

Emergence of Vocational Education : A Historical Perspective

▪ A.P. Verma

UNIT

1

Introduction

The term 'vocational education,' in its broadest sense, as used by the National Working Group on Vocationalization of Education under the chairmanship of Prof. Kulandaiswamy, covers education and skill development at all levels (from post-primary through tertiary education) both through formal and non-formal programmes.

Since one of the significant aims of education is to enable the learner to attain economic independence either through wage employment or self employment, a lot of importance was given to the development of a set of skills/competencies which will make a learner more employable and at the same time impart entrepreneurial education. Initiatives to provide this kind of education were taken both in the pre-independence and post independence era. Vocational education of an informal nature dates back to earliest civilization. Craftsperson in metal, stone, wood, cloth, leather and other materials used to train and impart vocational skills and knowledge to their apprentices. Against this backdrop we shall discuss in the unit the emergence of vocational education historically.



Learning outcomes

The unit is intended to provide a broad view of the historical development as well as psychological and economic perspectives. At the end of this unit you should be able to:

- trace the historical perspective and developments of vocational education;
- analyse the economic situation and its setting for the development of vocational education; and
- examine the psychological aspect of the learner.

Vocational education

Human civilization has grown through the ages as a result of its quest to transmit knowledge and skills from generation to generation. As a result human race has learnt through accumulated experiences how to face and control natural forces and how to live and survive within the existing physical surroundings existing.

Since the beginning, knowledge and manual skills have, in one form or another, been transmitted from one person to another. This pattern of knowledge and skill transfer which began as family tradition, extended to apprenticeship i.e. training under an expert. The latter originated during the middle ages and was among the first forms of organized learning. In India there existed a very strong *Guru-shishya* tradition of education and training. Millions of youth in India are still learning occupational skills through this process which enables them to earn a living on the one hand and contribute to the growth and development of the country on the other.

The age old process of transmitting knowledge and skills underlying various occupations from person to person may be regarded as the forerunner of the present concept of vocational education and/or training.

In a broader sense, vocational education and training may be viewed as a learning experience whereby a person learns to carry out work in any specific trade proficiently and efficiently. Learning on the job in family tradition or as an apprentice with a trade person without pre-laid structure of instructions and achievement levels is the unorganized form that often leads to no justification while specific vocational education and training in an institutional setting is the organized form. This broad view of vocational education and training is legitimized in view of a very high proportion of skilled persons working in different trades having undergone through learning process in the unorganized form as compared to the proportion of such people coming from organized vocational education and training institutions. Recognition of such skills in the society indicates acceptance of this form of learning in India. However, in a strictly formal sense, vocational education or training implies a series of organized and controlled learning experiences used to educate or train a person for a given occupation.

Vocational education world wide is rich and diverse. The profile of vocational learner varies more than in any other sector of education, in terms of age, abilities and interests. The curricular demands cover a very wide range of trades – practically related to all aspects of everyday life. The unprecedented developments in science and technology have tended to expand the scope of vocational areas, and need for a properly established institutional mechanism to provide organized vocational education and training. Thus, vocational education covers a wide spectrum of occupational areas – from traditional crafts and trades to those occupations based on modern technology.

As described by Twining (1987), “the content of vocational education is the *hidden hand* behind most aspects of everyday life”. Imagine the activities that take place in a home since morning. Reading newspaper (depending on printing paper, printing ink, printing, journalism), sitting on a chair (carpenter, furniture manufacture), children getting ready for schools – putting on school uniform (tailor, dress maker, shoe-manufacture), boarding a school bus (driver, automobile mechanic, manufacture), gardener watering the plants (horticulture, nursery), cook preparing lunch (Indian, Chinese, Continental). And the house itself, where the family is living (masons, plumbers, electrician, carpenter, painter, etc.) we cannot miss agriculture and agriculture related activities – agro-based industries, food production, food-processing. Energy supply whether it is from coal, oil, gas or nuclear power, depends on a chain of vocational competence. As long as life is going on, people having vocational education and training, either through organized form or unorganized form, will have important roles to play in it.

The pervasiveness of vocational education and training in virtually every aspects of our lives, made people so used to it that they do not realize its significance and importance.

General education is important for the development of an individual and for preparing him/her for the citizenship of a country. However, it does not prepare the individual for the world of work. For the holistic development of a person, both general education as well as vocational education are, thus, necessary.

The various dimensions of human development are – physical, intellectual, social, civic, economic, cultural, ethical and spiritual. The economic dimension includes occupational education, vocational development, employability, entrepreneurship, alleviation of poverty.

For large segments of population – men and women, vocational education and training plays a significant role for their economic development. Viewed in this way, the significance of vocational education can be seen from two aspects – individual and community extending to nation.

Individual having acquired vocational competence, gains self-confidence as he/she feels capable of doing something specific and useful. This also enhances his/her income generating capacity. By becoming a useful and productive member of a family and the community, he/she develops self-respect.

The community, on the other hand, gets benefited by having vocationally trained persons. Its members get quality goods and quality services from those trained persons. The overall quality of life of the people thus improves contributing to prosperity and development of the community.

Historical review of vocational education

A historical review of education in India reveals that vocational education has been the subject of deliberations and debate for more than a century. Many commissions and committees set up by Government of India during the pre-Independence and post-Independence period recommended far-reaching changes and reforms in the education system in general and vocational education and training system in particular.

A large number of children and youth in rural and urban areas were not able to get decent employment through generation education in the absence of any proper institutional mechanism to provide vocational education and training to them. Hence, many significant recommendations were made during pre- and post-independence period, study of which gives a clear perspective for vocational education.

It was Wood's Despatch of 1854, which for the first time, highlighted the need for introducing vocational education at the secondary school stage.

The Indian Education Commission (1882) headed by Hunter, examined the problems of education as a whole, especially of vocational and technical education. The Hartog Review Committee (1929) and the Sapru Enquiry Committee (1934) emphasized the vital role of vocational education in the country's economic development.

The Wood-Abbot Advisory Committee (1936) report formed the basis for introducing diploma level technical education and establishment of polytechnics. The Sargent Report (1944) emphasized the need to introduce two streams, academic and technical with the objective to provide general education combined with some preparations for careers which students may pursue on leaving the schools.

In independent India the Radhakrishnan Commission (1948) emphasized the need for vocational education 'to meet a variety of needs of our young men and women giving a vocational bias to their courses by retaining at the same time their value in assistance of general education as preparation for university courses'.

The Secondary Education Commission (Mudaliar Commission 1952-53) putting forward the idea of multipurpose school recommended an 11 year pattern of school education. It recommended diversification after eight years of schooling by providing training in various crafts/vocations. The Commission felt that at the end of this, a student should be in a position, if s/he wishes, to enter life and take up some vocation. A chain of multi-purpose schools was established in response to these recommendations throughout the country.

The Parliamentary resolution on National Policy of Education 1968 accepted the recommendation of the Education Commission (1964-66) and emphasized the 'effectively terminal nature of the vocational stream of studies'.

Critically analyse the implications of 'effectively terminal nature of vocational stream of studies' in about 150 words.

THE PEOPLE
UNIVERSITY

The Central Advisory Board of Education (CABE) at its meeting endorsed the policy resolution and resolved to adopt 10+2+3 pattern of education and reiterated that the +2 stage of education should be regarded not merely as a college preparatory, but a period for preparing an increasingly large number of school leavers for different vocations in life. The CABE entrusted NCERT to prepare curricula and help the state governments in implementing vocational education programme (VEP).

The NCERT document on *Higher Secondary Education and its Vocationalization* (1976) visualized a long and difficult transition between accepting this in principle and implementing it in practice, as that should require not only internal restructuring and modification of contents in education but also establishment of strong linkages between education and other sectors concerned with development (industries, commerce, agriculture, health, community development). The significant recommendations made in the NCERT document relate to flexibility, nature of courses, change-over from one stream to another, time allocation, and teacher orientation.

The Working Group on Vocationalization of Education (1977) headed by P. Sabanayagam, constituted by the Ministry of Education, Government of India, presented the scheme of implementation and its financial implications. The Group also recommended setting up of a National Council of Vocational Education and Training with corresponding State Councils. However, in pursuance of this scheme only a few states and union territories started implementing the vocational education programme.

National Review Committee headed by Dr. Malcolm Adiseshiah on Higher Secondary Education (1978) with Special Reference to Vocationalization recommended that the Higher Secondary stage should comprise a general education spectrum and a vocationalized spectrum or a mix in spectrum. The committee also stressed the importance of foundation courses for the vocational streams. The committee also recommended modification of recruitment policies and the creation of facilities for proper vertical mobility for the vocationally qualified persons.

The document '*Challenge of Education – A Policy Perspective*' (1984) published by the Ministry of Education, Government of India was a pre-cursor to the final statement of policy. It initiated a nation wide debate, on all major issues in the domain of education, which ultimately facilitated the formulation of new education policy.

