India: Enterprise participation in training

by

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Preface

The trend towards market-oriented training systems gives an increasingly prominent role to the private sector. Enterprises, in particular, are expected to undertake a proactive role in training. Conversely, the traditional role of the State is evolving from government-led and government-owned training systems towards creating an enabling environment for enterprises and individuals, employers and workers, to invest and actively participate in a collective training effort.

Partnerships and strategic alliances between the interested parties have become the key strategy to improve the relevance, efficiency, effectiveness, equity and sustainability of training policies, systems and programmes. Training is increasingly conceived and promoted as a cooperative effort in which the various relevant institutions in the public and private sectors must participate and share responsibilities. Moreover, the partners concerned are being called upon to contribute to the overall training effort, and to articulate their inputs, making the best possible use of their respective strengths and comparative advantages.

In practical terms, only a few countries have set up a coherent systemic framework and appropriate incentives for these partnerships to flourish on a large scale. Nevertheless, there is already an assortment of innovative and interesting experiences throughout the world which offer options and lessons for promoting public/private alliances in training.

In order to capture the nature, range, and extent of innovations, the constraints faced and opportunities created by these partnerships, the Training Policies and Systems Branch (POLFORM) of the ILO undertook an extensive research programme “Strategic Training Partnerships between State and enterprises”. The work between 1995 - 1997 included case studies covering 26 experiences in 14 countries from various regions: Australia, Chile, Denmark, France, Germany, India, Ireland, Ivory Coast, Japan, Malaysia, South Africa, Spain, United Kingdom, United States. Based on these experiences, extensive review of literature and discussions on the subject at national and international levels, analytical, conceptual and policy papers were elaborated.

Preliminary results of the research programme were presented and discussed at numerous seminars and conferences including two major ILO regional meetings, one for Asian countries (“Asian Experiences in Strategic Partnerships between Enterprises and the State”, Chiba, Japan, December 1995, in collaboration with the Asian and Pacific Skills Development Programme, APSDEP), and one for Latin American and Caribbean countries (“Strategic Alliances in Training”, Santiago de Chile, May 1997, in collaboration with the Inter-American Research and Documentation Center, CINTERFOR).

The research programme also provided a contribution to the ILO Enterprise Forum (Geneva, November, 1996), on the theme “Training for Employability”.

The collection of papers produced under this research programme are listed at the back of this document as Training Partnership Papers. They are available in English, French and Spanish from the documentation service of the Employment and Training Department.

The results of the work accomplished in this area, and the experiences, concepts and messages conveyed, have raised considerable interest and contributed to demonstrate possible avenues for innovative ways of rebalancing the roles and responsibilities of the private and public sectors in training. Hopefully, the lessons learned from these experiences will contribute towards building trust and fostering cooperation between the two sectors, stimulating their participation and promoting the best use of their respective strengths in training. It should also help to lay the basis for improving awareness and institutional capacity for collaboration and joint ventures on
human resources development and training among a wider span of institutions and interested parties in the public and private sectors.

The variety and dynamism in this innovative and promising area is phenomenal and deserves an on-going effort in accumulating, analyzing and exchanging information, and raising debate at the country, regional and international levels. With this aim, the scope of the programme on Strategic Partnerships in Training will be broadened in the coming years. Readers are encouraged to contact the Training Policies and Systems Branch for further exchange of information and experiences on this theme.

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1. Introduction

Ever since India achieved independence, the nation has been engaged in a process of planned industrialization. In order to bridge the gap of more than 200 years of stagnation, the country decided to achieve industrial development through five-year plans. But industrial development does not occur by itself. A multitude of other socio-economic problems have to be solved before any tangible results are achieved. The most extensive of these problems is that of human resources development. It is much easier to build steel plants, construct dams and bridges and manufacture ships and aeroplanes then to develop human beings, which requires a long process of education and training that is both time-consuming and arduous.

