and skill hubs.

Vocational students may be encouraged and given opportunity through innovative projects and assignment to enlist or to identify prospects in potential areas for new start-ups. Teachers may undertake various programmes and activities where in local first-generation entrepreneurs and experienced businessmen may be invited for interaction and sharing experiences regarding various business activities. The programmes may include enterprise festival, skill competition and quizzes and on the spot craft and skill debates. And in these programmes, local entrepreneurs, officials from the line department viz Industries, agriculture, horticulture, SC/ST/ OBC minority corporation and financial Institutions may be invited. Another effective strategy to promote entrepreneurial awareness or orientation, weekly or monthly talk sessions may be organised.

Entrepreneurship education is being imparted through various institutes such as Skill Development Centres (SDCs), Industrial Training Institutes, Polytechnics, Jan Shikshan Sansthan, and Pradhan Mantri Kaushal Kendras, across States, targeting both existing and potential entrepreneurs through specific modules.

Following are flagship programmes of Government of India to promote entrepreneurship and innovation:

- Start-up India
- Make in India
- Atal Innovation Mission (AIM)
- Support to Training and Employment Programme for Women (STEP)
- Trade Related Entrepreneurship Assistance and Development (TREAD)
- Stand-Up India Science for Equity Empowerment and Development (SEED).
- Entrepreneurship and skill development programme.

Summary

This chapter emphasises its vital role in addressing the unique needs of students in vocational programmes, particularly under the National Skills Qualification Framework (NSQF). These systems provide career guidance, skill training, apprenticeship opportunities, and placement support, enabling students to make informed career choices. Vocational guidance helps students align their abilities and interests with suitable careers, supported by assessments, career exploration activities, and industry exposure.

Placement support is strengthened through industry partnerships that offer practical training and employment opportunities, while career preparation activities like interview coaching enhance employability. Vertical mobility options, such as diplomas and the Bachelor of Vocation (B.Voc) degree, allow students to advance their careers. Apprenticeships, supported by government initiatives like NAPS and NATS, offer hands-on industry experience, and programmes like Start-up India encourage entrepreneurship.

CHAPTER
11

Awareness and Promotion of Vocational Education

Overview

Vocational education plays a significant role in developing and facilitating the development of a skilled workforce for the economic growth of the country, by equipping youth for the world of work. This will also enable bridging the skill gap. In India, where the need for skilled workers is rapidly growing, it is essential to promote vocational education as a viable and attractive career option. To address this, enhancing awareness and promoting vocational education has become a key focus for both the government and educational institutions. The National Education Policy (NEP) 2020 and the National Curriculum Framework for School Education (NCF-SE) 2023 have therefore prioritised the integration and linking of vocational education in school education. This will enable the preparation of students for diverse career pathways and skilling opportunities.

Successful and effective implementation of Vocational Education necessitates robust awareness and promotional efforts to highlight the benefits, such as its alignment with industry needs, potential for high employability, and opportunities for entrepreneurship. By creating visibility through media, social platforms, community engagement, and highlighting success stories, these efforts can transform vocational education into an attractive career choice for a diverse range of learners to opt for VE from school education to higher educational levels through NSQF aligned vocational courses.

Objectives

After completing this chapter, you will be able to:

1. understand the importance of promoting vocational education in meeting modern workforce demands.
2. increase public awareness through campaigns highlighting vocational education benefits.

3. comprehend the role of key functionaries in promoting vocational education.
4. strengthen industry collaboration for practical training and internships.
5. promote and compile success stories of alumni and industry leaders to inspire participation.
6. leverage digital platforms to enhance accessibility and engagement in vocational education.
7. ensure inclusivity by reaching underprivileged communities with financial aid and localised programmes.

Strategies for enhancing Awareness and Promotion

It is necessary to highlight the importance and advantages of vocational education which will be encouraging for students to explore and enrol in Vocational programmes. It is expected that the following strategies may prove beneficial in popularising VE in education system. The following strategies needs to be implemented effectively:

1. Public Awareness Campaigns

Public awareness campaigns for promoting vocational education should leverage a variety of media outlets and interactive platforms.

- **Media Outreach**: Utilise television, radio, and print media to disseminate information about vocational education programmes, their benefits, and success stories.
- **Social Media Campaigns**: Leverage platforms like Facebook, Instagram, Twitter, YouTube, and LinkedIn to reach a broader audience, share engaging content, and interact with students and parents.
- **Workshops and Seminars:** Organise events at schools, colleges, and community centres to educate stakeholders about vocational education.

2. Collaborations and Partnerships

Collaborations and partnerships play a pivotal role in promoting and enhancing vocational education by leveraging the strengths and resources of various stakeholders.

- **Industry Partnerships:** Educational institutions may collaborate with industries to provide students with

practical training opportunities through internships, OJT, and apprenticeships. This helps students gain real-world experience and enhances their employability, thereby preparing human resources in the industry with desired skills.

- **Educational Institutions:** State and district-level collaboration with educational institutions will enable the effective implementation and integration of VET in schools. This endeavour will include curriculum transaction, use of available resources, teachers' training, organisation of *Kaushal Utsav*, and participation in the hub and spoke model.
- **NGOs and Community:** Work with NGOs, community organisations, and *anganwadis* to reach underprivileged sections, enhance participation in skill development programmes through *Gram Tarang* and *PMKVY* or any other area-specific skill-related projects to promote vocational education as a tool for social inclusivity and development.

3. Success Stories and Role Models

Highlighting success stories and role models is a powerful strategy to promote vocational education. The school system may catalyse this endeavour to build credibility, inspire students, and create a positive perception of vocational training as a pathway to successful careers.

- **Alumni Networks:** Showcase successful alumni who benefited from vocational education and are now established in their careers.
- **Industry Leaders:** Feature testimonials and endorsements from industry leaders and employers who value vocational education.
- **Community Real-life Examples:** Use case studies and real-life examples to demonstrate the practical benefits and impact of vocational education.

4. Digital Platforms and Resources

Digital platforms and resources play a crucial role in making vocational education accessible, engaging, and informative, supporting students in exploring and pursuing career pathways effectively.

- **Interactive Websites:** Develop comprehensive websites with information on vocational courses, career options, enrolment procedures, and success stories.
- **E-learning Modules:** Offer online courses and resources for students to explore vocational subjects and acquire skills.
- **Virtual Tours:** Provide virtual tours of vocational training centres and industries to give students a glimpse of the learning environment and work settings.

5. Guidance and Counselling

Guidance and counselling in schools helps students explore career options, develop skills, and make informed decisions about their future. Career counselling provides students with personalised support and helps them to choose suitable vocational pathways and understand the required skills and training. Vocational counsellors explore and evaluate the students' education, training, work history, interests, skills, and personality traits, including problem-solving abilities, technical expertise, and employability skills. Career guidance thus helps learners to both plan their education and training to become more employable. The career counselling and guidance strategy may include interaction with representatives from industry/workplaces in the production and services sectors.

6. Expert Lecture

Expert lectures from the relevant vocational education area of the course may be organised for the following purposes:

- Guidance and facilitation in choosing future option in training and placement.
- Upgradation of knowledge regarding new skills to bridge the gap viz. technological skills, hard and soft skills and employability skills.
- To get knowledge about the economic sectors with respect to job opportunities and possibilities for collaboration for internship, OJT and AT.

7. Panel Discussion

Organisation of panel discussion involving owners, managers, supervisors and technicians of local industry, business and craftsmen, artist, folklore, etc., in such programmes vocational

students get chance to interact with panelist and gather relevant and useful information about job/vocational opportunities.

8. Branding

Branding is about creating a consistent narrative that builds trust and recognition. Therefore, through the branding process, a distinct identity can be created for vocational education and can significantly influence how students, parents, and educational institutions perceive skill-based learning. A strong brand identity for vocational education can make it aspirational and help integrate it into mainstream education pathways.

Advertising using Celebrity or Brand Ambassador

Fig. 11.1: Skill India Campaign

The involvement of a brand ambassador is pivotal in promoting and raising awareness about vocational education. A renowned personality can attract public attention, build trust, and inspire greater participation among the youth. For example, in 2016, cricket legend Sachin Tendulkar was appointed as the brand ambassador for the 'Skill India' campaign by the Ministry of Skill Development and Entrepreneurship. His association significantly enhanced the visibility and credibility of vocational training programmes across India. (*Source: https://economictimes.indiatimes.com*)

The Bollywood actress and former Miss World Priyanka Chopra has been a vocal advocate for girls' education and empowerment, supporting initiatives that provide vocational training to young women in India. (*Source: theirworld.org*)

- Skill India mission (2015)
- PMKVY
- Apprenticeship training
- Deen Dayal Upadhyay Gramin Kaushal Yojna
- Kaushal Kendra
- Make in India and start-up India

Government Initiatives for the promotion of Vocational Education and Training

Vocational education and training play an important role in addressing skill gaps enhancing employability and driving economy. There are several Government initiatives and policies that promote vocational education in India by focusing on accessibility, quality, and industry alignment. Some of the initiatives include:

1. **Scholarships and Financial Aid:** Programmes like Pradhan Mantri Kaushal Vikas Yojana (PMKVY) offer financial support to students, especially those from economically disadvantaged backgrounds, to pursue vocational courses.
2. **Incentives for Schools:** Under the National Skills Qualifications Framework (NSQF), the government incentivises schools to integrate vocational education into their curricula, supported by schemes like *Samagra Shiksha Abhiyan.*
3. **Regulatory Frameworks:** The National Council for Vocational Education and Training (NCVET) sets quality standards for vocational courses, ensuring they align with industry requirements.
4. **Economic Development and Skills Alignment:** Policies, as outlined in NEP 2020, ensure vocational education is relevant to current industry needs, helping bridge the skills gap and contribute to economic development by preparing a skilled workforce.

Digital Platform

Some outing initiatives to reach every corner of India includes:

1. **PM e-VIDYA:** PM e-VIDYA is an initiative launched by the Government of India and it includes the introduction of a dedicated TV channel for vocational education. These channels aim to provide skill development programmes and courses that can be accessed by students and professionals alike, improving access to vocational education in remote areas. It is designed to help bridge the skill gap by offering high-quality training in a variety of sectors through educational content delivered via television.
2. **E-Pathshala:** E-Pathshala is a digital initiative by the Ministry of Education that provides e-content for students, teachers,

and parents. The portal offers a wide range of learning resources such as e-books, audio, video, and interactive content to support quality education.

