5. LEAD PAPER

PARTNERSHIP: THE NATIONAL FRAMEWORK

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WORLD PERSPECTIVE OF APPRENTICESHIP

Historical Background

Apprenticeship is one of the oldest social institutions; its origins are lost in the mists of time. From time immemorial, every master craftsman, builder, sculptor, weaver, metal worker has had his own apprentice to whom he has passed the knowledge and skill of his craft. In the mediaeval period in Europe, apprenticeship was formalized and became the normal method of entry to a craft guild. A boy was "bound as apprentice" to an established member of the guild, who undertook to teach his craft to the apprentice. In addition to the transmission of knowledge and skill, the master undertook to supervise the moral welfare of his charge, to provide him with food, lodging, clothing, medical attention, and "all other necessaries". In return for these considerations, the apprentice was legally bound to serve his master for a period of seven years, and in most cases received little or no wages. The typical master craftsman of the middle ages had his workshop attached to his dwelling house, and the apprentice usually lived with his master's family. The period of apprenticeship was followed by several years as a journeyman when he received small wages. Eventually, he started his own business, became a member of a craft guild, engaged his own apprentices as his master did, and completed the loop.

The Industrial Revolution brought in the factory system which was to have far-reaching effects on social change in Europe. One such change was that the firm traditions and controlled training systems of the European guilds broke down. Training in the crafts was disorganized; in industry and commerce, it was left to chance and paternal tradition. Shortages of skilled labour developed because of neglect of training and of emigration overseas.

It is in this climate that the reform movement started and the fundamental structure of modern apprenticeship began to take shape. One feature of the reform movement was that benefits in kind were replaced by wages, at first payable to the parent or master. The deed or contract of apprenticeship embodying the terms and conditions was executed by the two contracting parties, the employer, and the apprentice and his guardian; but the contract was purely voluntary on both sides. A second feature was that the trade unions filled the vacuum left by the waning influence of the old craft guilds and started exerting their influence on the conditions of employment of apprentice. The introduction of the third element in the form

of trade unions into the apprenticeship system was to have a far-reaching influence on the craftsman's competitive position in the labour market on the one hand, and on the other, on industrial relations. A third was that the increasing application of science and technology to industry led to greater complexity of organization of production and in the job structure of industry. As a sequel, many traditional crafts were de-skilled and new specialized skills were demanded. The latter in turn required of the apprentices a higher level of educational preparation and adaptability to technological changes. The result was that the age of entry into apprenticeship rose, and training on the job was reinforced by instruction in technical institutions. The establishment of Mechanics Institutes, for instance, catering primarily for apprentices on a part-time basis was a significant development. The apprenticeship schemes specifically provided for day-release or block-release of apprentices to attend technical institutions.

All these fundamental changes notwithstanding, apprenticeship has remained over the centuries the main source of skilled manpower for industry. It is essentially a "contractual relationship between an employer and a worker under which the employer is obliged to teach the worker ... and... the worker is to serve the employer... on stated terms".* Apprenticeship is thus a matter between two parties and consists of two elements, the reciprocal obligations between an employer and his apprentice. The document setting out the terms of the agreement came to be known as an "indenture" because of "the practice of writing out two copies on one sheet of parchment which were torn apart on signing, one copy being held by the master, the other by the apprentice". Traces of this custom may be found in the 19th century indentures where the upper edge is cut to a wavy or serrated shape.**

Development of Modern Apprenticeship

The years between the two World Wars witnessed other basic changes in apprenticeship throughout Europe, including the United Kingdom. Social reforms led to varying degrees of state control over apprenticeship through legislative enactments. For instance, new Apprenticeship Acts were introduced in Denmark (1921), France (1915), the Netherlands (1919). The Weimar Constitution in Germany (1919) made specific provision for the part-time education of all young persons below 18 working in industry.

The increasing application of science and technology to manufacturing shifted the focus of the skills in industry from the shop-floor to the design office, development department, production planning department, testing and quality control sections, costing and estimating office and ultimately to management. The shift demanded a wide spectrum of technical and professional personnel - technicians, engineers, production specialists, managers and so on. All these personnel needed to be trained and equipped with practical experience and knowledge of their specialities. The concept of apprenticeship, therefore, extended beyond the training of craftsmen and assumed new dimensions covering a wide spectrum of professional workers for industry. The technical education system in different countries of Europe responded to the shift and reinforced practical training in industry with a variety of part-time, day-release and evening courses which helped apprentices at different levels to acquire recognized qualifications. A notable example of the response is the further education facilities offered

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* Apprenticeship 1925

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by technical colleges in Britain, the courses and examination for technological certificates conducted by the City and Guilds Institute of London and the National Certificates instituted by the British Ministry of Education. The well-known sandwich courses in which a student spends stated periods in industry and in a technical college in alternate layers is another fine example of co-operation between industry and education. (The system of sandwich courses developed in a big way only after World War 2.)