One of the earliest national training programmes was the Craftsmen Training Scheme for semi-skilled and skilled workers. Under this scheme, training is provided in Industrial Training Institutes (ITIs) in 42 engineering and 22 non-engineering trades. The duration of courses varies from one to two years. ITIs are set up both by the respective state governments and by private agencies. As state finances are becoming scarce, more private agencies are setting up private ITIs. Of the total number of 2,720 industrial institutes about 1,700 have been established by private agencies and over 1,000 by the various state governments. They have a total training capacity of 450,000.

With the changing needs of industry, the skills developed by trainees in the ITIs were not adequate and a great need was felt for on-the-job training. The Apprentices Act was therefore adopted in 1961 with a view to meeting the requirement for skilled workers in industry. The Act makes it obligatory for employers in both the public and private sectors to engage a prescribed proportion of apprentices. The duration of training for apprentices varies from six months to four years, depending on the trade.

In the case of trade apprentices, training consists of basic training followed by “on-the-job” or shop-floor training with related instruction throughout the period of training.

During the whole period of training, apprentices are paid prescribed stipends. Enterprises employing more than 500 employees cover all the expenditure for apprenticeship training, including the stipend. For enterprises with fewer than 500 employees, expenditure for apprentices is shared between the concerned government and the enterprise. The cost of instruction is reimbursed to enterprises which provide it themselves, or is covered by the relevant government at its own cost. An apprenticeship contract is registered containing the obligations of the employers and apprentices. After the completion of training, a trade test is conducted for trade apprentices and the National Apprenticeship Certificate is issued to all apprentices who pass the test.

The basic training is the same as the training provided in ITIs. Enterprises which do not wish to recruit trainees educated in ITIs, take on “fresher” apprentices and set up their own basic training centres (BTCs).

The above are the main components of the National Vocational Training System (NVTS). However, the following programmes also form part of the system:

- the craft instructors training programme;
- the advanced vocational training system;
- part-time training for industrial workers;
- supervisory training;
- training programmes for women, persons with disabilities and weaker sections of society, including ex-servicemen; and
- staff training and research programmes.
All India skills competition for craftsmen and apprentices

To foster a spirit of competition amongst trainees in the various ITIs, the all India skill competition for craftsmen was started in 1964. The winners in the various trades at the state level take part in regional competitions and thereafter in the all India skill competition. The best craftsmen at the all India level are awarded a merit certificate and a cash prize of Rs.6,000 each. An ITI whose trainee comes first in the competition at the national level is declared the best for that trade and is awarded a merit certificate. The state whose trainees secure the highest total marks in all the trades is declared the best and is awarded a merit certificate and a President’s shield. Regional and all India skill competitions are also conducted for apprentices. The winners are given cash prizes and merit certificates and the enterprise whose apprentices secure the highest marks is declared the best all India enterprise.

Restructured system for craftsmen training

With a view to making the training system more responsive to the rapidly changing needs of the labour market and enhancing the mobility and efficiency of the system, modular programmes have been introduced in four model ITIs. Their programmes consist of a one-year broad-based basic training module, followed by specially designed modules for the specific trade group during the second year. The number of modules for each trade in the second year depends on the employment potential in the various specialized areas.

2. Enterprise case-studies

As a means of illustrating the manner in which apprenticeship training programmes are implemented in practice, the following three enterprises are examined:

— Motor Industries Company Limited (MICO) (Bangalore);
— Siemens India Limited (Andheri, Bombay); and
— Tata Engineering and Locomotive Works (Pune near Bombay).

The purpose of studying the implementation of the apprenticeship training programmes in these enterprises is that, although all the three enterprises are implementing the programmes in accordance with the statutory requirements, there are strategic differences between them. The principal differences are as follows:

C in the case of MICO, Bangalore, the number of apprentices engaged is precisely the prescribed number. In addition to apprenticeship training, the enterprise also provides training in multiple skills and about half of the apprentices are subsequently employed by the enterprise;

C Siemens India Limited trains double the prescribed number of apprentices. Half of the apprentices that it trains meet its own requirements and the rest are employed either by small-scale industry or by other medium and large enterprises. Many even take up employment in foreign countries. Both of the above enterprises take on only “fresher” apprentices;

C apprenticeship training at Tata Engineering and Locomotive Works (Telco) at Pune, near Bombay, is provided to more than the prescribed number of apprentices. Unlike the above enterprises, two-thirds of the apprentices taken on by Telco are “fresher” apprentices, while the remainder have been trained in ITIs. A comparison between the performance of both categories of apprentices shows that the apprentices trained by the enterprises for the full duration of their training period perform better than those partly trained in ITIs.