3. **NISHTHA:** National Initiative for School Heads' and Teachers' Holistic Advancement (NISHTHA) is a teacher training programme aimed at improving the quality of education through capacity building of teachers. It uses digital platforms to provide online training modules for teachers across India.
4. **MOOCs on SWAYAM:** Study Webs of Active-Learning for Young Aspiring Minds (SWAYAM) offers Massive Open Online Courses (MOOCs) to provide quality education to all students across India. These courses are designed to meet the educational needs of learners from various disciplines, including vocational education.
5. **SWAYAM PRABHA:** SWAYAM PRABHA is an initiative that offers 34 high-quality educational TV channels to deliver online courses and educational content. It helps bridge the digital division, especially in rural areas, by providing free access to learning materials.
6. **Skill India Digital Hub (SIDH):** The Skill India Digital Hub aims to provide digital platforms for skill development, connecting vocational training institutions, industries, and youth. It supports skill development initiatives by facilitating access to learning resources and enhancing online learning experiences.
7. **Skills Strengthening for Industrial Value Enhancement (STRIVE):** STRIVE is a World Bank-funded initiative that focuses on strengthening the vocational education and training system. It provides digital tools to enhance the employability of youth by aligning training programmes with industry needs and improving the quality of training.
8. **Prime Minister's Internship Scheme 2024:** The Prime Minister's Internship Scheme 2024 provides vocational training and real-world industry experience by students. Through this digital initiative, students can access various online internships with industries, enhancing their skills and employability.

9. **Skill Hubs Initiative (SHI):** The Skill Hubs Initiative aims to establish physical and virtual Skill Hubs across India, where learners can access digital resources and receive skill-based training. It focuses on building a strong connection between skill development and industry demand through online platforms.

Fig. 11.2: Digital Skill India Platforms

Role of Key Functionaries in Awareness and Promotion

1. State and Central Ministries
2. Accreditation bodies, NGOs, community leaders
3. Educational Administrators
   (i) Educational administrators play a pivotal role in supervising and managing educational institutions in varied ways.
   (ii) Ensuring the effective implementation of policies.
   (iii) Administrators are responsible for integrating vocational courses into the curriculum, aligning them with academic standards and industry requirements.
   (iv) Allocate resources such as funding, facilities, and personnel to support vocational programmes and ensure their sustainability.

(v) Collaborate with teachers, industry partners, and government agencies to create a conducive environment for vocational education, fostering student engagement and career readiness.

4. School Principals/Heads and Teachers
   (i) Oversee integration of vocational courses into curriculum.
   (ii) Organise *Kaushal Mela* and industry visits.
   (iii) Deliver vocational education focusing on practical skills and industry relevance.
   (iv) Cultivate an environment that supports vocational learning.
5. Industry Partners
   (i) Bridging the gap between classroom learning and real-world application.
   (ii) Collaborating with educational institutions to develop curriculum.
   (iii) Offering internship and apprenticeship opportunities.
   (iv) Participating in career guidance activities.
   (v) Contributing to a skilled workforce and fostering innovation.

Key functionaries can create a four-page report/prospects to showcase enrolments innovative initiatives, placement and success stories to advocate vocational education particularly in rural areas in dispelling misconception and encourage students to pursue skill-based careers.

Summary

Vocational education plays a crucial role in equipping youth with industry-relevant skills, bridging the skill gap, and fostering economic growth. In India, where the demand for a skilled workforce is rising, promoting vocational education as a viable career option is essential. The National Education Policy (NEP) 2020 and the National Curriculum Framework for School Education (NCF-SE) 2023 emphasis integrating vocational education into mainstream schooling. Awareness campaigns, industry collaborations, and digital platforms enhance visibility and accessibility, encouraging enrolment. Success stories and role models inspire students, while

career counselling and expert lectures provide guidance. Government initiatives like PMKVY, NSQF, and Skill India Digital Hub support vocational training through financial aid, digital learning, and industry alignment. Branding vocational education helps eliminate stigma, increasing student participation and industry engagement. The collective efforts of educators, administrators, and policymakers ensure the effective promotion and implementation of vocational education, preparing students for diverse career pathways and entrepreneurial opportunities.

CHAPTER 12

Community and Industry Participation in Vocational Education

Overview

In today's rapidly evolving job market, the demand for specialised skills and practical experience has never been more pronounced. Vocational skills development, which focuses on equipping individuals with the hands-on expertise needed for specific trades or professions, plays a pivotal role in addressing these demands. Since vocational education is now integrated into school education, the education system and employment go hand-in-hand in the skill development endeavour. To bridge the gap between education and employment, effective collaboration between community organisations and industry sectors is essential. Communities contribute by providing accessible training resources, supporting local talent, and tailoring programmes to meet regional needs. Concurrently, industry involvement ensures that vocational education remains relevant and aligned with current technological advancements and market requirements. The historical evolution of vocational education—from informal apprenticeships to formalised educational programmes—highlights its growing significance in preparing a skilled workforce. As industries evolve, vocational training adapts, incorporating new technologies and methodologies to stay relevant. This chapter aims to explore the dynamic interaction between community and industry in vocational skills development, examining how these collaborations enhance training programmes, support economic growth, and create a well-prepared workforce.

Objectives

After the completion of this chapter, you will be able to:

1. describe the importance of collaboration between community and industry in vocational education.

2. identify strategies for strengthening partnerships between educational institutions, communities, and industries.
3. explain the advantages of community and industry involvement in creating a skilled and job-ready workforce.

Need for Community and Industry Participation

The importance of vocational skills in the job market cannot be overlooked in filling the gap between theoretical knowledge and practical application. Thus, targeted vocational training, aligned with industry needs, enhances employability, fosters economic growth, and ensures the development of a skilled workforce.

Present-day Vocational Education and Training (VET) practices have adapted to the needs of a rapidly changing job market, emphasising flexibility, technology integration, and lifelong learning. Modern VET programmes often combine traditional hands-on training with digital learning platforms, enabling students to acquire practical skills along with theoretical knowledge. There is a growing emphasis on partnerships between educational institutions, industries, and government bodies to ensure that Vocational Education and Training Programmes are aligned with current industry standards and future job market trends. It is in this context that on-the-job training (OJT), apprenticeships, and internships have become integral components of VET, providing real-world experience and facilitating smoother transitions into the workforce. Additionally, there is a focus on up-skilling and re-skilling existing workers to keep pace with technological advancements and evolving industry demands. These contemporary practices aim to create a skilled, adaptable, and competitive workforce capable of thriving in various sectors of the modern economy.

Role of Community in VET

Community engagement plays a crucial role in VET by fostering local support, enhancing programme relevance, and ensuring broader participation in educational initiatives. Local communities often provide invaluable resources, including expert talks, seminars, workshops, facilities, and networks, which enrich the learning experience and expose students to real-world applications of their skills. Moreover, community involvement helps modify vocational programmes to meet specific regional needs and industry demands, thereby increasing the employability of vocational graduates

within their own communities. By nurturing partnerships between educational institutions, businesses, and community organisations, vocational training becomes more responsive to local economic conditions and cultural contexts. This collaboration not only strengthens social cohesion but also empowers individuals with the practical skills and confidence needed to contribute meaningfully to their local economies and societies.

Fig. 12.1: Community Engagement in Vocational Education Training

Aspects of Community Participation in VET

Community participation in VET enhances both individual learning experiences and broader societal outcomes. Engaging with local businesses and artisans, skill training and exposure to real job situations may be provided to students in relevant vocational courses in following ways:

(a.) Providing students with practical, classroom instruction and hands-on learning opportunities.

(b.) Direct exposure to the world of work.

(c.) Developing employability skills such as ICT, self-Management, communication and green skills and entrepreneurship skills.

(d.) Supporting localised skill development tailored to regional economic needs

(e.) Ensuring vocational programmes remain relevant and responsive to local job markets.

(f.) Fostering integration by connecting students with mentors, employers, and locally available experts to provide guidance and support.

(g.) Strengthening community ties, promoting economic stability and civic engagement.

(h.) Extending beyond individual skill acquisition to include sustainable economic development and the building resilient, interconnected society.

(i.) Local available community resources, infrastructure, and training opportunities may also be utilised by the schools.

(j.) Under Corporate Social Responsibility (CSR), financial assistance is provided for establishing vocational labs and workshops, including raw materials and other recurring expenses.

Industry Support in Vocational Education Programmes in Schools

Support of Industries in vocational curriculum transaction to facilitate theory and practical understanding of the vocational students and in turn industry is benefited to develop human resource with desirable skills relevant to their industry. Schools offering vocational courses may identify relevant industries for collaboration to seek support in desirable skill development. Looking to the importance of Industry participation, the following dimensions may be advantageous for VET programme.

- Involvement of Industries in designing and developing relevant vocational courses.
- Organising practical sessions within the industry to facilitate the skill development,
- On-the-job Training(OJT) and Internships,
- Apprenticeship Training (AT).
- Student Placements.
- Certifications.

The above dimensions are desirable to ensure that students are equipped with the latest knowledge and competencies required by employers. These types of industry involvement are making vocational training a vital component of career preparation in today's competitive world of work. The flow chart below highlights on the support that stakeholders receive through industry association.

Fig 12.2: Industry association with different stakeholders and associated support under vocationalisation in schools

Strategies for Collaboration with Community and Industry

1. **Identify and Establish Linkages**
   Establish strong connections with industries by including their representatives in school activities. Involve Sector Skill Councils (SSCs) to enhance their role in setting up workshops, labs, guest lectures, and trainer training.
2. **Student Visits to Industries**
   Organise regular industry visits for students to provide them with exposure to real-world work environments and practical industry processes.
3. **Support from Industry Professionals**
   Engage industry professionals to assist in conducting practical sessions in schools or industries, ensuring students gain hands-on technical managerial expertise.
4. **Assessment and Joint Certification**
   Collaborate with industries for joint evaluation of students' skills and provide industry-recognised certifications, boosting their employability.

By implementing these strategies, collaborative partnerships can effectively bridge the gap between education and industry, producing graduates who are well-prepared to meet the demands of the modern workforce.

Advantages of Community and Industry Participation in Vocational Education

- **Improved Employability:** Industry involvement ensures that training is aligned with current job market demands, equipping students with relevant skills that employers seek. Community partnerships further provide access to local job markets and placement opportunities.
- **Increased Relevance of Training:** Collaboration with industry professionals keeps curricula up-to-date with evolving technologies and industry practices, ensuring that students learn skills that are directly applicable in the workplace. Community feedback can also ensure that training addresses local needs and priorities.
- **Enhanced Skill Proficiency:** Hands-on training and real-world experiences provided through industry partnerships allow students to develop practical skills and technical

proficiency. Community involvement can offer access to real-world projects and mentorship from experienced professionals.