After the Second World War, apprenticeship developed all its present characteristics as an organized system of education within industry and started playing a more decisive role in economic development processes. The years of post-war reconstruction witnessed acute shortages of skilled labour, including engineers, technicians and managers. Even in the conventional commercial fields, the demand for clerks, accountants, secretarial assistants, office machine operators, etc. grew in a big way. All these requirements could be met only by expanding apprenticeship and improving its quality and standards.

Several other factors also influenced the pace and direction of the process of apprenticeship both in developed and in developing countries. Foremost among them was the direct intervention of state authorities through legislation to ensure that apprenticeship did not become a convenient cover for the exploitation of cheap labour and that the training was conducted under controlled conditions according to well determined standards and procedures. Next, social reforms led to equalization of educational opportunities, and the economically weaker sections of society started receiving increasing access to higher education. Rising income made it possible for parents and youths to forgo the short-term advantage of taking up jobs without training directly after leaving school. Apprenticeship came to be regarded as the transition of adolescents from full-time education to adult work through a predetermined period of training in employment. Third, the increasing size and complexity of industrial organizations and rapid advances in technology gave a new dimension to apprenticeship. In addition to the traditional craft apprenticeships, technician student, graduate and commercial apprenticeships became common. Lastly, new training methods and techniques reinforced by off-the-job preparatory training at separate vocational centres shortened the actual period of apprenticeship and improved the quality of the manpower trained.

With a long unbroken tradition, apprenticeship today has become the principal means of providing technical and vocational education by utilizing the resources of industry. It is thus a part of both social and economic systems. Over the centuries, however, it has undergone basic changes in response to the forces of social and economic change in each country. We therefore see many patterns of apprenticeship throughout the world. There are different organizational arrangements for training, instruction and trade examinations, and different administrative frameworks of apprenticeship, including financing, in different countries. Considered in a world context, apprenticeship is a system in transition with new problems arising as existing ones are solved. Nevertheless apprenticeship is becoming firmer conceptually and more rigorous in practice. Even more important, it is elaborating, adjusting and adapting a centuries-old tradition to a modern technological world. All these differences and problems of transition notwithstanding, there are common characteristics which have made apprenticeship universally acceptable.

Common Characteristics of Apprenticeship

Apprenticeship is essentially a voluntary, contractual arrangement between

an employer and a worker under which the employer is obliged to teach the worker and the worker is obliged to serve the employer on stated terms. The system is generally regulated by administrative rules which are framed under apprenticeship legislation. The legislation generally provides for apprenticeship in all trades and occupations, indenture, minimum age for admission, duration of training, related instruction, mutual obligations of apprentices and employers final examinations, administrative machinery for supervision and control of apprenticeship, financing of training, and related basic issues. The participation of employers' and workers' organizations in the bodies set up to administer apprenticeship is an important feature of the system.

Apprenticeship is not confined either in concept or in practice to the training of skilled workers. Thus, the system includes, in addition to craftsman apprentices, students apprentices, technician apprentices, graduate apprentices and management apprentices.

Craftsman apprentices who constitute the bulk of trainees are, on average, between 15 and 18 years old and have eight to nine years of general school education. The period of apprenticeship varies from one to five years, but the median duration is three years. Consequently, most trainees complete apprenticeship at the age of 18 or 19 though this may be as high as 21 or 22 in some countries.

The normal feature of a well-organized apprenticeship system is that preparatory training in basic skills with associated instruction in mathematics, drawing and engineering principles is given to apprentices at separate vocational training centres before they are sent for on the job training on the shop floor. The vocational training centres are maintained by industrial firms, individually or collectively. In some countries the training centres are maintained by the state authorities.

As the period of compulsory full-time school is extended in many countries, so the proportion of apprentices, with secondary education is increasing. In addition, pre-vocational training at the school stage motivates young persons towards apprenticeship, rather than towards joining the active labour force immediately after leaving school.