The National Working Group on Vocationalization of Education, Ministry of Education, led by Kulandaiswamy (1985) undertook extensive review of vocational education in the country. The group noted that despite the priority accorded to this programme in the report of Kothari Commission, the erstwhile National Policy on Education (1968) as well as in the successive five year plans, the implementation of the programme had remained weak. Because of inadequate resources, lack of proper management structure, technical expertise and inadequate teacher preparation the result had not been commensurate with expectations. Keeping in view the shortcomings, the Group provided guidelines for the development of the programme. It formulated the concept of vocationalization at different levels and recommended the linkages required among different agencies running vocational programmes, setting up of a well knit management system, an action plan for promotion of vocationalization in the country and liberal financial assistance for achievement of targets fixed.

The *National Policy on Education (NPE 1986)* accorded a very high priority to the programme of vocationalization of education.

The target of the VE programme was set to cover 10 per cent of higher secondary students by 1990 and 25 per cent by 1995. It was envisaged that a substantial majority of the products of the vocational courses would be absorbed by wage or self-employment.

The *Programme of Action (1992)* prepared by the Ministry of Education for implementation of National Policy of education 1986, in the field of vocationalization accepted the model suggested by the Kulandaiswamy Working Group. A detailed framework of the programme of vocationalization of education to be launched in the country was formulated in consultation with experts and discussed in the conference of state education ministers held in April 1987. A broad consensus was arrived at on various components of the programme. In the conference the state representatives were of the view that liberal financial assistance was necessary for implementation of the programme. Consequently, the centrally sponsored scheme (CSS) was launched by the Ministry of Human Resource Development under which assistance was to be provided to the state governments/UTs administration and non-government organizations under approved heads and sharing pattern between the Centre and the States. Hundred per cent grant was to be provided by the Centre for apprenticeship, evaluation and monitoring, district vocational surveys, curriculum development, instructional material development, textbook development, teacher training, resource person training, equipment to schools and construction of workshop/laboratory buildings. Apart from this 50 per cent grant was made available from the Centre for establishing management structure and 75 per cent of the expenditure incurred on schools staff to be met out of the Central resources.

To ensure the successful implementation of vocational education programme, the centrally sponsored scheme also suggested a management structure at state level.

The Synergy Group on Vocational Education was constituted by the Ministry of Human Resource Development (MHRD), Government of India in 1995 under the chairmanship of Dr. Sam Pitroda to recommend a Plan of Action for better operationalization of vocational education programme. Its recommendations are broad based and focus attention on thrust areas envisaged in fulfilling national skilled human resource requirement at various levels (professional, middle skilled and semi-skilled) in the context of (a) removing mis-match between demand and supply, (b) avoiding duplication and coordinating and integrating efforts of various departments and institutions and Non-Governmental Organizations (NGOs) and (c) keeping pace with the globalization and consequent induction of new and emerging technologies and developing skilled manpower in related occupations/vocations.

The International Commission on Education for the Twenty-First century (1996) in its report entitled '*Learning: The Treasure Within*' has admitted in its chapter on Secondary Education: the Crossroads of life, "On the one hand it is often regarded as the gateway to social and economic advancement. It is accused on the other hand, of being inegalitarian not sufficiently open to the outside world and, generally failing to prepare adolescents not only for higher education but also for the world of work.....It is now generally recognized that, for economic growth to take place, a higher proportion of the population has to have received secondary education." The four pillars of education mentioned in the report are a) Learning to know, b) Learning to do, c) Learning to live together, and d) Learning to be. In fact "learning to do" essentially leads to skill/competence development; more broadly to deal with many situations of work in teams. Further, there is emphasis on life long learning due to rapid technological changes.

National Curriculum Framework for School Education (NCFSE) (2000) deliberated extensively, consulted eminent experts and conducted several seminars, both at regional and national levels to review and update educational concerns and priorities. With regard to vocational education, it is stated that in order to meet the required targets and also to respond to the emerging challenges, vocational education needs to be given a high priority. Vocational courses in the formal school system would help in enhancing the employability of the students. It further stated that vocational

education stream will also have to find its due place in alternative schooling, especially in the open learning system.

The NCFSE also dwelt upon the nature of technological advancement, and in this context also stated that the highly competitive world would demand a continuous upgradation of knowledge and skills leading to the idea of Life Long Learning. It also said that skills necessary for self-employment and entrepreneurship need to be provided to all the students who enter the field of vocational education. NCFSE places a lot of responsibility on the schools and it says that schools will assess the need, relevance and potential of the courses before offering them to students. It emphasized that vertical and lateral linkages need to be built in order to offer better career options to vocational students and to give respectability and acceptability to the VEP.

NCFSE (2000) also envisages a vocational education programme which is flexible, modular, credit based, having multi entry/exit points and provides an opportunity to a large number of students who leave school at different stages. NCFSE (2000) recognized development of linkages between schools and 'industry/enterprise' as an important feature of the programme. The term 'industry' in this context includes every such organization that has direct relevance with vocational courses offered and has the potential for employment.

The National Curriculum Framework (2005) draws attention to work as one of the curricular areas. It suggests steps to link learning from primary stage upwards with work on the ground that work transforms knowledge into experience and generates important personal and social values such as self-reliance, creativity, and cooperation. It observes that the introduction of productive work as a pedagogic medium in school curriculum will have major transformative implications.

NCF (2005) considers institutionalization of work centered education as an integral part of school curriculum from pre-primary to plus two stage which is expected to lay the necessary foundation for re-conceptualizing and restructuring of vocational education to meet the challenges of the globalized economy. It visualizes the establishment of separate Vocational Education and Training (VET) centers and institutions from the level of village clusters/blocks to sub-divisional/ district towns and metropolitan areas. It implies expansion of existing structures and creating a national spectrum of facilities, such as KVKs, polytechnics, rural development agencies, primary health centers, engineering, agricultural and medical colleges, specialized industrial training centres in both private and public sectors etc. It would also call for shifting and adjusting of resources of the present 6000 odd senior secondary schools with vocational stream by dovetailing them into the new VET programme.

The framework underlines that VET should provide a 'preferred and dignified' choice rather than a terminal or a 'last resort' option. The proposed VET shall offer flexible and modular certificate or diploma courses of varying durations carved out of the socio-economic scenario. The courses would provide multiple entry and exit points with inbuilt credit accumulation facility. Each course will also have an adequate academic component (or a provision of bridge course or both) in order to ensure lateral and vertical linkages with the academic and professional programmes. NCF states that the curriculum should be revised and updated from time to time to ensure its relevance and take into consideration the technological developments. It emphasizes that it should be made obligatory for all kinds of facilities engaged in production and services to collaborate with the schools of the area by providing the required 'work benches' (or 'work places or work spots') apart from training and monitoring support.

NCF (2005) puts up that eligibility for VET courses could be relaxed to include a class V certificate until the year 2010 when Sarva Shiksha Abhiyan is expected to achieve UEE but subsequently it

must be raised to class VIII certificate and eventually to class X certificate when the target year of universal secondary education is reached. In no case, however, the children below the age of 16 years be eligible for admission into a VET programme.

NCF (2005) observes that to translate this vision of VET into practice, several new support structures and resource institutions will have to be created at various levels.

ACTIVITY 2



- i) *Based on the reports of various committees and commissions, list the significant features of development of vocational education in India? This will facilitate you in reflecting on the developmental and evolving nature of vocational education and its interactions with different sectors of economy.*

- ii) *In the context of 'National Policy on Education 1986', enumerate briefly the provisions for vocational education in the country. Write in about 100 words.*

-
- This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is no text or other markings on the paper.

The economy is on a fast track of development. Hence, the demand from the world of work is to be assessed continuously to figure out the job potential and skill requirements in various sectors to enable the training provider to offer the market driven courses to the learners.

ACTIVITY 3



Outline the features of vocational courses which meet the demands of the economy as well as the learners? Write in about 100 words.

Summary

We discussed in this unit the historical perspective of emergence of vocational education. The recommendations of national and international commissions give an insight regarding the spread of vocational education on one hand and socio-economic challenges on the other. The concept of life long learning is gaining ground in view of rapid technological developments. The economic and market considerations are important in providing a set of skills/competencies which make the learner more employable and suitable for the enterprise. The aspects of relevance, equity and quality have to be ensured to provide the learner with the kind of vocational education and training which meets his/her aspirations as well as the market demand of suitable manpower. Psychology of the learner and the demand from the economic sector is also discussed.

Suggested readings



GOI (1985). *Challenge of education – a policy perspective*. New Delhi: GOI.

GOI (1985). *Report of national working group on vocationalization of education*. New Delhi: GOI.