All three enterprises are implementing the Apprenticeship Training Scheme under the Apprentices Act as a partnership between the enterprise, the state government and the central Government.
The training schemes examined are in some of the most developing and strategic economic sectors in India and are in line with government employment policies. The training programmes also provide access to training and employment for rural populations, which would otherwise have been deprived of such sophisticated training. The training is provided with the objective of long-term economic development and could serve as a model for suitable adaptation. The training programmes are also designed to provide a sound basis for all-round skill development and knowledge for future supervisors.

2.1 Motor Limited Company (MICO), Bangalore

The Motor Limited Company (MICO) is located in Bangalore, a flourishing industrial city in southern India in the State of Karnataka. The enterprise’s principal products are fuel pumps for diesel engines, sparking plugs and other automobile components for virtually the entire Indian motor industry. It employs about 3,000 workers. Training is conducted in accordance with the Apprentices Act, 1961, and 30 apprentices are recruited every six months. The rates of stipend paid by the company are slightly higher than those prescribed under the Act. Training is conducted for a period of three years, except for apprentices in tool and die making, for whom the training period is four years.

The level of training provided by the enterprise is very high. Its special features are:
- continuous monitoring of the progress of trainees through periodical tests;
- special preparation for regional and all India skill competition;
- special coaching for weaker apprentices;
- a multicraft approach;
- additional inputs, such as hydraulics, pneumatics and metrology; and
- extracurricular activities, such as sports, cultural fora and fine art activities.

Since the inception of its training programme at the beginning of the 1970s, the enterprise has won 45 gold medals, 103 silver medals and 179 bronze medals and been declared the best all India enterprise. The enterprise has the distinction of a 100 per cent pass rate, as compared with 37 per cent by Karnataka State. The average number of apprentices is 175 at any given time. Of the 1,284 apprentices trained so far, 500 work in the enterprise and the rest are either in other enterprises or have gone abroad.

The extent of the partnership between the state and the enterprise in the implementation of the training programme is only that the state prescribes all the training standards, conducts the final test and carries out formal monitoring. The delivery of the training is entirely carried out by the enterprise. The enterprise bears all the cost of training. MICO only provides training to the minimum number of apprentices prescribed by the Act.

2.2 Siemens India Limited training centre (Andheri, Bombay)

The story of Siemens in India began in 1867, when Werner Von Siemens personally supervised the laying of the first telegraph line between Calcutta and London. Thereafter, the cooperation between Siemens and India continued and the enterprise has played an active role in the technological progress achieved over the past three decades. Siemens India Limited now manufactures a wide variety of electronic items, such as switch gears, panel and switch boards, drive mechanisms and automation systems, control equipment for power projects and transport, communication and medical electronics equipment. It has four plants in and around Bombay and set up a vocational training centre in 1964 at Andheri, Bombay.

The training centre currently has 140 apprentices, compared with the prescribed number of 77. The reason for this excess capacity is so that other medium and large enterprises with no basic training centre, as well as small industries with no training facilities can also have well trained
workmen. The enterprise has broad social objectives and considers the training as a service to other industries, to its suppliers and to clients, in addition to training workers for its own needs.

The enterprise advertises in leading local newspapers for candidates for the apprenticeship programme. Candidates have to sit a written test, followed by a personal interview and medical examination. The candidates are not selected for a specific trade straightaway. For the first month, the attitude, aptitude and performance of trainees is monitored and a specific trade is then allotted, taking into consideration their merit in the written test, their interview and their performance during the first month. The trainees are paid a stipend throughout the period of training. The enterprise gives due consideration to young people coming from rural areas and weaker sections of society.

The duration of training is three years, except for apprentice mill-wright mechanics, for whom the training period is four years. Basic training is imparted to all apprentices during the final year, during which period trainees are given basic training in the main trade and in allied trades.