The organizational structure of apprenticeship is based on a list of trades approved by public authorities or by collective agreements between employers and unions. The apprenticeable trades are further regulated by training standards, examination requirements and certification for skill competency. The number and description of apprenticeable trades may vary from country to country, depending upon the state of industry and commerce in each country and on the occupational pattern of the labour force. The present range is 100 to 500, which includes in addition to engineering or industrial trades, commercial, agricultural and personal service occupations. It is, however, axiomatic that the integrity of apprenticeship as the principal means of entry into a skilled occupation has to be preserved by revising the list of apprenticeable trades on a continuing basis in response to technical changes in industry and commerce. The system has to guard itself against the danger of obsolete and dead-end trades. It has also to overcome the resistance to changes in training techniques and regulations which may be put up by trade-oriented unions and guilds in their monopolistic practices.

Another important aspect of a continuous review of apprenticeable trades is the increasing tendency to limit narrower specialization and to emphasize skill areas that facilitate worker mobility within industry and widen the field of recruitment. In this process, many related trades are

being coalesced and made into a smaller number of composite fields of training. Further, there is an overall trend away from artisan trades apprenticeship towards training in the industrial trades and commerce.

Legislative provisions or administrative instructions regulate training in apprenticeship by laying down detailed job description, training programmes and examination standards for each trade. These regulations too are being revised and elaborated on a continuing basis to ensure improvement in skill competency in the light of changing technological needs. In addition, in most countries, the central training authorities concerned also provide to industry detailed training manuals, audio-visual aids and other training materials which are developed through extensive pedagogical research.

Apprenticeship is essentially training on the job. Those who decry the system parody it as "sitting next to Nellie" or "Jane learnt from Nellie and Nellie never knew". Although there is some force in the criticism in as much as the apprentice not only learnt what his master knew but also picked up his bad work habits, over the centuries the system has produced best craftsmen for industry. Nevertheless, it is being continuously improved and the two main directions in which improvement is being affected are:

(a) Part of the training is being moved out of the workshop or factory to separate training centres where practical and theoretical instruction could be given under controlled conditions and according to good pedagogical practices.

(b) Apprentices are being given regularly day release each week to attend a technical school to reinforce their shop-floor training with related theoretical instruction.

The commonest form of organized day-time instruction is for apprentices to attend classes one or one and a-half days or two half-days each week. A variant of the system is to give block release for several weeks each year for apprentices to attend full-time courses. As for the first reform movement towards separate training workshops for apprentices, particularly for engineering apprentices, the specific advantages claimed are:

(a) The training workshop, which is separated from the dangers and pressures of regular production or maintenance work, makes it easier for the apprentice to transfer from the school life to the active, working life or the adult.

(b) Certain basic skills can better and more systematically be taught under the close supervision of experienced instructors who apply modern didactic methods and use efficient teaching aids.

(c) Good working habits are learnt more easily in a training workshop than under the pressure of production.

(d) The production process in highly organized large undertakings (piece work and assembly production lines) leaves journeymen and foremen little time for taking care of the apprentice and teaching him. A young apprentice without basic skills and without at least rudimentary technical knowledge of what is going on, is likely to be a disturbing element in the production workshop.

Apprenticeship generally terminates with examinations for testing the trade competency or skill level reached by the trainees and for the award of certificates. The examinations may be at different levels as, for instance, a higher examination at the master craftsman level after a journeyman has had several years of additional experience in the trade and also undergone further technical courses. The City and Guilds of the London Institute system provides for three levels of examination corresponding to craft, advanced and full technological certificates. The last two can be equated to lower and higher technician positions. These are taken by "student" and other equivalent types of apprentices.

The examinations are conducted by different agencies in different countries depending upon the provisions of their respective apprenticeship legislation and the organizational structure of their apprenticeship system. Generally, the examinations are controlled by boards of examiners composed of representatives of industry or persons nominated by industry, public authorities, chambers of commerce and trade, and experts. A parallel arrangement for higher levels of apprenticeship is the membership examinations conducted by professional bodies as, for instance, the Institutes of Civil, Mechanical and Electrical Engineers in Britain.