GOI (1966). *Report of the Education Commission 1964-66: education for national development*. New Delhi: Ministry of Education, Government of India.

John Twining (1987). Introduction. In John Twining et al (eds.) *World year book of education 1987: vocational education*. London: Kogan Page.

MHRD (1986). *National policy on education*. New Delhi: MHRD.

National Policy of Education (1968). New Delhi: Ministry of Education, Government of India.

NCERT (2005). *National curriculum framework*. New Delhi: NCERT.

NCERT (2000). *National curriculum framework for school education*. New Delhi: NCERT.

NCERT (1998). *Vocational education programme – issues and imperatives for future planning*. New Delhi: NCERT.

NCERT (1976). *Higher secondary education and its vocationalization*. New Delhi: NCERT.

UNESCO (1998). *Learning: the treasure within 'Report to UNESCO of the International Commission on Education for Twenty-first century*, Paris: UNESCO.



Questions for critical reflection

1. How to deliver VET to a variety of learners spread throughout the country and at the same time maintain the desirable standard and quality?
 2. What initiatives need to be taken to deliver VET through Open Distance Learning by utilizing the developments in ICT?
 3. How to meet the demand of good trainers for skill based vocational courses and utilize the existing infrastructural facility for practical training of vocational students?
-

Introduction

While going through the historical perspective on vocational education and training in the first unit, you may have observed how knowledge and skill transfer, a form of vocation education, has been an integral part of human civilization, how it reached its high level and refinement in *Guru-shishya Parampara* of Indian culture, and how in ancient cultures, the skills that made a person expert in various occupations and livelihood activities were transferred through family tradition and apprenticeship. You have also seen how institutionalisation of vocational education and training took place with time as a result of recommendations of a number of committees and commissions. These recommendations, which also enveloped the thoughts of national level visionaries such as Mahatma Gandhi, got reflected in National Policies of Education 1968 and 1986. The provisions of these policies were detailed out in consequent Programme of Action and national level plans, the Five Year Plans. This unit takes you deeper into the policy provisions that gave shape to the VEP in the country.



Learning outcomes

This unit is intended to provide a broad view of the policy dimensions, issues and challenges and perspectives with regard to vocational education. At the end of the unit, you should be able to:

- identify the concerns of policymakers to provide vocational education to a large number of school leavers with a view to make them more employable;
- analyse the provisions made in *National Policy on Education 1986* with regard to vocational education, the education for women's equality, scheduled caste, scheduled tribe, other educationally backward sections of society particularly in rural areas, minorities and handicapped; and
- examine various dimensions of vocational education – the target group, the providers, the delivery system, involvement of community, the linkages and networking and various other issues as mentioned in the NPE' 86.

The 1968 education policy and after

The *National Policy of Education 1968* marked a significant step in the history of education in post-independent India. It aimed to promote national progress, a sense of common citizenship and culture and to strengthen national integration. It laid stress on the need for a radical reconstruction of the education system, to improve its quality at all stages, and paid significant attention to science and technology, the cultivation of moral values and a closer relation between education and the life of the people. The Parliamentary resolution on National Policy of Education 1968 (NPE 1968) accepted the recommendations of the Education Commission (1964-65) and emphasized the “effectively terminal nature of the vocational stream of studies”.

The National Policy on Education 1968, on the lines of the recommendations of Education Commission, put forward a 10+2+3 pattern of education for the country, with 10 years of common curriculum for all. For the first time, it recommended bifurcation of secondary stage of school education into vocational and academic streams. The essential concept of work-experience, vocational and technical education put into the policy included:

- The school and the community should be brought closer through suitable programmes of mutual service and support. Work experience and national service including participation in meaningful and challenging programmes of community service and national reconstruction should accordingly become an integral part of education. Emphasis in these programmes should be on self-help, character formation and on developing a sense of social commitment.
- Special emphasis should be placed on the development of education for agriculture and industry.
- In technical education, practical training in industry should form an integral part of such education. Technical education and research should be related closely to industry, encouraging the flow of personnel both ways and providing for continuous cooperation in the provision, design and periodical review of training programmes and facilities.

Thus, the National Policy of Education (1968, and later 1986, revised in 1992) stressed upon a continuum of vocational orientation, exposure and education introducing Work Education from classes I to VIII, prevocational education in classes IX and X and vocational education as a distinct stream in XI and XII. The work oriented education is offered at elementary level under one of the various nomenclatures, e.g. work experience/work education/life-oriented education/craft education/socially useful productive work.

The Central Advisory Board of Education (CABE) endorsed the NPE Resolution in 1975 to adopt 10+2+3 pattern of education. It reiterated that the +2 stage of education should not only prepare the students for higher studies but also for different vocations in life. The CABE entrusted NCERT to prepare curricula and help the state governments in implementing vocational education.

ACTIVITY 3



Based on the discussion regarding National Policy on Education 1968, critically reflect on the salient features of the Policy. This will facilitate you in understanding institutionalisation of vocational education in the country, also covering the interests of a large number of school leavers. Write your reflection in about 150 words.

Some perceptions and challenges before the planners at the time of giving the country a new education policy in 1986

- In our national perception education is essentially for all. This is fundamental to our all round development, material, social and spiritual.
- Through proper education the achievement of economic and social development can be facilitated and expedited. That is why the concept of education as an investment in development has been increasingly accepted.
- Education has an acculturating role. It refines sensitivities and perceptions that contribute to national cohesion, a scientific temper and independence of mind and spirit – thus furthering the goals of socialism, secularism and democracy enshrined in our Constitution.
- Education develops human resource for different levels of the economy. It is also the substrate on which research and development flourish, being the ultimate guarantee of national self-reliance.
- The constitutional amendment of 1976, which includes Education in the concurrent list was an important step with significant implications and required a new sharing of responsibility between the Union Government and the States in respect of this vital area of national life.
- Critical development issue was the continuous upgradation of skills so that human resources could be produced of the kind and quality required by the society.
- Life long education was recognized as a cherished goal of educational process. In this context, opportunities were to be provided to the youth, housewives, agriculture and industrial workers and professionals to continue the education of their choice, at the pace that suited them. The future thrust was to be in the direction of open and distance learning.
- Expanded and flexible delivery modalities were to be perceived leading to the skilling of out-of-school groups and lifelong learning opportunities for all.

National policy on education – 1986 (with modified version of 1992)

Although vocational education scheme at 10+2 stage came into being in late 1970s with solid guidelines from the policy document on Vocationalisation of Secondary Education (1976), only a few States and UTs adopted it. NPE 1986 gave an impetus to vocational education. In the section on secondary education it has comprehensively dealt with vocationalisation, main aspects of which are given below:

The introduction of systematic, well-planned and rigorously implemented programmes of vocational education is crucial in the proposed educational reorganization. These elements are meant to develop a healthy attitude amongst students towards work and life, to enhance individual employability, to reduce the mis-match between the demand and supply of skilled manpower, and to provide an alternative for those intending to pursue higher education without particular interest or purpose. Efforts will be made to provide children at the higher secondary level with generic vocational courses which cut across several occupational fields and which are not occupation specific. (Refer to N.P.E. 5.16)

Vocational Education will also be a distinct stream, intended to prepare students for identified occupations spanning several areas of activity. These courses will ordinarily be provided after the secondary stage, but keeping the scheme flexible, they may also be made available after class VIII. (Refer to N.P.E. 5.17)

The NPE '86 underscores the aspects of work experience and pre-vocational programme as given below:

Work experience, viewed as purposive and meaningful manual work, organized as an integral part of the learning process and resulting in either goods or services useful to the community, is considered as an essential component at all stages of education, to be provided through well-structured and graded programmes. It would comprise activities in accord with the interests, abilities and needs of students, the level of skills and knowledge to be graded with the stages of education. This experience would be helpful on his entry into the workforce. Pre-vocational programmes provided at the lower secondary stage will also facilitate the choice of the vocational courses at the higher secondary stage. (Refer to N.P.E. 8.14)

Health planning and health service management should optimally interlock with the education and training of appropriate categories of health manpower through health-related vocational courses. Health education at the primary and middle levels will ensure the commitment of the individual to family and community health, and lead to health-related vocational courses at the +2 stage of higher secondary education. Efforts will be made to devise similar vocational courses based on Agriculture, Marketing, Social Services, etc. An emphasis will also be on development of attitudes, knowledge, and skills for entrepreneurship and self-employment. (Refer to N.P.E. 5.18)

The establishment of vocational courses or institutions will be the responsibility of the Government as well as employers in the public and private sectors: the Government will, however, take special steps to cater to the needs of women, rural and tribal students and the deprived sections of society. Appropriate programmes will also be started for the handicapped. (Refer to N.P.E. 5.19)

It emphasizes the provision of computer literacy, development of computer skills as given below:

Effort will be made to provide computer literacy in as many secondary level institutions as possible so that the children are equipped with necessary computer skills to be effective in the emerging technological world. A proper understanding of the work ethos and of the values of a human and composite culture will be brought about through appropriately formulated curricula. Vocationalisation through specialized institutions or through the refashioning of secondary education will, at this stage, provide valuable manpower for economic growth. (Refer to N.P.E. 5.13)

Graduates of vocational courses will be given opportunities, under predetermined conditions, for professional growth, career improvement and lateral entry into courses of general, technical and professional education through appropriate bridge courses. (Refer to N.P.E. 5.20)

Non-formal, flexible and need-based vocational programmes will also be made available to neoliterates, youth who have completed primary education, school dropouts, persons engaged in work and unemployed or partially employed persons. Special attention in this regard will be given to women. (Refer to N.P.E. 5.21)

Tertiary level courses will be organized for the young who graduate from the higher secondary courses of the academic stream and may also require vocational courses. (Refer to N.P.E. 5.22)

It is proposed that vocational courses cover 10 per cent of higher secondary students by 1995 and 25 per cent by 2000. Steps will be taken to see that a substantial majority of the products of vocational courses are employed or become self-employed. Review of the courses offered would be regularly undertaken. Government will also review its recruitment policy to encourage diversification at the secondary level. (Refer to N.P.E. 5.23)

Groups in special focus on the policy

Women/Girls

While dealing with secondary education, the NPE'86 says that access will be widened with emphasis on enrolment of girls, SCs, STs, particularly in science, commerce and vocational streams.

The removal of women's illiteracy and obstacles inhibiting their access to, and retention in, elementary education will receive overriding priority, through provision of special support services, setting of time targets, and effective monitoring. Major emphasis will be laid on women's participation in vocational, technical and professional education at different levels. The policy of non-discrimination will be pursued vigorously to eliminate sex stereo-typing in vocational and professional courses and to promote women's participation in non-traditional occupations, as well as in existing and emergent technologies (Refer to N.P.E. 4.3)

Groups with special needs (handicapped)

The objective should be to integrate the physically and mentally handicapped with the general community as equal partners. With this in view, some of the significant measures proposed are given below:

- Adequate arrangements will be made to provide vocational training to the disabled.
- Teachers' training programmes will be reoriented, in particular for teachers of primary classes, to enable them to deal with the special difficulties of the handicapped children; and
- Voluntary efforts for the education of the disabled, will be encouraged in every possible manner. (Refer to N.P.E. 4.9)

Adults

In respect of provision of education for adults, the policy has pledged to eradicate illiteracy particularly in the 15-35 age group through various means especially the National Literacy Mission.

Lifelong learning

It has focused its attention on vocational education and continuous upgradation of skills. The policy states:

While discussing the open learning system (OLS) NPE'86 has highlighted the flexibility and innovativeness of the OLS and observed that it was particularly suited to the diverse requirements of the citizens of our country, including those who had joined the vocational stream. It said that National Open School will be strengthened and open learning facilities extended in a phased manner at the secondary level in all parts of the country.

ACTIVITY 4



THE PEOPLE
UNIVERSITY

In this document, for the first time, a detailed strategy of implementation accompanied by assignment of specific responsibilities was brought out. The National Policy of Education 1986

and the Programme of Action 1992 assign a special role to NCERT in preparing and promoting a National Curriculum Framework.

According to the recommendations of POA adequate management infrastructure should be set up at national, regional, state, district and institutional level for effectively carrying out four categories of functions required for implementing the programme: policy formulation and coordination, research and development, administration and supervision and examination and certification. At the national level, the policy making and coordinating body proposed to be set up was the Joint Council of Vocational Education (JCVE). The counterpart organisations, to be set up, at the state, district and school level were State Council of Vocational Education (SCVE), District Vocational Education Committee (DVEC), and Institution Advisory Committee. A Bureau of Vocational Education (BVE) would be set up in MHRD, Government of India, to coordinate, oversee and monitor the whole spectrum of vocational education within and outside the school system and it should act as the secretariat of JCVE. Counterpart administrative structure at state, district and institutional level should be built up. At the national level the apex organization for research and development should be the Central Institute of Vocational Education (CIVE), which should be developed from the existing Department of Vocationalization of Education in the NCERT. At the State level the State Institutes of Vocational Education (SIVE) would be set up. The examination and certification bodies at the state and institutional levels should be strengthened. At the regional level the role of Regional Colleges of Education (RCE) and Technical Teachers' Training Institutes should be strengthened and the functions of Boards of Apprenticeship Training should be expanded to include training of vocational apprentices.

Perspectives

Mahatma Gandhi in the late 1930 visualized Basic Education (*Buniyadi Talim*) as a basic tool for the development of national consciousness and reconstruction of the society. His concept of education relating life, work and environment was a new contribution to the philosophy of education, which has now been accepted universally.

The Secondary Education Commission (Mudaliar Commission 1952-53) put forward the idea of multipurpose schools and recommended a 11 years pattern of school education for offering diversification after 8 years of schooling by providing training in various crafts/vocations. The Commission felt that at the end of this, a student should be in position to take up some vocation and enter the world of work.

The Education Commission (1964-66) suggested the restructuring of education into a uniform pattern of 10+2+3 education all over the country, implying ten years of undifferentiated education for all, with diversification into academic and vocational streams at + 2 level.

The NCERT document entitled 'Higher Secondary Education and its Vocationalisation' (1976) emphasized that internal restructuring and modification of contents in education is required for establishment of strong linkages between education and other concerned sectors involved in development process.

The National Working Group on Vocationalisation of Education (Kulandaiswamy's Committee 1985) reviewed the Vocational Education Programme (VEP) in the country and developed guidelines for the expansion of the programmes. Its recommendations led to the development of centrally sponsored schemes (CSS) on vocationalisation of secondary education. The Committee also suggested that socially useful productive work (SUPW) may assume the form of training in life skills and should, therefore, be given pre-vocational orientation.

The National Policy on Education (NPE) 1986 advocated introduction of systematic and well planned vocational education programmes as a continuum from Class 1 with diversification into distinct stream after the secondary level i.e. Class 10.

The NCERT brought out national curriculum framework for school education (NCF-2000) and gave impetus to the concept of vocational education for all. The concept of work experience for students upto class VIII, work experience and pre-vocational education at secondary level, vocational education and generic vocational courses at + 2 level was emphasised. Further more, the vocational courses were perceived to be introduced in flexible, multi entry/exit, credit based, modular format with provision for credit accumulation leading to certificate/diploma.

National Curriculum Framework 2005 has also given importance to the use of hands, learning by doing. Establishment of separate Vocational education training centers has also been advocated. Some in-built features of the NCF are:

- flexible and modular courses of varying durations,
- multiple entry/exit points,
- accessibility from the level of village clusters to district levels,
- decentralized accreditation and equivalency mechanism for agencies located outside the school system.
- It states that the curriculum must meet the learner's needs, impart competencies required by the economic sector, societal expectations, on aspirations of learners. The curriculum must stand on three pillars of relevance, equity and excellence.
- There is a need to develop and implement gender inclusive and gender sensitive curricular strategies to nurture a generation of boys and girls who are equally competent and are sensitive to one another. Moreover, making education accessible to more and more girls, especially rural girls, is absolutely necessary.
- The system must assure the empowerment of learners with special needs and their parents by building partnerships with them at different levels of the process of inclusion.
- It would be essential to consider the specific educational needs of learners from different sections of society with emphasis on the scheduled castes, the scheduled tribes, and other socially and economically disadvantage group.

Summary

We discussed in this unit the development of *National Policy on Education 1968* which considered the report of the Education Commission 1964-66 and its recommendations regarding work experience programmes (WEP) in general education and vocationalization of education programme at the secondary stage. The National Policy on Education 1986 (with modifications undertaken in 1992) has also been discussed at length. The Concept of life long education and flexible delivery modalities are the major requirements in reaching the large number of learners throughout the country. Some significant issues have been highlighted under the perspectives.

Suggested readings



MHRD (1986). *National policy on education*. New Delhi: MHRD

NCERT (2005). *National curriculum framework*. New Delhi: NCERT.



Questions for critical reflection

1. The policy (i.e NPE 1986) had recommended the development of bridge courses for vertical mobility of the vocational students. Reflect on the design of bridge courses facilitating the vocational students to go to the mainstream and vice-versa.
 2. What initiatives need to be undertaken to provide quality training to the vocational learner? How to give the same status to learners of both academic and vocational streams? In other words, how to change the mind set of people?
-

Vocational Education and National Development

▪ A.P. Verma

UNIT

3

Introduction

Education has been accorded a high priority in India's development process. The report of Education Commission (1964-66) made national development the chief concern of education. Its report entitled *Education and National Development* starts with the significant sentence, "The destiny of India is now being shaped in her classroom." The Commission suggested restructuring of education into a uniform pattern called the 10+2+3 pattern all over the country implying ten years of undifferentiated education for all with diversification into academic and vocational streams at the +2 level. It gave priority to the plans of educational reconstruction to the Work Experience Programme (WEP) in general education and Vocationalization of Education Programme (VEP) at the secondary school level.