During the second year of training, the apprentices undergo in-plant training and are rotated from one production shop to another, with work experience on the shop-floor on different jobs. During this period, the apprentices come into contact with other workers. Their work is supervised by production supervisors and their progress monitored periodically by supervisors from the training department.

During their third year, the trainees carry out various types of jobs in the training centre. These jobs are taken from the factory site. Their value is calculated as a gain to the training department. The jobs are taken on as project work and each trainee or group of trainees is required to perform a certain number of projects during this year, with due emphasis being placed on the quantity and quality of the work produced. By way of illustration, the trainee electronics mechanics designed and manufactured an electronic trainer, which is now being produced in large numbers in the training department and is being marketed to all other training centres throughout the country.

Although there is a minor drop-out rate during the course, apprentices who complete their course have achieved a constant 100 per cent pass rate, compared with no more than 50 to 60 per cent in the state institutes.

The enterprise only absorbs half of the apprentices that it trains. The rest are employed in large and small-scale industries, take up self-employment, work abroad or even change their career.

The enterprise has so far won 16 gold medals, 32 silver medals and 84 bronze medals in all India skill competitions in different trades. On four occasions it has been declared the best enterprise in the country and seven times as the regional best.

Future training

The Siemens training centre is planning the following future activities.

- Vocational training centres. In view of the training centre’s long experience of training apprentices, it now plans to set up vocational training centres in different units of Siemens on similar lines. The planning and setting up of such centres will be exclusively carried out by the training centre at Andheri, Bombay, where the involvement of supervisors and trainees will be of a great significance.

- Development of training equipment. A large number of audiovisual aids and sophisticated trainers are required in each trade. Siemens training centre has taken up the design and development of different types of working and non-working models and sophisticated trainers. One such trainer has already been developed for the training of electronic mechanics and has reached the commercial production stage.
Training in advanced skills. The training centre is imparting advanced skills in various trades.

Training in a group of skills. The concept of multiple skills is gaining ground very rapidly throughout the world. In view of the globalization and liberalization of the economy, workers who are trained exclusively as turners, machinists or electricians will become outdated within a few years of their initial training. Trainees are therefore being provided with multiple skills in order to make it easier for them to upgrade their skills and knowledge in their respective fields as and when the demand arises in view of changing technology.

2.3 Tata Engineering and Locomotive Works (Telco), Pune (near Bombay)

Telco at Pune is a very large enterprise and part of the total industrial empire of the Tatas, the well-known Indian industrialists. They had previously established a large undertaking under the same name at Jameshedpur in Bihar, in the eastern part of the country, for the manufacture of 15-20 tonne commercial trucks in collaboration with Daimler-Benz. The agreement with Daimler-Benz is now over and the enterprise is now therefore an independent indigenous organization. Another large plant has been established at Pune for the manufacture of the following transport and passenger vehicles:

- 10-12 tonne transport trucks;
- the Sierra passenger vehicle; and
- the Summo passenger vehicle.

All the above vehicles are of indigenous design and are being manufactured by the enterprise.

The training programme covers two categories of apprentices. The first category consists of fresher apprentices, whose training period lasts three years, or four years for tool and die making apprentices. The second category consists of students trained at ITIs, who are provided with further training for one or two years, depending upon the trade. The training undergone by trainees in ITIs is deducted from the total period of their apprenticeship.

The training of category one apprentices commences with three months' training in foundation skills, during which time the apprentices work on workbenches and complete carefully designed exercises. They learn the manipulation of hand tools, the use of measuring instruments and, through practice, develop coordination and control. They are then given a four-month course of principal skills, in which trainees are given specific skill-building practice through graded trade exercises. A thorough and careful evaluation of individual performance is carried out at every stage.

The third phase of the course lasts five months and is based on a modular system covering allied trades, such as turning, milling, grinding, welding, carpentry, basic electricity and electronics, motor mechanics and sheet-metal mechanics. This provides apprentices with a broad base of allied skills, which promotes a high degree of flexibility and raises their level of proficiency.