- **Better Career Advancement Opportunities:** Industry connections may lead to Industry visit, Expert lecture, On -the-Job training or internships, apprenticeships, and job placements, providing a direct pathway to employment and career growth. Community networks can also provide access to local businesses and entrepreneurial opportunities.
- **Acquaintance with Technological Exposure:** Industry partners often provide access to state-of-the-art equipment, software, and updated technologies such as, AR, VR, AI used in respective fields, giving students hands-on experience with the latest tools.
- **Motivation and Engagement:** Real-world projects, mentorship from industry professionals, and direct connections to the job market motivate students and enhance engagement in the learning processes. Community involvement futher fosters a sense of belonging.
- **Improvement in quality of Vocational Education Program:** Feedback obtained from industry performs in assessing programme effectiveness and impact helps in improve the quality of implementation strategies in vocational education and training programmes.
- **Accessibility to Emerging Technologies:** Online platforms, VR and AR, and other technologies make vocational training more accessible to a wider group of learners.

Summary

Community and Industry Participation in Vocational Education emphasises the critical role of collaboration between community organisations and industry sectors in bridging the gap between education and employment. As vocational education evolves to address the demands of the modern workforce, partnerships with communities provide resources, localised training, and support for regional economic needs. Simultaneously, industry participation ensures that vocational training remains aligned with technological advancements and market requirements. Strategies such as industry visits, mentorship, on-the-job training, and joint certifications enhance practical learning and skill acquisition. Community

involvement fosters social cohesion and equips individuals with employability skills, while industry collaboration ensures updated curricula and career opportunities. This dynamic partnership enhances the relevance of the vocational educations quality, and accessibility, promoting economic growth and a skilled, adaptable workforce. By integrating emerging technologies like VR and AI, vocational programmes prepare students for a competitive global job market, driving sustainable economic development and innovation.

CHAPTER
13

Assessment and Evaluation in Vocational Education

OVERVIEW

Assessment and evaluation are fundamental components of vocational education, ensuring students acquire the necessary skills and competencies for the job tasks. Assessment measures an individual's learning progress with respect to practical skills and knowledge acquisition, while evaluation of students pursuing vocational courses is a process that measures a student's knowledge and skills to determine whether learning outcome has been achieved to match the acquisition of desired skills. Together, they ensure that vocational education remains effective, relevant, and outcome-driven.

Various forms of assessment, such as formative, summative, workplace-based, and competency-based evaluation, help educators track student progress and readiness for employment. Additionally, assessments methods, including employer feedback, accreditation reviews, and student performance analysis, enhance the quality of vocational training.

This chapter explores the role, types, and methods of assessment and evaluation, highlighting their significance in shaping skilled professionals. It also examines structured assessment frameworks, including the Kisan Drone Operator course, demonstrating how competency-based learning and certification processes ensure employability and industry relevance. Through effective assessment and evaluation, vocational education can maintain high standards, improve teaching methods, and bridge the gap between education and employment.

Objectives

After completing this chapter, you will be able to:

1. describe the role of assessment and evaluation in measuring progress and competencies in vocational education.
2. explore various types of assessment and methods of evaluation.

Concept of Assessment and Evaluation

Assessment and evaluation play a crucial role in vocational education by ensuring that students acquire the necessary skills, knowledge, and competencies required for the workforce. They help to measure learning outcomes and enhance employability. Assessment ensures students gain the right skills, while evaluation ensures vocational programmes remain effective and relevant. Together assessment and evaluation help to maintain high standards in vocational education, producing skilled professionals to meet industry demands.

Assessment: It is the process of measuring a learner's performance, skills, and knowledge through various methods.

1. **Role of Assessment:**
   (a.) **Measures Competency:** Ensures students have mastered both theoretical and practical skills.
   (b.) **Identifies Strengths & Weaknesses:** Helps students understand their progress and areas needing improvement.
   (c.) **Ensures Industry Standards:** Aligns student skills with workplace expectations.
   (d.) **Promotes Continuous Learning:** Encourages learners to refine their abilities and stay updated with industry trends.
   (e.) **Provides Certification:** Assessment results are often required for vocational certification and licensing.

2. **Types of Assessments:**
   (a.) **Formative Assessment (ongoing, during learning):** Practical demonstrations, quizzes, and teacher feedback.
   (b.) **Summative Assessment (End of a course/programme):** Final exams, project work, and practical skill tests.
   (c.) **Workplace-based Assessment:** Evaluates skills in real job settings through internships, apprenticeships, or job simulations.

(d.) **Diagnostic Assessment:** This is performed before the learning begins to understand the learner's existing skills, knowledge, and areas that need improvement. It helps in designing tailored learning paths.

(e.) **Portfolio Assessment:** In vocational education, learners might be required to compile a portfolio showcasing their work, projects, and practical skills. It allows assessors to review the learner's progress over time and provides a comprehensive overview of their abilities.

(f.) **Peer and Self-assessment:** Encouraging learners to assess their own work or that of their peers fosters critical thinking, self-reflection, and encourages ownership of the learning process.

Evaluation

Evaluation is the systematic process of reviewing and improving vocational education programme.

1. **Roles of Evaluation:**

(a.) **Measures Effectiveness of the Programmes:** Ensures that the curriculum meets industry and employer needs.

(b.) **Improves Teaching Methods:** Helps instructors adjust their teaching strategies to enhance student learning.

(c.) **Enhances Employability:** Ensures that students achieve the required job standards, increasing their chances of getting employment.

(d.) **Supports Policy and Decision-making:** Provides data to educational institutions and policymakers for programme improvement.

2. **Methods of Evaluation:**

Student Performance Analysis: Evalution of assessment can be carried out through multiple approaches:

(a.) **Practical Assessments:** Since vocational education focuses on skill development, practical evaluations are essential. These can include hands-on tasks, such as operating machinery, conducting experiments, or performing trade-related activities to assess proficiency.

(b.) **Competency-based Evaluation:** Competency-based evaluation (CBE) is a method of assessment that focuses on evaluating an individual's demonstrated skills, knowledge,

and abilities against pre-defined standards or competencies required for a specific job, task, or role. It focuses on assessing the practical application of skills, such as the ability to perform a task efficiently and correctly. It is suggested that evaluation may also be undertaken at different stages of curriculum transaction such as projects, lab practices, Internship, On-the-job training and final practical examination.

(c.) **Project-based Evaluation:** Vocational learners often work on real-life projects related to their trade, where their ability to complete tasks and achieve results is evaluated based on practical outcomes.

(d.) **Written Tests and Examinations:** In some cases, written assessments are necessary to evaluate theoretical knowledge related to the vocational subject, such as technical knowledge, safety regulations, and industry standards.

3. **Employer Feedback:** Collected Insights are collected from industry stakeholders on learners' preparedness for employment.
4. **Programme Accreditation Reviews:** Ensuring vocational institutions meet national and international training standards.

Exemplar

The PSSCIVE has prescribed the process for assessment and evaluation of vocational courses with reference to job roles and vocational skills. An exemplar job role, *Kisan* Drone Operator for grades 11th and 12th has been developed by PSSCIVE consists of the total number of hours allotted for the skill and knowledge, with maximum marks. The scheme of units and assessment comprises all components and parameters of assessment and evaluation, and these are described in the following section.

Scheme of Units and Assessment

This course of "*Kisan* Drone Operator" is a planned sequence of instructions consisting of units meant for developing employability and vocational competencies of students of Grades 11 and 12 who opt for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for Grade 11 is as follows:

GRADE 11			
	Units	**No. of Hours for Theory and Practical = 300**	**Max. Marks for Theory and Practical = 100**
Part A	**Employability Skills**		
1.	Unit 1: Communication Skills – III	25	
2.	Unit 2: Self-management Skills – III	25	
3.	Unit 3: Information and Communication Technology Skills – III	20	
4.	Unit 4: Entrepreneurial Skills – III	25	
5.	Unit 5: Green Skills – III	15	
	Total	**110**	
Part B	**Vocational Skills**		
6.	Unit 1: Introduction to Agriculture Practices	30	
7.	Unit 2: Introduction to Drones	50	
8.	Unit 3: Drone Operation	50	
9.	Unit 4: Flight Simulator Training	35	
	Total	**165**	
Part C	**Assessment and Evaluation**		
10.	Written Test	3	40 marks
11.	Practical Exam	6	15 marks
12.	Project Work (including Field Visits/On-the-Job Training)	10	25 marks
13.	Student Portfolio	5	10 marks
14.	Viva-Voce	1	10 marks
	Total	**25**	**100**
	Grand Total	**300**	**100**

The unit-wise distribution of hours and marks for Grade 12 is as follows:

GRADE 12			
	Units	**No. of Hours for Theory and Practical = 300**	**Max. Marks for Theory and Practical = 100**
Part A	**Employability Skills**		
1.	Unit 1: Communication Skills – IV	25	
2.	Unit 2: Self-management Skills – IV	25	
3.	Unit 1: Information and Communication Technology Skills – IV	20	
4.	Unit 4: Entrepreneurial Skills – IV	25	
5.	Unit 5: Green Skills – IV	15	
	Total	**110**	
Part B	**Vocational Skills**		
6.	Unit 1: Drones in Agriculture	30	
7.	Unit 2: Operating Procedures for Use of Drone in Agriculture	70	
8.	Unit 3: Rules and Regulations for Drone Operation	45	
9.	Unit 4: Entrepreneurship Opportunities in Drone Technology	20	
	Total	**165**	
Part C	**Practical Work**		
	Written Test	3	40 marks
	Practical Exam	6	15 marks
	Project Work (including Field Visits/ On-the-job Training)	10	25 marks
	Student Portfolio	5	10 marks
	Viva Voce	1	10 marks
	Total	**25**	**100**
	Grand Total	**300**	**100**

Assessment and Evaluation:

1.	Written Test	40 marks
2.	Practical Exam	15 marks
3.	Project Work (including Field Visits/On-the-job Training)	25 marks
4.	Student Portfolio	10 marks
5.	Viva Voce	10 marks
	Total	**100 marks**

Knowledge Assessment

The assessment tools shall contain components for testing the knowledge and application of knowledge. The knowledge test can be objective paper-based test or short structured questions, based on the content of the curriculum.

- **Written Test** allows candidates to demonstrate that they have the knowledge and understanding of a given topic.

Blueprint for Question Type and Marks Allocation by Difficulty Level (40 marks)

Question Type	Number of Questions	Marks per Question	Total Marks	Difficulty Level
Multiple Choice Questions (MCQs)	6	1 mark each	6 marks	Easy
Short Answer Questions (SAQs)	5	2 marks each	10 marks	Easy
Short Answer Questions (SAQs)	4	4 marks each	16 marks	Moderate
Long Answer Questions (LAQs)	2	4 marks	8 marks	Difficult

Skill Assessment (Practical)

Assessment of skills by the students should be done by the assessors and examiners on the basis of practical demonstration of skills by the candidate, using a "competency checklist". The student has to demonstrate competency against the performance criteria. The assessors assessing the skills of the students should possess a current experience in the industry and should have undergone an effective training in assessment principles and practices.