Secondary education which serves as a bridge between primary and higher education is expected to prepare young persons between the age group 14-18 in the world of work and entry into higher education. The relevant children population at the secondary and senior secondary level as projected in 1996-97 by NSSO has been estimated at 9.66 crores. Against this population the enrolment figure of 1997-98 shows that only 2.70 crores are attending schools. Thus sixty six percent of the eligible population remains out of the school system. To accommodate the children in schools at secondary level we have 1.10 lakh institutions (1998-99). With the emphasis on universalisation of elementary education and programmes like District Primary Education Programme, the enrolment is bound to increase and once this universalisation takes place we may require more than two lakh institutions at the secondary level to accommodate them.

The national goal of vocational education is to fulfil the manpower requirement for sustainable national development and social requirement for employment. It is vocationally competent persons developed through a need based, adequate and appropriate education and professionally sound training programme, which can ensure production of goods and services of the highest quality and standard to maintain economic viability in a globalized market economy. The Vocational Education Programme (VEP) must take into account the ongoing and emerging social, economic, political and environmental implications of rapid scientific and technological changes as well as other global trends in order to prepare desired manpower and contribute to national development. The unit is intended to provide a broad view of the developments in providing competencies/skills to the learners through vocational education programme and preparing middle level human resources so as to reduce the mismatch between demand and supply of human resources.



Learning outcomes

After going through this unit, you should be able to:

- underline and justify the need to diversify education and training at the secondary level so as to provide skills/competencies to learners in order to make them more employable;

- analyse the objective of vocational education;
- examine the vocational component at different stages of education.

Emerging trends

The future work force has to be developed in adequate number and of good quality primarily for three sectors of economy viz. agriculture, industry and services with the focus on the increase in agricultural growth, growth in infrastructure, and improvement in human development (primary health care and primary education)

The thrust areas according to Vision 2020 document of India are:

- Commercial agriculture
- Agro industry and agri-business
- Afforestation for pulp, fuel and power
- Retail and wholesale trade
- Tourism
- Housing
- Construction
- Garment industry
- Other small and medium industries
- IT and IT enabled services
- Education
- Financial Services
- Transport
- Communications
- Community Services

Objectives of vocational education

The objectives of Vocational Education are to:

- fulfil the national goals of development and the removal of unemployment and destitution;
- impart education relevant to productivity, economic development and individual prosperity;
- meet the needs of skilled and middle level manpower for the growing sectors of economy, both organized and unorganized;
- attract a sizeable segment of population to varied vocational courses so as to reduce the rush to tertiary level of education;
- prepare students for self-reliance and gainful employment.

Vocational component at different stages of education

Work experience

Work Experience viewed as a purposive meaningful manual work organized as an integral part of the learning process should be an essential component at all stages of education. It should be provided through well-structured and graded programmes resulting in either goods or services useful to the community. Work experience should inculcate in the learners a respect for manual work, values of self-reliance, cooperativeness, perseverance, helpfulness, work ethics, attitudes, and values related to productive work and concern for the community. It should enable the learners to know and understand the concepts and acquire skills related to various production and service processes.

Pre-vocational education

The pre-vocational education programme at the lower secondary stage in place of Work Experience Programme should facilitate the choice of vocational courses at the higher secondary stage. It should impart training in simple marketable skills to students, develop vocational interests, prepare students for participation in work, inculcate desirable values related to work, and allow for self-exploration of vocational interests. It should be offered in the form of modular courses so that pupils in general should acquire knowledge and marketable skills for direct entry into the world of work.

Vocational education

Vocational education at the +2 stage, develop competencies (knowledge, skills and attitudes) required by a specific occupation or a group of occupations, through diversified vocational courses to prepare learner for the world of work, especially for self employment.

The 11th and 12th grade students have access to around 160 vocational courses offered in about 6000 schools of 32 States/UTs of the country.

Generic vocational course

The Generic vocational course (GVC) is meant for students of general education at the +2 stage. It cuts across various vocations and aims to develop those generic skills which are required by all members of the educated work force regardless of person's occupation e.g. key boarding, communication, interpersonal skill, working in groups etc. It is a step towards improving the quality of general education by developing key competencies/transferable skills for the technology oriented society.

Various systems and approaches of vocational education

The technical vocational education and training is multisectoral in nature. Each ministry/department at the Centre as well as in State Governments is responsible for human resources development in that sector.

The present status of the main formal technical and vocational education and training system is given as follows:

ITI System

Vocational training facilities are available in 4591 MCVT approved ITIs with an enrolment capacity

of 6.5 lakh students per year. The Vocational training covers 43 engineering and 24 non-engineering trades. In addition to these there are advanced training centers (ATC), which provide training in specialized areas.

Community polytechnic

The community polytechnics are the part of polytechnic devoted to rural development with a major activity of manpower planning. At present there are 700 community polytechnics providing training to about 4.5 lakh youth every year. No entry-level qualifications are prescribed and courses are flexible and non-formal.

Senior secondary schools

Under centrally sponsored scheme of vocationalisation of secondary education, vocational courses of two years duration are offered at +2 stages in major areas of (i) agriculture (ii) business and commerce (iii) engineering and technology (iv) health and paramedical (v) home science and (vi) humanities. The entry qualification is 10th pass. PSS Central institute of Vocational Education (PSSCIVE), which is a constituent unit of National Council of Educational Research and Training has developed 94 competency based curricula in all the major areas mentioned above. The enrolment capacity is about 10 lakh students per year in about 6800 senior secondary schools.

Jan shikshan sansthan

There are 108 jan shikshan sansthan spread all over the country offering need based/non-formal vocational courses to youth. This is a centrally sponsored scheme.

Accredited vocation institutes (AVI) of national institute of open schooling (NIOS)

Vocational courses develop by NIOS are delivered through AVIs. The AVIs have linkages with the enterprise for providing practical/hands on experience to the learners. The courses are of varying durations (from 6 months to 2 years) and the prescribed entry level is also different as per the need of the courses. The courses offered are mainly in the areas of:

- Agriculture
- Business and Commerce
- Health and Para-medical
- Home Science and Hospitality Management
- Computers and IT related
- Engineering

ACTIVITY 5



Based on the discussion on the need to diversify at the secondary level and offer of competency-based vocational courses in thrust areas, discuss the suitability of open vocational education for delivery of such programmes. What are the key points that need to be taken care of to maintain quality in VEP and meet the requirements of the economic sector? This will facilitate you to

comprehensively reflect on providing vocational courses through the modality of open schooling. Write in about 150 words.

Location of vocational courses

The NPE 1986 stated that vocational education will be a distinct stream intended to prepare students for identified occupations spanning several areas of activity. The vocational courses will be provided in general education institution after the secondary stage with flexible duration ranging from 1 to 3 years. It has also stated that these courses will ordinarily be provided after the secondary stage, but keeping the scheme flexible, they may also be available after class VIII.

Under the existing system the scheme is facing certain problems, which give rise to the issue of the location of the scheme. Various models which could be tried in schools and outside are discussed below.

Independent vocational school model

In the entire country, only Haryana has established independent vocational education institutes for offering vocational courses. These institutes are under the direct control of the Directorate of Industrial Training and Vocational Education. The examination and certification of vocational students are conducted by the State Board of Secondary Education.

Some state governments have introduced vocational courses by upgrading high schools to senior secondary schools for vocational stream only. In some cases existing technical high schools have been upgraded to +2 vocational institutions for the purpose of starting vocational courses only. It is seen that this model is most suitable for situations where industries are not located in the

vicinity and on the job training cannot be arranged. In such cases the infrastructure at the institution becomes extremely important.

School-industry/dual model

A significantly large number of vocational courses require networking and intensive collaboration with industries and other professional and semi-professional institutions and establishments in imparting day to day instructions especially in organizing practical training. Majority of these courses belong to health, engineering and agriculture areas. This model is in operation in some states. A good example of its success is the one followed in Chandigarh.

General school model

Vocational courses at the +2 level have been started in more than 6000 schools. However, the selection of courses was done without conducting district vocational surveys in advance, although 11 out of 27 states have organized such surveys. The courses need to be selected on the basis of demand, job potential and linkage with industry. The courses from the area of commerce, home-science, information technology and service sector may be more suitable for introduction and transaction in schools.

Non-formal vocational education

The policy in respect of non-formal vocational education programmes has stated that non-formal, flexible and need based vocational programmes will also be made available to neo-literates, youth who have completed primary education, school dropouts, persons engaged in work and unemployed or partially employed persons. Special attention in this regard will be given to "women".