During their second year, apprentices learn advanced skills in their own trade, with emphasis on the latest technology. Trainees are also exposed to real assignments, including production jobs. Finally, during their final year apprentices work on the shop-floor and are provided with on-the-job training. The final phase of the course is devoted to the consolidation of skills in a typical shop-floor working environment.

Throughout the period of training, related instruction is provided in such subjects as trade theory, workshop calculation and science, engineering drawing and social studies. This instruction is conducted at the training centre, although its cost is reimbursed by the state government.
Aptly 33 per cent of the apprentices have received training in ITIs. They are taken on only for the remainder of their training period and follow only the final year of training, namely shop-floor training, including the related instruction.

The quality of training at the training centre is very high and the performance of both categories of trainees is very good. It should be noted in this respect that the performance of trainees who undergo the full apprenticeship is slightly better than that of trainees who join the enterprise after following training courses in ITIs, which shows that the delivery of training by the enterprise is better than by the ITIs managed by the Government or private agencies.

Apprentices trained by the enterprise have performed well in the all India and regional skill competitions. They have been declared the best apprentices in their respective trades on 20 occasions at the national level and on 48 occasions at the regional level in the all India and regional skill competition respectively. The enterprise has also been declared the best enterprise seven times each at the national and regional levels.

The enterprise is in a phase of rapid expansion and all the apprentices who complete their courses successfully are provided with employment, unless found unsuitable on some other ground.

2.4 Training and retraining of instructors

The Directorate General of Employment and Training of the Ministry of Labour has set up a central training institute at Madras, as well as five advanced training institutes, in which training programmes are conducted for instructors. The three enterprises covered by the case-studies employ former apprentices who have secured distinctions as instructors, once they have been trained at either of the above institutes. Retraining programmes for these instructors are also conducted at the above institutes. Refresher training programmes for training executives of the training centres of all enterprises are conducted at the Central Staff Training and Research Institute, Calcutta. Some of the instructors have also been trained in Germany.

2.5 Roles of the State and enterprises in the training partnership

The apprenticeship training programme in India follows similar lines to the dual system of vocational training in Germany, with the State and enterprises both playing their roles. The Apprentices Act, 1961, prescribes the rules and the sharing of roles between the Government and enterprises, although the extent of the involvement of enterprises may vary, as illustrated by the three cases studied above. The delivery of training in the case of MICO is mainly by the enterprise, with only trade testing and monitoring being carried out by the State. In the two other cases examined, the State plays a more significant role.

Role of the Government

Training delivery is totally by the enterprise under the Apprentices Act, 1961. However, the following functions are performed by the state or the central Government in the implementation of the apprenticeship training scheme:

- development of legislation and policy under the Apprentices Act, 1961;
- provision of loans by state governments, for the setting up of training centres, where so required by the enterprise;
- the expenditure incurred by the enterprise in the training of apprentices is 100 per cent exempted under the Income Tax Act;
- the central Government also reimburses 50 per cent of the cost of training for graduates, diploma holders and technician (vocational) apprentices; in addition, 50 per cent of the cost
of training for fresher trade apprentices is also reimbursed by the concerned government in the case of enterprises with fewer than 500 employees in total;

Curricula for the different trades under craftsmen and apprenticeship training schemes are developed by trade committees appointed by the Directorate General of Employment and Training;

Refresher training/retraining for instructors at training centres is carried out at the advanced training institutes of the Directorate General of Employment and Training: courses for officers are provided at the Central Staff Training and Research Institute, Calcutta: quantitative and qualitative inspection/monitoring of the training programmes conducted by the enterprises is carried out by the respective governments;

After completion of training in enterprises, all apprentices are trade tested by the Directorate General of Employment and Training and National Apprentice Certificates are issued to all apprentices who pass the test;

The cost of theoretical/related instruction carried out by the enterprise is reimbursed by the respective governments; and

Exemption of customs duty for training equipment is granted on the recommendation of the Directorate General of Employment and Training.