In a number of countries, a national framework has been evolved for the organization and administration of apprenticeship, which is supplemented by regional, state and local bodies and authorities. This reflects a trend towards greater centralization of authority over the educational content of apprenticeship for the protection of youth in employment, and for ensuring that the technical content of training is adequate for the requirements of the industries and fields of economic activity concerned. As a sequel to various forms of central control by the state, the public authorities also share with the employers the cost of apprenticeship. The state's share generally includes the cost of part-time related instruction, basic and complementary practical instruction in full-time courses, preparation of training and examination standards, holding of examinations, and inspection services. The employer bears all expenditure on training within the undertaking, including the wages of stipends or allowances to apprentices.

All these and other characteristics which, in each country, have been influenced by educational changes, social legislation and trends in manpower policies, have given apprenticeship its basic vitality. The system today has not only preserved its traditional central position in the work-oriented education for out-of-school youth, but has expanded into new areas of economic activity. This is so, primarily because of the great flexibility of apprenticeship and because of its capacity to change. Despite the great volume of laws, regulations and agreements existing in each country, there is always considerable freedom of action permitting the employer and controlling authorities to adjust training plans and methods to new technical requirements and the demands of new groups seeking training.

CONTEMPORARY APPRENTICESHIP SYSTEMS: THE NATIONAL FRAMEWORK

United Kingdom

As the home of apprenticeship, Britain has witnessed several phases of evolution and development of the system, all of which are a part of British industrial and social history. The different phases which are of historical interest are:

(a) Guild Apprenticeship from the 12th century to 1563.

(b) Statutory Apprenticeship set up by the Statute of Artificers, 5 Eliz, 1563 and ended by its repeal in 1814.

(c) Voluntary Apprenticeship, from 1814 to 1964. In 1964 the more important and current phase started; the Industrial Training Act was passed by the Parliament and apprenticeship was brought under effective state control.

The main circumstances which led to the Apprenticeship Act are as follows. The post-war problems of British industry and society demanded large numbers of skilled manpower. This could be more effectively met at the national level only by organized and co-ordinated effort, instead of the traditional British way of relegating to employers the responsibility for preparing people for work. There was also widespread concern about the quality of training under voluntary apprenticeship, particularly the informal, on the job training called "Sitting next to Nellie". Many firms were poaching, that is doing no training themselves, but hiring away skilled workers from other enterprises. The Education Act of 1944 brought about a social revolution by equalizing educational opportunities and giving under-privileged sections access to higher education. This resulted, in the 1960s, in a big "bulge" in the number of 15 year olds and above leaving school and entering working life. This "bulge" compelled the state to accept responsibility for ensuring that the large numbers of young men and women at all ages leaving school had adequate opportunities of obtaining training for skilled employment.

The Industrial Training Act, 1964, is designed precisely to meet these special circumstances and introduces a number of entirely new principles in a century-old apprenticeship tradition. For the first time, the state takes a hand in industrial training, not just by offering classes for those released voluntarily by their employers but by imposing certain statutory obligations on industry. Second, it stresses the fact that training is needed by all in employment and not only by grades of highly skilled employers. For this purpose, an adequate quantity of training in industry should be secured in all occupations and at all levels. Third, it recognizes that preparation for work is an educational activity and that a large share of its organization and administration must therefore be borne by educationists. Fourth, it ensures that all firms which benefit from the employment of trained workers must share the financial burden of training.

The Act empowers the Minister of Labour, after consultation with the employers and workers concerned, to set up for each industry an Industrial Training Board consisting of representatives of employers' and workers' organizations and a certain number of educationists. The main functions of the Boards are to stimulate, develop, administer the finance training within the major industrial classifications. To this end, each Board has been given two statutory powers which have put "teeth" into the new system. First, the Boards are responsible for ensuring that every-body in an industry - from managers down to the lowest grade of worker - receives appropriate training. This does not mean that there is one pre-scribed training for all; on the contrary, the content and length of training must be related to the skills to be mastered. Second, each Board must impose a levy on every firm within its scope in order to meet the costs of training. It is entirely for the Board to decide the basis on which the levy is to be determined, and once the basis is approved by the Minister of Labour, each firm has to pay according to the levy prescribed by the Board. The Boards apply the income from the levy to training either within the

firms, wherever the firms have adequate training programmes, or at separate training centres. In the former case, grants are made to the firms after a careful appraisal of their overall training activities, including the expenditure incurred by them.