- Practical examination allows candidates to demonstrate the knowledge and understanding of performing a task. This will include the performance of tasks and viva voce. Teachers or Examiners will clearly define the tasks that candidates are required to perform during the practical examination. These tasks should align with the learning objectives of the course. Students are to be evaluated based on their skills, technique, accuracy, and overall performance.

Checklist for assessment and evaluation of practical

Each criteria is evaluated on a scale of 0–5, with specific descriptions for each mark range:

S. No.	Criterion	Marks 0-1	Marks 2-3	Marks 4-5	Max Marks
1.	**Pre-flight Checks and Drills**	Incomplete or inaccurate pre-flight checks and drills.	Partially correct checks and drills with minor issues.	Thorough and accurate checks and drills.	5
2.	**Execution of Maneuvers**	Significant difficulty in executing maneuvers.	Successful execution with some minor issues.	Smooth and precise execution of maneuvers.	5
3.	**Safety Protocols**	Poor understanding or implementation of safety protocols.	Adequate implementation with some minor lapses.	Thorough and consistent implementation of safety protocols.	5
Total Marks:					**15**

Project Work (25 marks)

Projects should simulate real-world scenarios, allowing students to solve problems or create something tangible using the skills and knowledge they have acquired. Projects should align with the curriculum's learning objectives, ensuring that students are applying relevant concepts and skills. Clear and detailed guidelines, including project objectives, evaluation criteria, and deadlines should be provided by the teachers and assessors.

- **Field visits:** There can be followed by the submission of reports by the students, based on the checklist. Teachers will develop a detailed checklist of items or questions students need to address during the visit. This could include specific observations, data collection, interviews, etc. Teachers will assess the reports based on the completeness of checklist items, depth of observations, analysis, and overall presentation. After the visit, teachers will also encourage students to reflect on their field experience, for example, what students learned, how will they apply the knowledge gained through the field visit.
- **On-the-job Training:** The employability skills curriculum includes communication skills, self-management skills, information, and communication technology skills, entrepreneurship skills, and green skills. Field visits of students are organised in industry and actual work situations to enable them to understand and appreciate the real-time work requirements and make choices accordingly.

A component of internship or OJT is an integral part of the curriculum transaction of vocational subjects in schools. Training teaches the learner to do specific tasks, such as riding a bicycle or running a machine. Trainees acquire insight into the occupational intricacies associated with the performance of the various tasks and use effective approaches, techniques, and strategies in dealing with them.

Assessment components for (OJT)

S. No.	Component	Marks
1	Planning	5
2	Recording and Data Collection	5
3	Data Analysis	4
4	Reporting	4
5	Presentation	7
	Total	**25**

Student Portfolio (10 marks)

The student portfolios can include records, plans, models, notes, written work, audio, and video programmes, photographs, and other artefacts. Students decide what to include in their portfolios and can reflect on what they have learnt. Teachers can assess not only the components of portfolios but also the processes that students have followed in carrying out these activities while preparing a portfolio for a course. The example criteria of the same is given below:

Criteria	Description	Marks
Content Relevance	2 Marks: Highly relevant, clear understanding, all work reflects objectives. 1 Mark: Mostly relevant, some areas lack focus. 0 Marks: Largely irrelevant, significant portions do not address objectives.	0 / 1 / 2
Creativity and Originality	2 Marks: High creativity, unique perspectives, innovative ideas. 1 Mark: Some creativity, conventional ideas. 0 Marks: Lacks creativity, overly conventional or derivative.	0 / 1 / 2

Technical Quality and Craftsmanship	2 Marks: Exceptional technical quality, attention to detail, high craftsmanship. 1 Mark: Adequate quality, minor flaws or inconsistencies. 0 Marks: Poor quality, significant flaws, lack of detail.	0 / 1 / 2
Reflective Analysis	2 Marks: Thorough analysis, deep insights, considers challenges and improvements. 1 Mark: Some analysis, lacks depth. 0 Marks: Lacks analysis, minimal reflection.	0 / 1 / 2
Organization and Presentation	2 Marks: Well-organised, logical flow, professional appearance. 1 Mark: Adequately organised, minor issues. 0 Marks: Poorly organised, unclear labelling, unprofessional.	0 / 1 / 2
Total marks: 10		

Viva-voce (10 marks)

Viva-voce allows candidates to demonstrate communication skills and content knowledge. Audio or video recording can be done at the time of viva-voce.

Viva-Voce Assessment Rubric

Criteria	Description	Marks
Understanding of Subject	2 Marks: Demonstrates a thorough understanding of the subject, able to explain concepts clearly and accurately. 1 Mark: Shows a general understanding, with minor gaps. 0 Marks: Lacks understanding, major gaps or misconceptions.	0 / 1 / 2
Clarity of Communication	2 Marks: Communicates ideas clearly and effectively, with well-structured responses. 1 Mark: Communicates adequately, though some responses may be unclear. 0 Marks: Poor communication, responses are confusing or unclear.	0 / 1 / 2
Confidence and Composure	2 Marks: Displays confidence and remains composed throughout, even when challenged. 1 Mark: Generally confident, but may falter under pressure. 0 Marks: Lacks confidence, becomes easily confused.	0 / 1 / 2

Critical Thinking and Analysis	2 Marks: Exhibits strong critical thinking, able to analyse and evaluate information effectively. 1 Mark: Shows some critical thinking, but analysis may be superficial. 0 Marks: Lacks critical thinking, unable to analyse or evaluate effectively.	0 / 1 / 2
Response to Questions	2 Marks: Provides accurate and relevant answers to all questions, demonstrating depth of knowledge. 1 Mark: Answers most questions adequately, with some lacking depth. 0 Marks: Fails to provide accurate or relevant answers, demonstrates a lack of knowledge.	0 / 1 / 2
Total marks 10		

The external examiner may be a teacher nominated by the Head of the school, who could be from the faculty but not teaching the subject in the section/class. For example, a teacher may be deputed as an external examiner for Grade 12 Drone Operation Projects.

Certification

- **Certifications:** Successful completion of assessments and evaluations leads to certification of competencies acquired in a particular trade or field.
- **Accreditation:** Institutions providing vocational education must be accredited by relevant bodies such as CBSE, NSDC, and UGC to ensure that the assessments and qualifications awarded meet industry standards.

13.4 Summary

The chapter discusses the significance of assessment and evaluation in vocational education, highlighting their role in measuring student progress, ensuring competency, and maintaining industry standards. Assessment involves various methods, including formative, summative, workplace-based, diagnostic, portfolio, and peer assessments, each designed to evaluate learners' theoretical and practical skills.

Evaluation, on the other hand, systematically reviews vocational programmes to improve teaching methods, enhance employability, and align curricula with industry requirements. The effectiveness of vocational education and training is directly related to student performance analysis, competency-based evaluation, project-based assessments, employer feedback, and programme accreditation.

The PSSCIVE has prescribed methods of assessment and evaluation in vocational courses which demonstrate the structured approach for assessment through a planned course for "*Kisan* Drone Operator". In this document details of the distribution of hours, knowledge tests, practical skill evaluations, and project work are given for facilitating assessment of each of the domains. The chapter also emphasises the importance of OJT training, student portfolios, and viva-voce as essential components of competency certification. Accreditation from recognised institutions ensures vocational qualifications to meet industry standards, enabling student's placements with the desired employable skills.

CHAPTER
14

Significance of Teacher's Training in VET

Overview

Vocational Education and Training (VET) is pivotal in equipping individuals with practical skills and knowledge tailored to specific industries, thereby enhancing employability and contributing to economic development. In India, the National Education Policy (NEP) 2020 underscores the integration of vocational education into mainstream curricula, aiming to provide students with holistic and multidisciplinary learning experiences. A cornerstone of effective VET is the quality of teacher training, which ensures that educators are adept at delivering industry-relevant skills and knowledge to learners. The NEP 2020 emphasises the necessity for passionate, motivated, highly qualified, and professionally trained teachers at all levels of education.

Objectives

After the completion of this chapter, you will be able to:

1. emphasise the significance of vocational education and Training (VET) in equipping individuals with industry-specific skills, as highlighted in the National Education Policy (NEP) 2020.
2. highlight the necessity for well-trained vocational educators to ensure effective skill delivery, enhance employability, and align education with industry demands.
3. outline the roles, required competencies, training frameworks, and professional development strategies essential for vocational educators to improve the quality of vocational education.

Significance of Teacher Training

Teacher training in vocational education is essential for equipping educators with the skills and knowledge required to deliver industry-relevant training. Since vocational training often involves working with machinery, tools, and potentially hazardous materials, teachers must be well-versed in safety protocols to protect students. Therefore, teachers must stay updated on the latest industry practices to prepare students for the workforce. Additionally, many vocational programmes require teachers to hold certifications to meet industry and accreditation standards, making continuous professional development crucial.

The NEP 2020 also stated that, apart from regular teachers who are trained in imparting vocational education, a large number of trainers will need to be drawn from different sections of society for their expertise in different vocations. Such experts may be engaged as guest faculty, either to impart knowledge of both theory and practice in their respective vocations or provide only practical training, as the case may be. Since subject experts do not necessarily possess vocational pedagogical skills, this envisages the need for well-trained vocational teachers in subject-specific areas. A well-trained teacher enhance student outcomes, improve employability rates, and contributes to building a skilled workforce aligned with industry demands. To strengthen vocational education systems and make teachers more effective in preparing students for diverse career opportunities, vocational educators must possess specific competencies.

Desired Competencies among Vocational Educators

In addition to occupation-specific competencies, vocational educators also require a set of occupation-neutral general competencies to discharge their multifaceted duties and responsibilities. These include competencies in areas, such as communication, evaluation foundations and pedagogy of vocational education, guidance and counselling, classroom and shop floor instruction, learning strategies. All these general competencies for vocational educators have been identified by PSSCIVE, Bhopal, with the support of stakeholders during various academic programmes conducted over the past two decades. The broad catagories of general competencies required by vocational educator are illustrated in the figure:

Fig 14.1 Competencies of Vocational Educators

The above-mentioned competencies help them to understand the various roles a vocational educator fulfils and the skill sets they are require to possess to become a successful trainer.

Roles and Functions of Vocational Educators

The roles and functions of vocational educators in this new scheme of vocationalisation of school education have undergone significant transformation. This has been driven by:

1. Compulsions of advanced technology.
2. Changes in the pattern and competencies of the workforce.
3. Emphasis on self-employment and reformulations in education in general and vocational education in particular.