Role of enterprises

Apprenticeship training programmes in industry were made statutory by the Apprentices Act, 1961, under the terms of which each enterprise is required to train a certain number of apprentices. This involves the following:

The delivery of basic training and practical training for apprentices in the industry by the enterprise, with the whole cost borne by the enterprise;

Appointment of experts from these training centres as members of the curriculum committee at the national level to draft the curricula for the Craftsmen and Apprenticeship Training Programme;

Appointment of experts from these training centres as examiners and paper setters for the Craftsmen, Apprenticeship and Instructor Training Programmes;

Appointment of the experts from the training centres as members of advisory committees, such as the Central Apprenticeship Council, the National Council for Vocational Training, the State Apprenticeship Council and the State Council for Vocational Training, as well as advisory committees of ITIs and Advanced Training Institutes; and

The syllabus prescribed under the Apprenticeship Programme constitutes a minimum and the enterprise can train apprentices in higher skills.

2.6 Central structures

The Central Apprenticeship Adviser in the Ministry of Labour is the principal official responsible for the implementation of the provisions of the Apprentices Act and the rules issued thereunder. The Apprenticeship Training Programme for trade apprentices in central sector enterprises and departments is directly administered by the six regional directorates of apprenticeship training, which come under the direct control of the Central Apprenticeship Adviser. The training of trade apprentices in private and state enterprises is administered by the respective state Apprenticeship Advisors, who are also responsible for craftsmen training in the respective states. The implementation of training for graduate engineers, diploma holders and technician (vocational) apprentices is administered by four regional boards of apprenticeship training, under the control of the Ministry of Human Resource Development.
3. Conclusions and recommendations

It is very important for developing countries such as India to improve their productivity if they are to compete successfully in an era of rapid technological and economic change. This requires not only heavy capital investment, but also the acquisition by the workforce of new skills for emerging jobs. The level of competence of skilled workers and technicians in a country is very important for the productivity of the labour force. This raises enormous challenges for the Government, employers and coordinating agencies for the development of an appropriate training system. It is also necessary for employers, if they are to be successful, to play a more active role in implementing training programmes.

Until recently, training was considered to be mainly a pre-employment strategy. Once trained prior to employment, the education and training acquired was enough to earn a livelihood throughout a worker’s life. This approach had the advantage of keeping training costs low. However, this situation has changed considerably and workers risk obsolescence if they do not renew their skills. In these circumstances, training therefore has to be based on an appropriate level of education which can provide a solid base for further training.

As a result of the increased liberalization and globalization of the Indian economy, competition is at both the national and international levels. Workers have to be trained in such a way that they are productive enough to meet the challenges of changing technology and the globalization of the economy. Training therefore needs to be both efficient and responsive to changing needs.

The above factors have created the following implications for the training system:

- The need for an increased knowledge base;
- A need for multiple skills;
- The training programme should be compatible with emerging technologies and changing processes;
- In the case of rapidly changing technologies, such as electronics, in which knowledge rapidly becomes obsolete, fast-cycle retraining is needed for the workforce with an appropriate training infrastructure at all levels, with retraining as a regular activity;
- The development of new technologies will require greater generic skills, which are normally acquired through a higher level of formal education;
- As a result of technological restructuring, the future workforce will consist of larger proportions of higher level scientists and engineers and an equal proportion of skilled workers and operators at the lower level, with a correspondingly smaller proportion of middle-level supervisory, technical and secretarial staff. In addition, at the craftsmen level, the training programme should put greater emphasis on knowledge-based skills than manipulative skills.

3.1 Weaknesses of the NVTS

The NVTS in India has evolved over the past four or five decades. Even though certain changes have been made, weaknesses have nevertheless crept into the system.

Inadequate private sector representation

Although in theory the National Council for Vocational Training, the Central Apprenticeship Council and other bodies at the central and state levels are tripartite, industry representatives are out-numbered by officials. Moreover, the State Council for Vocational Training and the State Apprenticeship Council, as well as many other official bodies, have not been functioning very effectively. As a result, the desired close links with industry have not been maintained.
Total government control over the training programme

Because of the dearth of industry in the country after independence, the whole NVTS has been developed largely by the Government. The participation of industry has tended to be only bureaucratic in nature. As a result, the system has lacked flexibility, efficiency and the ability to change.