PSSCIVE published a book entitled "Skilled Manpower in Agriculture: Prospects and Modalities" which highlights that there are millions of jobs in the agriculture sector including fisheries. Similarly there are jobs in all other sectors of economy. These jobs would require skilled manpower. Large number of skills could be provided through short-term vocational courses of varying duration.

Since the manpower requirement is extremely large and spread all over the country, it is obvious, that no single system would be able to meet the requirement. For this purpose, besides formal education and training institutions like schools, vocational schools, industrial training institutes and polytechnics, there is a need of large number of NGOs who may offer need based short duration vocational courses.

The PSSCIVE has developed about 60 pre-vocational exemplar modules, which could be used as training modules. Each module has number of skills in it. There is no accreditation mechanism for NGOs and their programmes. NIOS is, however, offering short and stand alone vocational courses, conducting examinations and issuing certificates for them. In future, greater collaboration between NGOs and NIOS can be seen as an effective way to improve quality of courses and provide certification.

National institute of open schooling (NIOS) vocational model

National institute of open schooling has introduced vocational education programme at the school level, for students belonging to any age above 14 years, through distance education mode. It caters to a variety of target groups viz. the farmers, cobblers, carpenters, construction workers, dressmakers, service sector workers etc., those who are looking for some opportunity to obtain latest job skills and also for those for whom certain vocational activities are like hobbies. These

courses are offered through accredited vocational institutions (AVIs). The learning material prepared by NIOS is given to the learners through AVIs. The AVIs arrange contact programme for giving practical/hands on experience. Students can also take one vocational course as stand alone course and get certified.

NIOS also offers credit transfer scheme in which one can choose a course in combination with other non-skill academic subjects. However, if someone wishes to take all vocational subjects he/she can do so in combination with one language course. The NIOS vocational model through open learning has lot of flexibilities and can cover large area of economic activity.

Curricular patterns

Before NPE 86 there were extreme variations in the curricular design from state to state and within the same state from course to course. But all the states which have received central assistance after 1987 have broadly conformed to a common curricular framework with only minor variations. This includes the study of one or two languages, a vocational course with seventy percent of the total time and a foundation course. Within this framework there may be variations with regard to the languages taught, the existence or otherwise of general foundation courses and related subjects. It is important to mention that many of the older variants of curricular pattern still exist on large scales. This includes Tamil Nadu pattern (vocational course –40% of the total time), the Maharashtra pattern (vocational course 33% of the total time) and the Uttar Pradesh and Assam pattern (undefined and variable mix of elective). Some effort has been noticed on the part of these states to phase out the earlier patterns and to have desirable flexibility within a broad national pattern.

Collaborative arrangements for teaching learning

In order to provide practical experience/on the job training to the vocational students a collaborative arrangement with the enterprises is most efficient and cost effective model. Although industrial collaboration is vital element of teaching learning of vocational courses, its extent and modalities vary from state to state and from one vocational area to another. For example, the vocational courses pertaining to health area are all invariably taught through collaboration with hospitals. Similarly agriculture, home science and engineering courses are taught through farm/factory/hotel/enterprise collaboration. Some courses in business and commerce, home science can be taught mostly through arrangements within school. There are several examples where such industrial linkages have been successfully implemented. Within any given state one may see a wide diversity in the extent and nature of such collaborative arrangements.

ACTIVITY 6



Study a collaborative institutional/organisational arrangement for imparting practical training and suggest how this can be made more efficient. Do you think that giving some benefits to the industry in the form of tax benefit or legislation could help in this task? Write your views in about 150 words?

The national model

TVET programmes, which are being offered by different systems prescribe different courses, structure and modalities for the development of materials. The courses offered by Industrial Training Institutes under the Ministry of Labour place great emphasis on practical and development of skills for a particular trade and the component of general education is only 5 to 10 percent. The courses offered under technician education place greater emphasis on theory where the practice component is 30 to 40 percent only. The vocational courses offered at the +2 level follow a design which is as given below:

- | | |
|---|--------------------------------|
| ▪ Language(s) | 10 to 15 percent of total time |
| ▪ General foundation course
comprising of environmental education,
rural development and entrepreneurship
development. | 10 to 15 percent of total time |
| ▪ Vocational theory and practical | 70 percent of total time |

Learners with special education needs (SEN)

In 1944, the Central Advisory Board of Education (CABE) published the comprehensive report called the Sergeant Report on the post war educational development of the country. In this report, provisions for the handicapped were to form an essential part of the national system of education. According to this report handicapped children were to be sent to special schools only when the nature of their defects made it necessary. The Education Commission (1964-66), observed: "the education of the handicapped children should be an inseparable part of the education system." It recommended experimentation with integrated programmes in order to bring in as many children as possible into these programmes.

The government's (Department of Education) initiatives after independence were not ably manifested in the establishment of a few units to conduct workshops primarily meant for blind adults. These units later included people who were deaf, physically impaired and mentally retarded. The welfare approach continued in government programmes. Support was provided to voluntary

organizations for the establishment of model schools for the blind, deaf and mentally retarded.

The Government set up the National Library for the Blind, the Central Braille Press and employment exchanges for the blind. It also made provision for scholarships, prevention and early identification of disabling conditions, developing functional skills and for aids and appliances.

In India a learner with SEN is defined variously in different documents. For example a child with SEN in DPEP documents is defined as a child with disability namely visual, hearing, loco motor and intellectual. The county report of India, however, in the NCERT-UNESCO regional workshop report (2000) states that special needs education (SEN) goes beyond physical disability. It also refers to the large proportion of the children in the school age belonging to the group of child labour, street children, victims of natural catastrophies and social conflicts and those in extreme social and economic deprivation. These children constitute the bulk of dropouts from the school system. However the draft Inclusive Education Scheme (MHRD) addresses the need of learners with disabilities and focuses on the following category of disability:

Visual disability, speech and hearing disability, locomotors disability, neuromusculoskeletal and neuro-developmental disorders including cerebral palsy, autism, mental retardation, multiple disability and learning disabilities.

National Curriculum Framework for School Education (NCFSE, 2000) brought out by NCERT recommended inclusive schools for all without specific reference to pupils with SEN as a way to provide quality education to all learners.

Work education provides an opportunity to students with SEN studying at secondary level to understand the world of work and prepare for possible future careers. The pre-vocational skills include acquisition of work skills.

Vocational courses for children with special abilities is offered through accredited centres by NIOS. Rehabilitation Council of India is also a statutory body and working for children with SEN and developing vocational courses.

R&D support

PSS Central Institute of Vocational Education, a constituent unit of NCERT has been established as an apex body for research and development in the field of vocational education.

The curricula and instructional materials are also developed by the R & D Institutions concerned with each sector. For the higher secondary courses, the NCERT prepares exemplar instructional materials and the states also prepare their own instructional packages. The courses developed by NCERT are based on an analysis of job requirements, and have been grouped under a common title of "Competency Based Curriculum". Both curricula and instructional materials are developed in workshops in which the employment sector personnel, curriculum experts, subject experts and classroom teachers participate. So far, these materials have been prepared on the basis of annual papers rather than modules or units suited for instruction in a semester system. The semester system, though accepted in principle for implementation, is yet to become a reality in the school sector. However, the NCERT has initiated course organization in the form of flexible modules so as to suit the semester system, and this would lead to the development of multi skill competencies to meet employment requirements in the rural areas. All instructional materials, both print and non-print, though owned by NCERT, are freely available for duplication and dissemination by the states. Copyright permission is invariably granted for this purpose.

National curriculum framework 2005 (NCF 2005)

NCF 2005, brought out by NCERT has emphasized work and education as integral components of school curriculum from the primary to senior secondary stage. While emphasizing the pedagogic potential of work in knowledge acquisition, developing values and multiple skill formation, it says that a work centred pedagogy can be pursued with increasing complexity. A set of work related generic competencies (basic, interpersonal, and systemic) could be pursued at all stages of education. This includes critical thinking, creativity, communication skills, aesthetics, work motivation, work ethic of collaborative functioning and entrepreneurship-cum social accountability.

NCF 2005 perceives the VET programme to be implemented in a mission mode, involving the establishment of separate VET centers and institutions, integrating with and expanding the scope of existing institutions such as ITIs, polytechnics, Krishi Vigyan kendras, primary health centers, engineering, medical, agricultural colleges and cooperative etc. Some significant points are mentioned below:

- VET is to serve as a dignified rather than terminal or last resort option.
- Stress on programme for career psychology and counselling as a development tool for children in secondary and higher secondary stages to enable children to plan their career.
- To offer flexible modular certificate or diploma courses of varying durations in vocational area.
- Vocational courses to have multiple entry/exit points.
- Vocational courses to have vertical and horizontal linkages with academic and professional programmes.
- Curriculum should be upto date and flexible.
- Private and Public sector industries to provide 'work benches' and mentoring support on the training site.