Vocational educators today cannot remain merely information dispensers. As knowledge specialists in their field, they not only occupy a pivotal position in the whole implementation process but also play varied roles from the inception of the course to the certification of the learners.

A practitioner in their own vocation, a curriculum and instructional material developer, an evaluator of students' performance and progress, a guidance counsellor to their students, a liaison officer between the school and the community, a facilitator of learning,

and a resource manager, a coordinator, and a record keeper. As is obvious, the role expectations of a vocational educator are indeed numerous. This calls for efforts on various fronts to enhance the competencies of the vocational educator. While knowledge and previous vocational experience may be ensured through entry qualifications, the others will have to be developed through regular orientation, training programmes, and refresher courses.

Professional Deployment of Vocational Educators

Vocational education, being of recent origin, has many issues that will have to be resolved at various levels by educationists, teacher educators, and implementers. These issues mainly relate to the content of pedagogical knowledge, teachers' qualifications and deployment, the transaction of a learning outcome-based curriculum, imparting employability skills, and teaching assessment and evaluation methods. The issues are briefly depicted in the figure below:

Fig 14.2: Professional development of vocational educators

The scheme of vocationalisation of school education stated that to assure the quality of the Vocational Teachers or Trainers they should possess:

1. Content knowledge,
2. Pedagogical knowledge and
3. Pedagogical content knowledge.

They should continuously strive to pursue excellence through better performance and professional development. It is also mentioned in the scheme that the training programme may be reoriented to develop professional Vocational Teachers or Trainers as per the NOSs.

The induction training programme should be conducted before the commencement of the course in the school so that trainers are familiar with the pedagogy, school environment, and essential tenets of the programme beforehand.

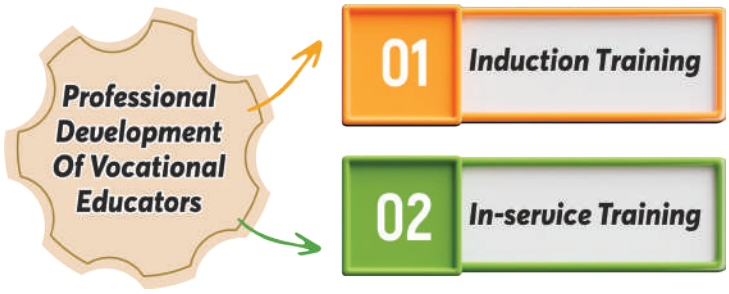

Fig. 14.3: Professional Development of Vocational Educators

The in-service training should be provided through special training programmes on communication skills, vocational pedagogy, the use of advanced technology including ICT skills, vocational guidance and counselling, and training on utilising e-learning materials, instructional video-films, and interactive computer-aided programmes for supplementing teaching and providing a wide variety of learning experiences, etc. The vocational teachers and trainers have long been considered "dual professionals" in that they need two sets of professional skills. First, they need to be experts in teaching and learning; that is, pedagogical approaches. Second, they also need to be experts in their sector specialism. Therefore, the effective implementation of induction and in-service training of Vocational Teachers shall be imperative to bridge the current gap between demand and availability of qualified skill trainers and to

keep the skill trainers abreast of industry requirements.

The absence of pre-service vocational teacher training programmes has also been acknowledged in the scheme of vocationalisation of school education. It is also mentioned in the scheme that "It is the teacher who represents and implements the educational policy in the actual classroom situation and, as such, is the most crucial input. Presently, pre-service training for vocational teachers is practically non-existent; in-service training is inadequate, and competent vocational teachers are often not available in desired numbers. Teachers' training, therefore, should be a priority."

Thus, it may be concluded that if vocational education is to emerge as a distinct and viable stream, it must be supported by well-qualified, trained teachers. This is possible only when systematic pre-service and in-service training programmes are planned and executed at various levels on a long-range basis.

Framework on Vocational Pedagogy

To fulfil this gap, the PSS Central Institute of Vocational Education (PSSCIVE) has developed a framework on vocational pedagogy. The framework includes a curriculum to train vocational educators, which comprises all the aspects such as the National Skill Qualification Framework, Vocationalisation of School Education, Learning Outcome-based Curriculum and Vocational Pedagogy, Instructional Methods in Vocational Education, Instructional Media for Vocational Education and Training, Assessment, Evaluation, and Certification. All the modules the curriculum comprises are depicted in the figure

The training of vocational educators on Vocational Pedagogy will mainly focus on developing an understanding of the pedagogical principles of teaching-learning, the use of

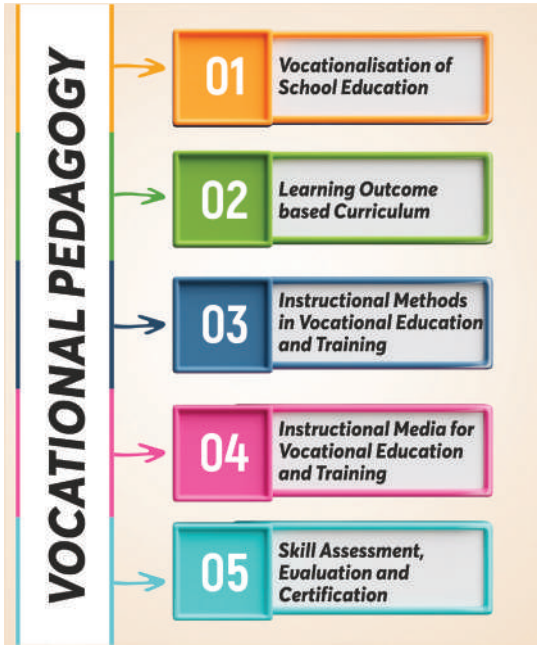

Fig. 14.4: Vocational Pedagogy

instructional media, methods for enhancing instructional effectiveness in the classroom, organising activity-based teaching-learning (such as role plays, group discussions, assignments, classroom practices, field visits, etc.), and conducting skills assessments as per the learning outcomes. The curriculum on vocational pedagogy is focused on developing master trainers and providing training to vocational educators, which will be utilised by PSSCIVE, States, and UTs. These master trainers will then be conducting training programmes for the Vocational Educators in the States for qualitative improvement in the vocational education programme. The programme is designed with specific objectives and outcomes.

Specific Objectives

At the end of the programme, the participants will be able to:

1. Comprehend the roles and responsibilities w.r.t vocationalisation of school education;
2. Apply different instructional methods and techniques for effective implementation of learning outcome based vocational curriculum in school;
3. Use appropriate instructional media and ICT tools for effective classroom instruction;
4. Prepare and deliver instructional plan for teaching vocational subjects;
5. Develop competence in using techniques of vocational skills assessment, evaluation, and certification.

Programme Outcomes:

Module-1 Vocationalisation of School Education

1. Explain the need for and importance of NSQF in India;
2. Acquainted with terms applicable to NSQF;
3. Describe level descriptors of NSQF;
4. Aware about the significance of vocationalisation of school education
5. Identify the role of various organisations in implementation of vocational education and training;
6. Evaluate the knowledge and skills required by Vocational Educators for effective curriculum transaction;
7. Derive the roles of vocational educators; and
8. Describe terminologies used in Gazette Notification of NSQF.

Module-2 Learning Outcome Based Curriculum

1. Explain the importance of learning outcome based vocational curriculum;
2. Describe the process of developing a curriculum (DACUM);
3. Comprehend the design and structure of learning outcome based vocational curriculum;
4. Describe vocational pedagogy;
5. Explain the domains of learning;
6. Develop instructional objectives; and
7. Differentiate between instructional objective and learning outcome.

Module-3 Instructional Methods in Vocational Education and Training

1. Describe factors affecting vocational learning;
2. Demonstrate the role of vocational educator in vocational learning;
3. Use instructional methods to encourage students for effective vocational learning;
4. Differentiate between teaching, training, and learning;
5. Identify the needs of particular group of students and set instructional design;
6. Select the effective instructional methods for concerned vocational content or topic;
7. Explain concepts of instructional plan for teaching-learning of vocational subjects;
8. Assess pre-existing knowledge of students of vocational subjects; and
9. Prepare instructional plan for theory session, activities and lab work of vocational subjects.

Module-4 Instructional Media for Vocational Education and Training

1. Describe the types and importance of instructional media;
2. Select and develop appropriate instructional media;
3. Integrate ICT in teaching-learning process;

4. Demonstrate the use of instructional media in micro teaching or reflective learning;
5. Describe the need of different types of indoor and outdoor activities;
6. Demonstrate the selection and process of organising indoor and outdoor activities;
7. Describe the need of students support system in the school;
8. Explain the concept of vocational guidance and counselling services in the school;
9. Explain need of vertical mobility, career information and guidance, career melas, and apprenticeship training;
10. Organise camp for apprenticeship training; and
11. Organisation of career melas

Module-5 Skill Assessment, Evaluation and Certification

1. Differentiate between assessment and evaluation;
2. Describe the purpose of assessment and evaluation;
3. Explain the learning indicators and its types;
4. Explain concept of assessment and evaluation for vocational subject;
5. Describe various tools and techniques for assessment and evaluation;
6. Demonstrate the use of various tools and techniques for assessment and evaluation;
7. Explain the concept of techniques of assessment;
8. Judge the students 'achievement using the grading system;
9. Describe skills assessment;
10. Develop criteria for judging the portfolio; and
11. Describe the process of skills certification by SSC and examination board.

Summary

VET is essential for equipping individuals with industry-relevant skills and enhancing workforce readiness. The NEP 2020 emphasises the integration of vocational education into mainstream learning and highlights the need for professionally trained educators. Vocational teachers must possess both subject-specific expertise and general teaching competencies, such as communication, curriculum

development, student assessment, and industry collaboration.

To address the gap in vocational teacher training, structured pre-service and in-service programs are necessary. The PSSCIVE has designed a vocational pedagogy framework that includes modules on instructional strategies, assessment techniques, and the use of technology in teaching. This initiative aims to develop master trainers who will further train vocational educators across the country. Strengthening vocational teacher training will ultimately enhance the quality of vocational education, improving student employability and aligning the education system with industry needs.

CHAPTER
15

Inclusive Vocational Education for Children with Special Needs

Overview

Inclusive education ensures that all students, regardless of their physical, intellectual, social, or linguistic differences, are educated together, same is true for Vocational education (VE). Vocational education equips students with practical skills that prepare them for the world of work. Combining these concepts, Inclusive VE provides children with special needs too, the opportunity to learn alongside their peers gaining valuable work-related skills. This will also be instrumental in social equity through Inclusive education approach.