Poor coverage of the active populations

The NVTS is designed to provide semi-skilled and skilled labour to the organized sector of Indian industry, which means that the system is confined to about 10 per cent of the total economically active labour force, since two-thirds of those employed outside agriculture are in the informal sector. Although the system produces about 450,000 trained persons from ITIs and 140,000 annually from the apprenticeship system, this is only a small percentage of the total workforce seeking employment each year.

Lack of adequate facilities for efficient and effective training

The lack of adequate training facilities and instruction materials in regional/local languages, combined with inadequacies in the quality and quantity of training staff, prejudices the value and quality of the training provided. Moreover, even though retraining facilities are available for instructors, they are not used adequately. There is also a serious shortage of basic training and related instruction centres. As a result, fewer than 500 apprentices have been taken on in about 90 of the 132 trades for apprenticeship training. The numbers of apprenticeships have therefore stagnated at around 140,000 over the past decade.

Lack of reliable data

Despite the efforts of the Directorate General of Employment and Training to compile information on training matters, there is no standardized information system and no reliable database is therefore available as a basis for scientific corrective action.

As a result, curricula are generally old and do not fully meet the changing training needs of industry. Moreover, the training needs of industry are not regularly and scientifically assessed with a view to meeting skill requirements.

Lack of modern trade-testing facilities

Despite recommendations that trade testing and certification needs modernization, the necessary measures have not been taken. In addition, expansion has been too rapid and all trade tests throughout India are conducted centrally from New Delhi, with the result that there is a lack of proper monitoring and even, in some cases, the desired objectivity.

Inadequate follow-up for employment

When employment opportunities are available in the establishment in which the apprentices have been trained, they find it easy to obtain employment, as in the case of all three enterprises examined above. However, in other cases, apprentices have to seek employment themselves without assistance from the enterprises in question or government agencies.
3.2 Strengths of the NVTS

Despite the weaknesses and deficiencies mentioned above, it should also be acknowledged that the system has the following strengths.

Contributing to the stock of skilled labour

The schemes operated under the NVTS have played a significant role in building up the stock of semi-skilled, skilled and highly skilled workers. Over the past four decades, a network has been established of about 2,720 industrial training centres and about 16,000 establishments participating in trade apprenticeship training programmes, with a capacity of about 450,000 trainees and 140,000 apprentices. The system has also helped a large number of young people to find suitable employment, both in India and abroad.

Promotion of innovation

The system has promoted innovation to meet emerging requirements. Illustrations include six advanced training institutes in mechanical trades, two in electronics and process instrumentation, two foremen training institutes, 14 regional vocational training centres and one national vocational training centre for women set up under the auspices of the Directorate General of Employment and Training.

National coverage and credibility of the system

It is important to note that the system covers the whole of India. On the basis of prescribed standards and related measures, the system aims to ensure the homogeneity of training and facilities and, as a consequence, the mobility of labour. The nationwide coverage of the system contributes not only to national integration, but has also given the system a desirable credibility.

International recognition

India's involvement in vocational training has received international recognition. The National Apprenticeship Certificate is recognized as a qualification in countries such as Australia and New Zealand. A large number of trainees from other countries come to India to receive vocational training under the Colombo Plan and ILO fellowships.

Recommendations

There is broad consensus that appropriate measures need to be taken to strengthen and develop the NVTS so that it deals more adequately with the mismatch between skill requirements and employment opportunities; the low levels of technology, productivity and wages; the occupational shift from artisans to unskilled employment in agriculture; unemployment due to seasonal factors and the excess of labour supply over demand; and the migration of the labour force from rural to urban areas.

The strategies envisaged to address these problems include: reforming the training system so that it can respond rapidly to changes in labour market demand; reorienting skills to suit labour market requirements; upgrading skills; and promoting self-employment.

In particular, the following improvements are required.

Reorganization of the management structure of the NVTS

In place of the present National Council for Vocational Training, a statutory autonomous body should be created under the Ministry of Labour with adequate powers and infrastructure to frame policies, lay down standards, plan, coordinate and manage the NVTS, more or less along
the lines of the All India Council for Technical Education. It should include: a statutory board to regulate the functions of affiliation/de-affiliation; a statutory board to frame policies and standards for apprenticeship training; and a statutory trade testing and certification board, with a regional structure, to conduct all India trade tests and award certificates.