International meet on TVET and its recommendations

The significant recommendations/suggestions from the second international congress on TVET organized by UNCESCO are listed below.

The changing demands of 21st century: Challenges to technical and vocational education

- (i) TVE system must adapt to these key features which include globalization an ever-changing technological scenario, the revolution in information and communication and consequent rapid pace of social change.
- (ii) TVE system must therefore be reformed to given life to this new paradigm by achieving flexibility, innovation and productivity, imparting the skills required, addressing the implications of changing labour markers, training and retraining the employed, unemployed and the marginalized with the objective of achieving quality of opportunity for all in both the formal and informal sectors of the economy.
- (iii) There must be a new partnership between education and the world of work to address the

need to develop a synergy between the sectors of education and industry and the various other economic sectors to foster the development of generic competencies, the work ethic, technological and entrepreneurial skills, and for imparting human values and standards for responsible citizenship.

Improving system providing education and training through life

- (i) To make the maximum contribution to life long learning TVE systems need to be open, flexible and learner-oriented.
- (ii) The emphasis must be on articulation, accreditation, accreditation and recognition of prior learning to enhance their opportunities.
- (iii) Perhaps the biggest challenge that TVE faces is to coordinate the needs of a general and vocational education through curriculum, pedagogy and delivery.
- (iv) Career guidance and counseling services are of the utmost importance for all clients of education and training systems, which need to be significantly strengthened.
- (v) Quality assurance is essential to ensure a new higher status for TVE.

Innovation in the education and training process

The new technologies must be harnessed to provide wide spread access to TVET. They have the potential to offer flexibility in time and location to TVE delivery.

Technical and vocational education for all

- (i) TVE programme both formal and non-formal must be made available in varying modes of accessible delivery to the unemployed, early school leavers, out of school youths, disadvantaged by distance and location, rural population etc.
- (ii) The commitment to “TVE for all” requires well designed policies and strategies, increased resources, flexible and appropriate delivery modes etc.

Summary

We discussed in this unit the importance of vocational education and training programme being offered at different levels of the school system. We discussed a variety of vocational models in both formal as well as non-formal systems. The prevalent curriculum patterns for VET and its components were also discussed. Research and Development support in the field of vocational education was discussed. The needs of specially abled children was discussed. The course offering for SEN children through NIOS was also presented. The recommendations of National Curriculum Framework 2005 with regard to work education and vocational education was mentioned. The recommendations of UNESCO regarding TVET is given in the final section.

Suggested readings



NCERT (2005). *National curriculum framework*. New Delhi: NCERT.

NCERT (1998) *Vocational education programme – issues and imperatives for future planning*. New Delhi: NCERT.



Questions for critical reflection

1. Do you think that the provision of VET will contribute to national development by making people multi-skilled and imparting competence so that they become more employable and productive? What steps/linkages would you suggest to make this VET programme more successful and meaningful to the community?
 2. With the advent of ICT, do you visualize a greater emphasis on e-learning, educational programmes beamed through EduSat, and CD-ROM in interactive mode to play a significant role in reaching the unreached? What limitations or barriers do you see in the context of VET?
-



Introduction

In view of the rapidly changing technology, the vocational education system would necessarily require the support in need assessment, development of curriculum, development of instructional materials, support for students, teacher preparation support, infrastructure support, vocational guidance and counseling support, R&D (research and development) support, support in project preparation, financial support, preparation of non print material and e-learning ICT support, technological support, international networking and support, evaluation and certification, community support. The delivery of vocational education through formal and non-formal system is a very challenging and complex enterprise. Open universities, open schools, learning through modern technology of ICT by e-learning and use of computers and internet will have to be conceived on an ever increasing scale to provide VET which is latest, updated and relevant. This unit is intended to provide a broad view of the support systems required to be in place for setting up of a successful delivery system along with monitoring and feedback to improve the VEP.



Learning outcomes

After going through this unit you should be able to:

- identify and describe the national system of management of vocational education;
- explain the need and utility of the various kinds of support systems;
- identify and examine the various technological support available for imparting VET through ICT.

Support systems

When vocational education and training is to be given to a large number of learners through different modalities at different levels, the whole system needs a variety of support in the form of selection and design of courses, identification of training places and experts, infrastructure facilities, learning materials, guidance and counseling, technological support and so on. Certain details regarding support systems are considered and discussed below.

Assessment of emerging occupations through area vocational survey

These surveys provide the basic support to the vocational education and training efforts by helping to find out the areas with job potential. It is a pre-requisite and a basis for introduction of appropriate vocational courses. The survey also helps in identifying the training facilities in the region. The report of Adishesiah Review Committee has stated that the aim of such surveys will be to assess the following:

- Human resource requirement in the area
- The range of available occupations
- The trend of emerging occupations
- The details of levels of competencies needed
- The approximate duration for which such competencies will be in demand
- The extent to which educational and training facilities are available in the neighborhood to provide the requisite competence

The surveys would enable the planners to avoid wastage of time, effort and resources in unproductive areas. NCERT has developed guidelines for conducting such surveys, data collection format and analyses of the data. The surveys must be periodically updated.

Research and development support

PSS Central institute of Vocational Education was set up at Bhopal under the aegis of NCERT as an apex R&D institution in the field of vocational education. The institute, besides research, has offered several developmental support to the VEP in the country by developing a systematic methodology for competency based curricula. It has taken upon itself the task of designing a large number of competency based curricula in more than 100 areas of vocations. For +2 stage in 6 major areas viz. (i) Agriculture (ii) Business and Commerce (iii) Engineering and Technology (iv) Health and Paramedical (v) Home Science (vi) Humanities. For more details, refer to page 35, unit 3.

Support for teacher preparation

Since the VET programme is an innovative programme, its method of identification of courses is based on area vocational survey and the curriculum that follows is also innovative and competency based while the teachers available in the system are those prepared by academic stream, it is extremely difficult to find suitable teachers to teach these courses. Many a time, such teachers may be good in theoretical contents but are weak in practical skills which are expected to be of high quality acceptable in trade/industry. The support of in-service teacher training programmes becomes crucial under such circumstances. Second, there are practising workers in the field who may have learnt skills in family tradition or unorganised, unrecognized apprenticeship e.g. 'Ustaad-shagird tradition'. These people often need skills of communication and theoretical reinforcement as a package in short training programmes. Besides this pre service courses in teacher preparation like B. Ed. (Vocational) are also needed, which are presently being offered by a very few universities only.

Since a large number of vocational teachers will be required to train such a challenging target group, e-learning, computer based learning, computer based training (CBT) radio and T.V in conjunction with face to face mode for practical training may be made use of for training of teachers in future.

This is to be viewed in the context of the fact that as per Tenth Plan document, the available infrastructural facilities for skill development and training are highly inadequate as the number of students who need this kind of training is increasing rapidly. The number of students who drop out regularly after class VIII or X is quite high. It is estimated that formal training capacity for

There are a number of players in the area of TVET and the infrastructural support requirements are also varied from system to system and course to course. These also vary with the level of course, target group, availability of industries and such others.

© Ignorance
THE PEOPLE
UNIVERSITY

The students who take vocational courses are quite young and are expected to be diverted to the world of work at such a young age. Hence, they need a variety of support systems, spanning from the selection of right course to their smooth transition and sustenance in the world of work. Some of these are mentioned below.

41

system or non formal system, boy and girl students, dropouts, SC/ST students, students from economically weaker sections of society and unemployed or under employed youth. In the present scenario more than 160 vocational courses are being offered at + 2 level. Similarly a large number of courses of varying durations in various vocational areas are also offered in ITIs and polytechnics, NIOS and by NGOs in the non-formal system. The right choice needs careful and appropriate guidance.

It is considered necessary that such services be provided during all stages of education and should be sensitive to the needs of children of various groups. Vocational guidance which helps learners to choose among various vocational courses in major areas must indicate possibilities of future career development. In other words guidance entails evaluation based on subtle mix of educational criteria and assessment of adolescent's future personality vis-à-vis job requirements.

Furthermore, at the time of placement also the student who has passed the examination in a particular course needs to be guided by a teacher trained in vocational guidance and counselling or by a counsellor.

Education system should be sufficiently flexible and may be in the form of modules, building bridges between courses so as to meet the aspirations of the society.

There are also educated unemployed youth and the dropouts who need to be guided to attain proper skills to enter the world of work. A system to provide vocational guidance and counselling to this segment also needs to be developed.

Apprenticeship

The scheme provides for ITI pass outs, vocational students, diploma holders, engineering graduates to get practical training in the industrial enterprises and at the same time get stipend. The apprenticeship training is optional on the part of the learner. Students have the option of joining the world of work directly or go for advanced courses, or opt for the apprenticeship programme. The apprenticeship, however, provides an opportunity to the candidate to further refine or have more practice of skills and thus, develop greater confidence in his/her performing ability before joining the real world of work. The provision of stipend is an added advantage.