The NEP 2020 and the National Curriculum Framework for School Education (NCF-SE) 2023 emphasise the integration of inclusivity in VE to cater to the diverse needs of learners and make education accessible to all. Inclusivity in vocational education ensures that no learner is left behind, fostering equitable opportunities for individuals irrespective of their socio-economic background, gender, disability, or geographical location.

Objectives

After completing this chapter, you will be able to:

1. describe the concept and importance of inclusivity in vocational education for Children with Special Needs (CWSN).
2. explore the aims and advantages of inclusive vocational education for empowering marginalised groups.
3. identify different categories of disabilities and strategies to include CWSN in vocational education programmes.
4. analyse effective implementation dimensions for fostering inclusivity in vocational education.

What is Inclusivity?

Inclusivity refers to the practice of ensuring equal access to opportunities and resources for individuals from diverse backgrounds, including those who are traditionally marginalised. In the context of vocational education, inclusivity means creating learning environments and curricula that address the needs of every learner, including those with disabilities, from economically disadvantaged groups, remote areas, and different gender identities. Inclusivity ensures that all individuals can acquire skills and participate meaningfully in the workforce.

Objectives of Inclusive Education in Vocational Education

1. Ensure accessibility to vocational education for learners of all backgrounds and abilities.
2. Promote equity by addressing diverse needs in skill development opportunities.
3. Empower marginalised groups to enhance employability and self-reliance.
4. Foster inclusive training environments that respect and celebrate diversity.
5. Support lifelong learning through skill-building and continuous growth opportunities.

Advantages of Inclusive Vocational Education

One of the key advantages of inclusive vocational education is its potential to bridge the gap between education and employment. Inclusive vocational education caters to this demand by offering specialised training in various trades, from traditional crafts and agriculture to modern technology-based industries. As a result, individuals who may not have access to conventional higher education can still acquire valuable skills that make them employable and financially independent. Moreover, inclusive vocational education has the power to transform lives and empower marginalised communities. Some of the advantages of inclusivity are highlighted below:

- **Skill Development and Employability**
  - Provides tailored training to develop skills suited to their abilities.
  - Enhances employability by preparing them for specific job roles aligned with their strengths.

- **Promotes Independence**
  - Equips children with special needs with practical skills for self-reliance.
  - Reduces dependence on family or caregivers by enabling financial independence.
- **Boosts Confidence and Self-esteem**
  - Builds a sense of accomplishment through skill mastery.
  - Fosters self-worth and social recognition in both personal and professional spheres.
  - Facilitates Social Inclusion
  - Encourages interaction with peers from diverse backgrounds, fostering understanding and acceptance.
  - Promotes integration into mainstream society by reducing social stigmas.
- **Customised Learning**
  - Adapts teaching methods, tools, and resources to cater to the specific needs of learners.
  - Provides personalised support to overcome learning barriers.
- **Enhances Quality of Life**
  - Improves overall well-being by enabling participation in meaningful and productive activities.
  - Offers opportunities to contribute to society and achieve a sense of purpose.
- **Encourages Lifelong Learning**
  - Creates pathways for continuous skill development and career growth.
  - Encourages adaptability to changing job market demands.
- **Promotes Equity and Inclusion**
  - Ensures equal access to education and employment opportunities.
  - Helps bridge gaps in societal participation and economic contribution.

Categories of disabilities and facilitating the inclusivity in the implementation of Vocational Education programme or courses for CWSN

1. **Children with Physical Disabilities**
   - **Examples:** Orthopedic impairments, mobility limitations, or conditions like cerebral palsy.

Strategies:

- Skill-based training adapted to their physical capabilities (e.g., computer programming, graphic design).
- Accessible infrastructure, such as ramps, specialised tools, and assistive devices.

2. **Children with Intellectual Disabilities**
   - **Examples:** Down syndrome, developmental delays, or mild to moderate intellectual impairments.

     Strategies:
     - Simplified and repetitive training methods.
     - Focus on practical skills like gardening, housekeeping, or assembling simple products.
3. **Children with Hearing Impairments**
   - **Examples:** Partial or complete hearing loss.

     Strategies:
     - Use of sign language interpreters and visual aids.
     - Training in fields like tailoring, IT services, or artistic crafts where auditory communication is less critical.
4. **Children with Visual Impairments**
   - **Examples:** Partial or complete loss of vision.

     Strategies:
   - Braille resources, screen readers, and tactile teaching aids.
   - Training in fields like massage therapy, music, or call-centre operations with voice-based systems.
5. **Children with Autism Spectrum Disorder (ASD)**
   - **Examples:** Challenges with social interaction, communication, and repetitive behaviours.

     Strategies:
     - Structured and predictable training environments.
     - Focus on individualised tasks like data entry, quality checking, or artistic crafts.
6. **Children with Learning Disabilities**
   - **Examples:** Dyslexia, dyscalculia, or ADHD.

     Strategies:
     - Multisensory learning techniques and step-by-step instructions.
     - Training in practical and creative fields like carpentry, culinary arts, or photography.
7. **Children with Speech and Language Impairments**
   - **Examples:** Stuttering, mutism, or articulation disorders.

Strategies:

- Emphasis on non-verbal communication skills and activities.
- Vocational paths like IT, graphic design, or manual arts that do not heavily rely on verbal communication.

8. **Children with Emotional and Behavioural Disorders**
   - **Examples:** Anxiety, depression, or conduct disorders.

   Strategies:
   - Counselling support alongside skill training.
   - Emphasis on stress-reducing activities such as horticulture, art, or animal care.
9. **Children with Multiple Disabilities**
   - **Examples:** Coexisting conditions like hearing and visual impairments or intellectual disabilities with physical challenges.

   Strategies:
   - Integrated and interdisciplinary approaches tailored to multiple needs.
   - Use of assistive technologies and collaborative teaching methods.

Fig. 15.1: Diagrammatic representation of strategies for inclusion of CWSN in Vocational Education

Effective implementation dimensions for inclusivity in Vocational Education for Children with Special Needs

1. **Awareness Campaigns:** Promoting the importance of vocational education among underrepresented groups.
2. **Financial Assistance:** Offering scholarships, fee waivers, and stipends for economically disadvantaged learners.
3. **Public-Private Partnerships:** Collaborating with industries to provide internships and job placements for diverse groups.
4. **Community Engagement:** Involving local communities to identify and address barriers to inclusion.
5. **Flexible Learning Modalities:** Utilising online platforms and blended learning to reach remote learners.
6. **Capacity Building:** Training educators to adopt inclusive pedagogies and utilise assistive technologies effectively.
7. **Policy-level Interventions:** Governments must formulate and enforce inclusive policies as outlined in NEP 2020 and NCF-SE 2023.
8. **Institutional Support:** Vocational training institutes must adopt inclusive practices and ensure accessibility.
9. **Monitoring and Evaluation:** Regular assessments should be conducted to track progress and identify gaps in inclusivity.
10. **Collaboration:** Partnerships with NGOs, private sectors, and community organizations can amplify the reach and impact of inclusive programs.

Summary

Inclusive vocational education integrates the principles of inclusivity and skill development to ensure equitable opportunities for (CWSN). By providing practical training and fostering a sense of belonging, inclusive vocational education equips learners with disabilities to participate meaningfully in the workforce and society. National frameworks like NEP 2020 and NCF-SE 2023 emphasise the importance of inclusivity in vocational education to cater to diverse learner needs and promote social equity.

This approach aims to address barriers related to socio-economic status, gender, disability, and geographical location, offering a transformative pathway to employability, independence, and lifelong learning. It emphasises creating tailored learning

environments, adaptive curricula, and supportive infrastructure for various disabilities, such as physical, intellectual, and sensory impairments, among others. Effective strategies include the use of assistive technologies, specialised teaching methods, and vocational training in fields suited to individual capabilities.

The advantages of inclusive vocational education are multifaceted, including skill development, enhanced employability, financial independence, and social inclusion. It also promotes confidence, reduces societal stigmas, and ensures equal access to opportunities. For successful implementation, key dimensions include awareness campaigns, financial assistance, public-private partnerships, flexible learning modalities, and capacity building among educators. Additionally, collaborative efforts from government policies, community engagement, and institutional support are essential to create an inclusive, empowering educational framework for all learners.

CHAPTER
16

Vocational Education in Higher Education Institutions

OVERVIEW

The introduction of vocational education in higher education aligns with the objectives of the NEP 2020, which emphasises the importance of skill-based training and the promotion of multidisciplinary learning. By offering courses that cater to the demands of industries, such as manufacturing, technology, healthcare, and services etc. These institutions aim to provide students with the practical knowledge and technical expertise needed to excel in the real world of work.

Vocational education has emerged as a critical component of India's higher education landscape. Highly competitive market needs a workforce that is equipped with both academic knowledge and industry-relevant skills for driving economic growth, productivity and innovation. Recognizing this need, the NEP 2020 and the University Grants Commission (UGC) have emphasised the vertical progression of vocational education in Higher Education Institutions (HEIs). This will pave way to develop higher and specialised skills in different sectors of economy.

Therefore, to bridge the gap between education and employability it is essential to promote Bachelor of Vocational Education (B. Voc) and Master of Vocational Education (M.Voc) programmes are aligned with the National Skills Qualifications Framework (NSQF), and fostering partnerships with industries. This shift will not only enhance student's competency but also contributes to regional economic development.

OBJECTIVES

After going through this chapter, you will be able to:

1. Explain the Significance of Vocational Education in Higher Education.

2. To Acquaint with the key Initiatives under NEP 2020 and UGC.
3. Examine the Integration of Vocational Education in HEIs.
4. To Acquaint with the Higher Education Institutions in India linking Vocational Education with School Education.

Vocational Education in Higher Education Institutions

Vocational education has become an integral part of India's higher education system, especially with the increased emphasis on skill development in line with industry needs. The integration of vocational education into higher education institutions (HEIs) is seen as a critical step toward making education more relevant to the evolving real world of work and improving employability. The NEP 2020 and the University Grants Commission (UGC) have been pivotal in promoting this transformation.

NEP 2020 and Vocational Education in Higher Education

The NEP 2020 outlines a visionary plan for the future of education in India, aiming to transform the traditional system into one that fosters holistic development and multi-disciplinary learning. Vocational education is central to this transformation. NEP 2020 sets a strong foundation for the integration of vocational education in higher education, aiming to transform India's education system and create a workforce ready to meet the demands of the 21st century economy. Effective implementation and collaboration among stakeholders will be critical to achieving these goals.

The Key highlights of NEP 2020 related to vocational education in higher education institutions:

1. **Integration of Vocational Education:** NEP 2020 emphasises the integration of vocational education into all levels of education, including higher education, ensuring that it is no longer treated as a separate or inferior track. Vocational courses will be embedded within undergraduate, postgraduate, and diploma programme promoting multidisciplinary learning.
2. **National Skills Qualifications Framework (NSQF):** The policy promotes alignment with the NSQF, ensuring that vocational qualifications are standardised and recognised across institutions and industries. The NSQF have 8 levels linking skill education from school education to higher education.