All the central government institutes currently functioning under the Directorate General of Employment and Training should be converted into autonomous registered societies, preferably under a central Act, to make their functions more effective and efficient. The institutes can be divided broadly into two categories:

— Nodal institutes: including a nodal institute for curricula, media and trade test development; a nodal institute for research and policy advice, central information, documentation and the training of executive staff; and a nodal institute for instructor training, which would develop standards, curricula and training materials for instructor training.

— All other institutes: such as advanced training institutes, foremen training institutes, regional directorates of apprenticeship training and women's training should be converted into autonomous institutes, grouped either under a single society or a number of societies; state directorates of training should also be converted into registered societies or autonomous bodies.

— Craftsmen training scheme: it is necessary to ensure stricter control over the affiliation of programmes and better monitoring, especially for private institutions, with periodic inspection and evaluation of their programmes. Technical audits and evaluation should be revised for all training institutions, including those which operate under the auspices of the Directorate General of Employment and Training.

Apprenticeship Training Scheme

The Apprentices Act should be reviewed and amended immediately to eliminate some existing loopholes and ensure more direct involvement by industry and a better sharing of the vocational training burden. A provision should be included that half of the direct recruitment vacancies in industrial enterprises should be reserved for successful trade apprentices. Enterprises should also be required to engage suitably trained supervisory staff to ensure high-quality shop-floor training. In addition, more basic training centres and related instruction centres should be established under the state and central sectors and grants should be provided to enterprises to start their own basic training centres.

Special training facilities for women and disadvantaged social categories

Special efforts should be made to respond to the training requirements of women and increase their participation by strengthening existing institutes or establishing new institutes. More incentives should be given to women in the form of stipends and scholarships. More women should be appointed as instructors and the participation of women at the decision-making level should be increased. In addition, more training opportunities should be provided for persons with disabilities in general institutes and more vocational rehabilitation centres should be established.

Enhancement of institute-industry linkages

Both public and private institutes and centres should establish firm linkages with industry through advisory bodies, the retention of industrial workers, the secondment of instructors from training institutions to industry for practical training, the invitation of guest speakers from
industry to deliver lectures in institutes, the involvement of industry in the development of curricula and the preparation of training materials.

In addition, the evaluation and monitoring of training programmes in institutes and industrial establishments should be carried out regularly by committees consisting of competent experts in the public and private sectors.

Updating curricula and training materials

The curricula for all designated trades should be scrutinized and updated at the national level in consultation with the industry on a regular basis. An analysis should also be carried out of the modular courses that have been introduced on an experimental basis as a basis for the introduction of such courses as required. In addition, training packages for all trades should be made available and translated into regional languages.

Information and documentation

Information should be completed and disseminated more effectively between the various types of vocational training institutes. Efforts should also be made to build up an information management system based on a comprehensive national survey of ITIs and industry training centres.

Physical and financial resources

The vast majority of instructors, who are either untrained or were trained many years ago, should be given appropriate training or retraining. The possibility should also be examined of introducing distance learning, as well as collaboration with other institutes, such as open universities. A formal standard curriculum for the training and refresher training of instructors should be prepared on a priority basis. In this context, investment in vocational training should not be considered a social service, but an investment in the economic and industrial development of the country. Resources for vocational training should be mobilized through increased central/state budget allocations, raising fees and contributions from industry. Consideration should also be given to the establishment of a skill development fund along the lines of those set up in South-East Asian countries.

Skill competitions, trade testing and certification

The present system of trade testing and certification is totally outdated and should be completely modernized by the introduction of objective questions, the establishment of question banks, the use of computers for analysing and tabulating test results and the adoption of modern techniques for sealing envelopes and counting question papers. Question papers should be made available in regional languages. The participation of industry should also be increased through the organization of more all India skill competitions in collaboration with the various industries or their associations. In general, industry, its associations, professional bodies and trade unions should play a role in conducting final trade tests for apprentices, craftsmen and other categories.