The short-term courses are not covered by apprenticeship scheme under Apprentices Act 1961. The Apprentices Act was modified later to include the pass outs of vocational stream at +2 stage. The ITI Pass outs, Diploma and Degree pass outs were already covered under the Apprentices Act 1961. While conceding that some vocational areas may not require apprenticeship the target for coverage under apprenticeship programme must be at least 70% of the vocational students.

At present, 94 vocational courses developed by PSS Central Institute of Vocational Education, NCERT have been recognized by the Board for Apprenticeship Training for the purpose of coverage under the Apprentices Act 1961.

ACTIVITY 8



Study the present system of apprenticeship in any setting- formal or informal. Suggest how can the quality of training, imparted through this modality be improved. Discuss the limitations of this model. Write in about 150 words.

Multi-skilling and competency based training

There is an obvious and noticeable trend that a person with multi-skills is more in demand. Further in the rural situation multi skilled persons will be required because of the kind of jobs in rural economy. A person with plumbing skills may also be required to do the electrical repair or replace the fuse for the motor to set the pump in working order. In modern urban setting one can notice a lot of multi storied houses. A person with firefighting skills may be provided with knowledge and skills of electrician so that when required she/he may be in a position to disconnect the supply or be able to handle the electrical short circuits which may be the cause of the fire.

Some examples of multi-skilling in similar vocational trades and related competence areas are given below:

Mason cum plumber

- Construction of House
- Construction of Biogas Plant

General purpose mechanic

- Repair of Two Wheeler
- Repair of Tractor

General fabrication

- Fitter
- Turning
- Welding

General electrician

- House wiring
- Motor rewinding
- Repair of house hold appliances
- Repair of solar appliances

Computer training

- Data entry operator
- Computer maintenance
- Computer programming
- D.T.P. operating.

Support of industry in creating workbenches

It is envisaged in National Curriculum Framework 2005 (NCF2005) that ‘work benches’ (or ‘work places’ or work spots) may be set up with the collaboration of the rural crafts, agriculture or forest based production systems, industries and services. This will have triple advantage. Firstly, it can be set up with minimum capital investment. Secondly, it will provide access to latest techniques and technology available in that area, and thirdly, the students will get hands on experience and exposure to real life problems of designing and marketing. For this purpose, NCF 2005 has suggested that it should be made obligatory for all kinds of facilities engaged in production and services to collaborate with the schools of the area by providing the required ‘work benches’ apart from training and monitoring support.

Recognition of prior learning

When we think of the person who is already working in an enterprise and who wishes to take up a course to improve his/ her quality of life, the question of recognition of the competencies or knowledge gained by the person needs to be addressed. Competency may be attained in a variety of ways. It may be any combination of formal or informal experience and education. The assessor /teacher will test the competency against preset standards and give credit for the prior learning. This, however, involves visualising a whole mechanism for this, along with setting up equivalences.

There is a need to develop a national system of credit accumulation and transfer so that the student may have complete freedom to move from vocational stream to academic stream and vice-versa. This system will also help students who may move from one state to another for a variety of reasons.

Open learning system

Open learning system is emerging as an education system to support learning among those who could not get access to or take advantage of the formal system of education operational within the country. This system provides education of comparable standards in a flexible and learner friendly manner. At the higher secondary stage, the open school system may be utilized fully for both the streams, academic and vocational. It is visualized that many students would like to go in for vocational courses at this level through the open learning system as it provides freedom in the combination of subjects and in the scheme of examination. For maintaining parity of standards,

the formal and open learning system have comparable syllabi in each subject. This comparability of curricula of the two systems would help learners move easily from the open learning system to the formal schooling system and vice-versa. Such a symbiotic relationship is of great advantage to the learner.

Technological support

Technological advancement can come in the students' support for learning, retraining, multi-skilling, in a big way. If one observes the use of computers in daily life one could see that the time has come when communication, ticketing and reservation (air and train), buying and selling, on-line banking, accessing learning materials, e-learning, using e-mail are all done through computer. With the advancement in technology the cost of computer, connectivity, networking, availability of Internet have all become accessible to the common man. There are many schools, which have highly advanced computer laboratories within the reach of all students.

CD-ROM is available and can be used in villages where computers are available but Internet connectivity has not reached. In such cases, CD-ROMs which have been developed as per the curriculum in interactive mode will be extremely useful.

The educational satellite 'EduSat' has been launched by the Government of India. Vocational programmes can be beamed through the educational channels via satellite to the learners in any part of the country. Similarly, video films which show a particular experiment step by step, can be watched by the learners. This is particularly suitable for certain vocational programmes like assembly of computer or assembly/ disassembly of carburettors or other automobile parts. Video programmes are telecast nation wide on Doordarshan (DD-1) and also on educational channel 'Gyan Darshan'.

Digital library

Earlier when a student wanted to refer to some book, article or other resource material, he/she had to go to a library. Now the computer with Internet facility provides access to several websites where latest material, reports, books and journals are available for reference purposes and can be downloaded as per the need. The Dictionary and the Encyclopaedia are also available on line.

Teleconferencing

Teleconferencing is used to link one or more locations/ places through audio/ video and computer technology. Lecture, demonstration etc. by an expert from one location can be heard/seen by students at different locations. During discussions, their difficulties can also be sorted out with the expert. In tele-conferencing there is a studio from where the teacher gives the lecture and the students are assembled at centres, which may be far away, where down linking facilities are available.

Tele conferencing can be of different types. It can be audio conferencing, where conversation takes place between two or more people in a conferencing mode. Video conferencing can be of two types. In one way video conferencing the visual communication is one way from the teaching end and audio communication is two ways. In two way, transfer of audio-video information among participants takes place.

Computer conferencing can take place when the members are simultaneously on line and use network technology to communicate with each other.

Life long learning

In order to cope up with the rapid pace of technological development in the twenty first century, the concept of learning throughout life is the key to remain competitive.

It is perceived that apart from the initial training one would perhaps change job three to four times in his / her career, which may require an advanced course or due to rapid advances in technology suitable professional training and retraining may be required. Further, it is observed that the future trend will be to prepare flexible multi entry / exit credit based modular courses and provide additional advanced modules which may be self paced and as per need of learners.

Upgrading the capabilities of adults/ adult workers with refresher training/retraining will be required to meet the demands of industry, advances / changes in technology and its application as well as the aspirations of the people.

Ample opportunities / facilities for learning throughout life will have to be made and integrated into the system.

E-learning

The e- learning is expected to set a process in motion that can transform the present society into learning societies. There will be an increase in provision of online courses, which will be detailed guided courses that reinforce lessons with interactivity, assignments and self tests. Virtual classroom (VC) will provide opportunity for live interaction without the need for expensive travel.

If the tutor and the learner share the same virtual space at the same time and are able to interact in real time using integrated and text based communication tools, it will be particularly effective for users who learn best by interaction, listening, viewing and questioning.

ACTIVITY 9



Based on the discussion on the various support system prepare a list of five most important support systems giving your own logic why you think them to be important.

International support

Delors report "Learning: the treasure within" prepared by the International Commission on Education for Twenty First Century, is a majestic survey of the emerging world and rapid

technological development and sweeping economic and social change. The four pillars of education as enunciated in the International Commission on Education for the 21st century will have to be considered while designing appropriate systems for the learners.

Summary

We discussed in this unit the important support systems needed to be in place to make the vocational education programme achieve its goals and objectives. The significant support systems like area vocational survey to assess the market needs and the training facilities available in the area, the support for development of relevant curriculum, support for development of learning materials, support for the vocational learner in the form of guidance and counseling, and apprenticeship. Other aspects which have been discussed are development of linkages, teacher's training, evaluation research and development support, technological support, life long education, certification and accreditation and support from International Agencies.

Suggested readings



NCERT (1999). PSSCIVE: *Vocationalisation of education: perspective for the new millennium*. New Delhi: NCERT.

GOI (1985). *Report of national working group on vocationalization of education*. New Delhi: GOI.

NCERT (2005). *National curriculum framework*. New Delhi: NCERT.

NCERT (2000) *National curriculum framework for school education*. New Delhi.

NCERT (2004). *Global educational change*. New Delhi: NCERT.

UNESCO (1998). *Learning: the treasure within (Report to UNESCO of the International Commission on Education for Twenty-first Century)*. Paris: UNESCO.



Questions for critical reflection

1. Visualize a National System of Vocational Education at school level and list out the support systems required to make an impact on training of youth both in formal and non-formal settings?
 2. How can the quality of certification be improved by a joint certification programme of the Industry and the NIOS?
-