3. **Multiple Entry and Exit Options:** NEP 2020 introduces flexibility in vocational programme, where students can enter and exit programme at various levels (certificates, diplomas, and degrees) and re-enter education as needed.
4. **Focus on Regional and Local Skills:** HEIs will design vocational programme tailored to local and regional needs, promoting traditional crafts, arts, and regional industries. This supports sustainable development and preserves India's cultural heritage.
5. **Blended Learning Models:** The policy encourages blended learning models combining classroom, online, and experiential learning to offer flexibility in vocational training.
6. **Academic Bank of Credits (ABC):** The ABC system allows students to accumulate and transfer credits from vocational and academic courses across institutions. This promotes lifelong learning and enables students to explore diverse career pathways.
7. **Internships and Apprenticeships:** NEP 2020 emphasises internships, apprenticeships, and on-the-job training as core components of vocational education in HEIs. The NEP encourages robust partnerships between HEIs and industries local businesses, and start-ups. This will enhance the relevance and quality of vocational training.
8. **Inclusivity and Accessibility:** Special provisions such as scholarships, financial aid, and community outreach programme will ensure vocational education is accessible to economically disadvantaged and marginalised groups.
9. **Skill Development for Emerging Fields:** NEP 2020 prioritises training in emerging sectors such as artificial intelligence, data science, renewable energy, robotics, and biotechnology. HEIs will establish skill development centres to train students in advanced technologies and future-ready skills.
10. **Entrepreneurship and Innovation:** Vocational education in higher education will foster entrepreneurial skills by integrating practical problem-solving and innovation into the curriculum. Start-up incubators and innovation hubs will be set up in HEIs to support student-led ventures.
11. **Digital and Online Learning Platforms:** Digital tools and platforms like SWAYAM and DIKSHA will provide online vocational courses, expanding accessibility to students in remote areas. Blended learning models will ensure flexibility for students pursuing vocational education.

12. **Targeting 50% Enrollment by 2035:** NEP-2020 aims to provide exposure to vocational education to 50 per cent of higher education students by 2035. Partnerships with the National Skill Development Corporation (NSDC) and other organisations will play a key role in achieving this target.

Significance of Vocational Education in Higher Education

Vocational education within higher education institutions plays a vital role in:

1. **Multi-Disciplinary Approach:** "Students of arts and humanities will aim to learn more science and all will make an effort to incorporate more vocational subjects and soft skills. Vocational Education is to be offered alongside mainstream academic subjects in HEIs." (NEP 2020). This allows students to pursue skill-based training while continuing their academic education.
2. **Bridging the Skill Gap:** Vocational education in higher education plays a crucial role in aligning academic learning with industry needs. By integrating practical skills with theoretical knowledge, it ensures that students are job-ready and equipped with competencies required in various sectors.
3. **Inclusivity:** Vocational education promotes inclusivity by providing skill-based learning opportunities to students from diverse socio-economic backgrounds. It helps bridge educational disparities by offering multiple entry and exit points, enabling learners to acquire skills at their own pace.
4. **Improving Employability:** A well-structured vocational education system enhances employability by equipping students with industry-relevant skills, hands-on training, and certifications. It fosters a workforce that meets the demands of various professions, increasing job prospects and economic self-reliance.
5. **Flexibility and Innovation:** Vocational education offers flexible learning pathways, allowing students to blend academic and skill-based training. With a focus on industry trends and technological advancements, it encourages innovation, entrepreneurship, and adaptability in a rapidly evolving job market.

UGC Guidelines on Vocational Education

The University Grants Commission (UGC) has been instrumental in pushing for the integration of vocational education into the higher education curriculum. Some of the initiatives include:

1. **Bachelor of Vocation (B.Voc.) and Master of Vocation (M.Voc.) Programme:** The UGC promotes degree programs that blend academic education with skill-based training. These Programmes offer students in-depth knowledge in specific trades while also providing them with practical training.
2. **National Skills Qualifications Framework (NSQF):** UGC mandates alignment with NSQF for vocational Programmes in HEIs to ensure students acquire nationally recognised certifications. From levels-L 4.5 to L 8 are levels for higher education. (please refer chapter 4 for description of qualification at each level)
3. **Community Colleges and Skill Development Centres:** UGC supports the establishment of Community Colleges and Skill Development Centres within universities and colleges to provide skill-based education through short-term and flexible courses.
4. **Partnerships with Industries:** HEIs are encouraged to collaborate with industries to design curricula that are aligned with industry requirements. UGC emphasises the importance of internships, apprenticeships, and placement drives to connect students with the job market.

Models of Vocational Education in HEIs

Several models of vocational education have been adopted across India to implement vocational training in higher education institutions. These include:

1. **Standalone Vocational Programmes:** Many HEIs offer standalone B.Voc. and M.Voc. programme that focus on sectors such as IT, Retail, Healthcare, Agriculture, Automotive, and Hospitality.
2. **Vocational Education as an Elective:** Some institutions offer vocational courses as electives that students can choose alongside their traditional degree programs.
3. **Dual Degrees or Diplomas:** HEIs are offering dual-degree programme where students can earn a degree in a traditional academic field while simultaneously pursuing a diploma in a vocational field.

Integrate and Consolidate Higher Education Institutions

The primary objective of the higher education policy is to integrate and consolidate higher education institutions, transitioning them

into large, multidisciplinary universities, colleges, and HEI clusters or Knowledge Hubs. Higher Education Institutions offering bachelor and master's degree in vocational education aligned with the National Skills Qualifications Framework named as Bachelor of Vocational Education (B.Voc.) and Master of Vocational Education (M.Voc.) supporting vertical mobility. There are various universities and institutions offering UGC approved Bachelor and Master's degree programme, some of them are as follows:

1. **Skill Universities:**
   - Bhartiya Skill Development University, Jaipur (Rajasthan)
   - Rajasthan ILD Skill University (RISU), Jaipur (Rajasthan)
   - Shri Vishwakarma Skill University (SVSU), Chandigarh (Haryana)
   - Global SCOPE Skill University, Bhopal (Madhya Pradesh)
   - Maharashtra State Skill University, (MSSU), Pune (Maharashtra)
   - Ant Skill University, Coimbatore (Tamil Nadu)
   - Gujarat Skill Development University, (GSDU) Gandhinagar (Gujarat)
   - Delhi Skill and Entrepreneurship University, (DSEU) Delhi
2. **Prominent HEIs:**
   - Tata Institute of Social Sciences (TISS)
   - IGNOU and State Open Universities
   - University of Delhi (DU): Offers vocational programmes in commerce and retail management.
   - Amity University: Offers B.Voc. in specialised fields like interior design and journalism.
3. **Sector Skill Councils (SSCs):**
   - Partnered HEIs offering customised vocational programmes tailored to sectors like construction, healthcare, and automotive.
4. **Community Colleges and Polytechnics:**
   - Local institutions offering diplomas in IT, agriculture, and hospitality.
5. **Online Platforms and Blended Learning:**
   - SWAYAM and other UGC-approved online portals offering NSQF-aligned vocational certifications.

Universities and institutions offering bachelor and master's programme in vocational education are gradually increasing, for detail of programmes and university refer to UGC website.

16.7 Summary

The integration of vocational education into higher education institutions (HEIs) is a key focus of the NEP 2020, aiming to bridge the gap between academic learning and industry demands. This initiative addresses several systemic issues, such as limited access, rigid disciplinary separation, and inadequate skill development, and promotes skill-based, multidisciplinary education aligned with the NSQF. It also fosters partnerships with industries to enhance practical learning. Key elements include multiple entry-exit options, blended learning, internships, and inclusivity, particularly for marginalised groups. Programmes like B.Voc. and M.Voc. are offered by various universities and skill-focused institutions, ensuring students gain hands-on experience and industry-relevant training. This shift aims to bridge the education-employability gap, drive economic growth, and meet the demands of emerging sectors while fostering innovation and entrepreneurship.

The integration of vocational education in HEIs is a key focus of the NEP 2020, aiming to bridge the gap between academic learning and industry demands. This initiative addresses several systemic issues, such as limited access, rigid disciplinary separation, and inadequate skill development, and promotes skill-based, multidisciplinary education aligned with the NSQF. Also fostering partnerships with industries to enhance practical learning. Key elements include multiple entry-exit options, blended learning, internships, and inclusivity, particularly for marginalised groups. Programmes like (B.Voc.) and (M.Voc.) are offered by various universities and skill-focused institutions, ensuring students gain hands-on experience and industry-relevant training. This shift aims to bridge the education-employability gap, drive economic growth, and meet the demands of emerging sectors while fostering innovation and entrepreneurship.

CHAPTER
17

Roles and Responsibilities of Principal and Vocational Teacher

OVERVIEW

The success and quality of vocational education directly depends upon the catalysing role of principals and vocational teachers, who serve as the pillars of the entire vocational education programme. The effectiveness and quality of VE depend upon timely fund release, deployment of responsible and trained functionaries, meaningful curriculum transaction, practical training including OJT training, and internships at industry workplaces. The ultimate outcome involves assessment, evaluation, and validation of competency development through joint industry-school monitoring and certification.

While effectiveness depends on factors, such as funding and curriculum delivery, the active participation and leadership of principals and vocational teachers as the most important human resources in the system are crucial. Both are instrumental in ensuring the quality, relevance, and impact of vocational education. This chapter provides a comprehensive discussion on their roles and functions, focusing on their contribution to administration, curriculum implementation, student support, industry linkage, and educational outcomes.

OBJECTIVES

After the completion of this chapter, you will be able to:

1. analyse the roles and responsibilities of principals and vocational teachers.
2. evaluate the collaborative partnership between principals and vocational teachers in creating effective learning environments.
3. assess the impact of effective leadership and instruction on student employability and skill development.

Role and Responsibilities of the Principal in Vocational Education

The principal serves as the head administrator and strategic leader responsible for integrating vocational education with general education to meet national goals and local skill development needs. Some Important roles and responsibilities of principal are as follows:

1. **Instructional Leader:** Principals serve as instructional leaders and curriculum managers, ensuring vocational education develops 21st century skills through integrated curriculum and teaching.
2. **Curriculum and Assessment Manager:** Principals provide dynamic leadership for vocational curriculum implementation, ensuring alignment with NSQF levels and holistic development through competency-based syllabi and employability modules. They supervise comprehensive vocational assessments including continuous evaluation, practical, viva voce, and portfolios using job-role specific tools while facilitating external assessments. Principals also ensure inclusive assessments for students with special needs, following Samagra Shiksha and Inclusive Education guidelines.
3. **Facilitator of Industry Collaboration:** Principals strengthen vocational education by proactively building partnerships with industries, NGOs, and government agencies for OJT, internships, and apprenticeships (for example, hospitality training). They invite guest faculty, arrange skill expos, and collaborate on job fairs. Modernising labs with current industry-standard equipment is also key to ensure students are job-ready through industry networking

Fig. 17.1: Meeting of Educational Professional

4. **Human Resource Manager:** The principal manages vocational trainers and staff, overseeing recruitment, deployment, and professional growth. They lead teacher development by identifying needs and facilitating training opportunities while fostering a collaborative environment. Recruitment prioritises industry experience, certifications, and pedagogical training. The principal conducts performance appraisals, encourages mentorship, manages grievances through effective delegation and committee structures, and promotes gender equality among educators.
5. **Financial Manager:** As financial manager, the principal ensures optimal use of vocational education funds from sources like RMSA, NSQF, and CSR for tools, visits, and maintenance. They prepare annual budgets prioritising infrastructure, safety, consumables, and technology while maintaining transparent financial processes through proper record-keeping and documentation. The principal ensures compliant procurement, instructor training, and safety certification for new projects like laboratory grants.
6. **Student Welfare and Discipline Officer:** The principal promotes student well-being, safety, and ethical behavior through career counseling, mental health support, scholarships, and peer mentoring. They prevent dropouts through tracking, community engagement, and flexible learning while ensuring a safe environment via anti-bullying, gender sensitivity, and substance abuse policies. Discipline is maintained through codes of conduct, value education, and student leadership roles, with regular interactions and career guidance events contributing to a healthy school climate and student success.
7. **Community and Parental Liaison:** The principal builds community and parental trust in vocational education through meetings, exhibitions, and open houses while involving community members as evaluators and advisors. They encourage parental engagement in career planning and collaborate with local governance and NGOs to mobilise resources and increase participation, effectively popularising vocational education through direct community involvement.
8. **Change Agent and Innovator:** As a change leader, the principal embraces digital education through platforms, virtual labs, AR or VR, and LMS for blended learning while promoting entrepreneurship, design thinking, and start-up culture.
9. **Promoting and Facilitating Vocational Education:** Beyond administrative duties, the principal actively promotes vocational

education through lectures, school visits, and career guidance while engaging the community through open houses and alumni meets. They support career fests, skill festivals, and industry expert lectures while conducting graduate follow-up to track relevance and build networks. The principal facilitates industry networking and integrates employability skills development, fostering synergy between instruction and practical skill acquisition to ensure vocational education is valued and effectively delivered.

Understanding Vocational Teacher/Trainers

A Vocational Teacher or Trainer, also called as career and technical education teacher, is one who facilitates students to develop competencies (knowledge, skill, and attitude) in selected vocational or occupational subjects, at different stages of school and higher education for providing opportunities to work in different productive and service-related work settings.

The vocational teacher prepares the learners to be gainfully employed as wage and self-employed workers in both, organised as well as unorganised, sectors of the economy. The vocational teacher integrates theoretical and practical aspects of the vocational subjects along with employability skills. Vocational teacher specialises in a particular field of vocation and strives to develop the required knowledge, skills and attitudes or values needed to succeed in the profession or vocation.

Importance of Vocational Teacher in Vocational Education

Position of a vocational teacher is very dynamic and challenging. The NEP 2020 has also put the teacher at the centre of fundamental reforms in the education system. The new education policy aims to re-establish teachers, including vocational teachers, at all levels, as the most respected and essential members of our society because they truly shape our next generation of citizens, who contribute to the advancement of both the economy and the society. The Policy aims to build systems that must do everything to empower teachers and help them do their jobs as effectively as possible. The new education policy advocates the best and brightest to enter the teaching profession.

NEP 2020 ensures livelihood, respect, dignity, and autonomy while also instilling basic quality control and accountability methods

into the system. With the recent technological advances in education and the ease of access to information, the place of a 21st century teacher has become more challenging as well as demanding. Today, the teacher is expected to be more of a facilitator of student learning than a storehouse of information. A teacher is also responsible for guiding the students and creating an enabling environment to help them develop higher-order thinking skills such as problem-solving, creativity and critical thinking. Today learning happens everywhere, on the go, and can be customised according to students' styles and preferences. The pedagogy has transitioned from teacher-centred teaching-learning to student-led and collaborative teaching-learning, experiential learning, critical learning, etc. Advent of cybernetics, total transformation in the competency profile of the work force, and stress on entrepreneurship and self-employment have brought a sea change in the place of vocational teacher in the total system of education. At a time, when the learner is becoming self-initiated and autonomous, the vocational teacher can no longer be merely an information dispenser.

The 12th Five-Year Plan (2012–2017) estimated that only a very small percentage of the Indian workforce in the age group of 19–24 (less than 5per cent) received formal vocational education. Whereas in countries, such as the USA, the number is 52per cent, in Germany 75per cent, and South Korea it is as high as 96per cent. These numbers only underline the urgency of the need to hasten the spread of vocational education in India. (NEP 2020, pt. 16.1), hence the importance of vocational teachers in the system of education.

Roles and Responsibilities of Vocational Teachers or Trainers

The vocational teacher is expected to be equipped with the latest knowledge in their area of specialisation. A regular refreshing of knowledge is essential to keep abreast of the latest developments. Apart from subject-matter competencies, the vocational teacher must also be equally conversant with core teaching skills and communication techniques. This would imply that their has to be an experienced practitioner, both as a teacher and as a professional. Besides being an effective communicator in a classroom, the teacher is also required to undertake many management functions, like arranging collaboration with industry and organisations, guiding students for placement, seeking community involvement,

ensuring optimum utilisation of available resources, managing purchases, installation and storage of tools and arranging materials and equipment. Arranging meetings and participating in discussions are also included within the ambit of their functions.

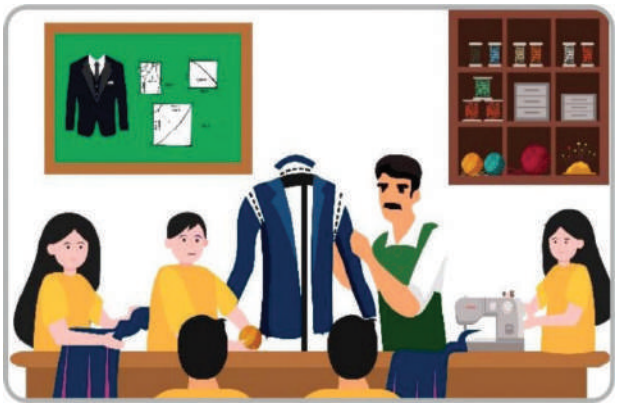

Fig. 17.2: Vocational Training Workshop

The vocational teacher occasionally is asked to develop curriculum for a new course or prepare a list of tools and equipment for a course or even provide a list of books for the library. Another important role relates to developing instructional material. Students may also approach the teacher for guidance and counselling for their educational and occupational problems like choice of course, further education, self-employment support, placement, etc.

Following are the specific roles and responsibilities of a vocational teacher:

1. Demonstrate Content Expertise or Knowledge in their area
2. Demonstrate pedagogical skills during teaching-learning and assessment
3. Plan teaching-learning sessions
4. Develop and use a variety of digital and non-digital resources
5. Develop and analyse curriculum
6. Facilitate and mentor learning and learner
7. Demonstrate managerial skills
8. Identify, organise and efficiently use tools and techniques of content as well as teaching-learning
9. Demonstrate values, work ethics and empathy towards students
10. Demonstrate concern for safety, health, and environment
11. Practice assessment of learning, for learning and as learning

12. Conduct action research
13. Engage in self-professional improvement
14. Facilitate in the placement of vocational students for OJT training, and apprenticeship training

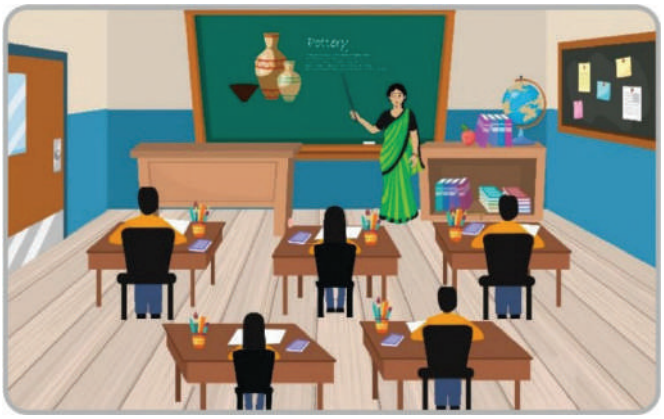

Fig. 17.3: Teacher Instructing Students on Pottery

Summary

This chapter highlights how the success of vocational education fundamentally hinges on the essential partnership between principals and vocational teachers. Principals assume multifaceted leadership roles including strategic planning, instructional oversight, curriculum management, industry collaboration, and resource administration. They serve as change agents and innovators, fostering institutional growth while maintaining strong community connections and ensuring student welfare. Vocational teachers complement this leadership by serving as subject experts, instructional facilitators, career mentors, and industry liaisons. They function as curriculum developers, assessment specialists, and lifelong learners who bridge the gap between classroom instruction and industry requirements. Both roles demand continuous professional development and adaptation to evolving industry needs and technological advancements. The proactive engagement of both professionals creates an enabling environment where effective skill and knowledge delivery can flourish. Their combined efforts significantly enhance learners' employability, productivity, and essential life skills, thereby contributing to national development and building a competent skilled workforce.

References

Ministry of Education. (2020) National Education Policy 2020 https://ncert.nic.in/pdf/nep/NEP_final_HINDI.pdf

NCERT National Curriculum Framework for School Education 2023 NCERT. https://ncert.nic.in/pdf/focus-group/NCF-SE_2023EN.pdf

Ministry of Education Samagra Shiksha framework for implementation https://samagra.education.gov.in/docs/Framework_IISE%20_F.pdf

National Skill development policy 2009 https://www.msde.gov.in/sites/default/files/2019-09/National-Skill-Development-Policy-March-09.pdf

NCERT 2024: Kaushal Bodh - Textbook for Vocational Education (Grade 6) https://ncert.nic.in/textbook.php

Ministry of Skill Development and Entrepreneurship https://msde.gov.in/

PSS Central Institute of Vocational Education https://psscive.ac.in/

National Career Service - Ministry of Labour and Employment https://www.ncs.gov.in/Pages/default.aspx

National Council of Educational Research and Training https://ncert.nic.in/

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