The levy/grant mechanism which is the crux of the new system has a two-fold purpose - to stimulate the quantity and improve the quality of training, and to equalize the costs of training among the various firms in an industry. Formerly, many training-conscious firms spent much time and money in training only to find their employees taken away from them by firms which did not bear the burden of training. Now the training costs are distributed equitably among all the firms. Since grants are paid only to those firms whose training conforms to the standards laid down by the Boards, the Boards must make recommendations regarding the nature, content and length of training for which they will be prepared to pay. There is no compulsion on any firm to train workers, but those that do not will still have to pay the levy and will have no grant to put on the credit side. This acts as encouragement to smaller firms to group themselves together so as to offer an adequate joint training scheme.

The levies have been set in various ways. The Engineering Board, for instance, has set its levy rate at 2.5% of the total pay-roll, choosing this figure partly on the basis of the surveys of the actual costs of training already taking place, and partly on the basis of the calculated "stock value" that this levy may have in making firms "sit up and take notice". Most levies are now set as a percentage of pay-roll, with the rates ranging from 0.35% in electricity supply to 3.8% for British Air carriers, the rates varying with size and with industrial classification and occupational factors.

The other activities of the Industrial Training Boards are complementary to the levy/grant mechanism. These include publishing of training recommendations, conduct of training centres set up by individual boards, development of educational programmes in co-operation with technical colleges and universities, and conducting or supporting research and providing advisory or consultancy services. For instance, the Engineering Board has developed a modular system of training apprentices which has had the widest impact and has been adopted by several other Boards. According to the modular system, apprentices in all engineering trades take their first year of module in common, covering such basic concepts as blue-print reading, shop mathematics, tools and materials. After the first year, apprentices in individual crafts pass through various combinations of modules meeting the requirements of each particular trade. Some of this training may be performed by individual firms (especially in years two, three and following); some (typically the first year) is likely to be carried out off the job at a training centre, often operated by groups of firms co-operating in this effort. The modular system has produced better trained craftsmen in less time, typically four years rather than the traditional five years.

By 1969, 30 Industrial Training Boards had been set up under the Act which through levies covered about 850,300 establishments employing over 15 million workers out of a labour force of 25 million. The cumulative growth of the Boards from 1964 to 1969 is given in the following table:

Table 1: Cumulative Growth of British Industrial Training Boards
(Figures as of 1969-1970)

Boards Established		Establishments (Cumulative	Employees (Cumulative	Levies (Cumulative
Year	Number	Total)	Total)	Total)
1964	5	82,252	5,472,000	109,631.000
1965	6	91,960	6,564,000	123,592,000
1966	7	334,957	8,931,000	131,012,000
1967	5	346,604	10,681.000	142,012,000
1968	5	800,301	14,783,000	158,892,000
1969	2	850,301	15,323,000	159,162,000

Source: BACIE, Progress Report No.5 (October 1970). As of the date of this report, 30 "Boards" had been established including Hairdressing (terminated in 1971); Foundry, (a committee of the Engineering ITB); and Local Government, (a voluntary programme under the Act and so not listed by the Government in the source for Table 1).

The main achievement of the Boards has been in creating a new climate of interest on the part of management. By direct persuasion, by stimulation of management training, and through the financial implications of the levy/grant system, they have done much to improve training in British industry, both quantitatively and qualitatively. The Industrial Training Act has been aptly described as "a part of continuing manpower revolution, an effort shared by the Government, Industrial Training Boards, technical colleges, universities, consultants and industry itself".

The British apprenticeship system is also distinguished by a variety of training from the craftsman to technologist. This distinguishing feature is represented schematically in Table 2.

West Germany

The tradition of European apprenticeship was established in West Germany where the system started in the middle ages and underwent several changes under the impact of industrial development. The customary indenture of an apprentice to a master craftsman, practised for centuries, was unable to satisfy the steadily increasing demand for better and more skilled workers. The larger and more progressive industrial enterprises took the initiative and began to employ apprentices to assist specialists on certain jobs, thus giving them the opportunity of advancing gradually towards becoming skilled workers. There was, however, no prescribed duration for apprenticeship, nor were there any well defined standards of training. The enterprises were free to terminate the training of an apprentice by holding an internal examination and weeding him out. In the course of time many leading industrial firms found this arrangement unsatisfactory and began establishing training

Table 2: Apprenticeship in Britain

Education	Age of Entry into Industry	Entry Qualifications	Type of Apprenticeship	
University	21 or over	University degree	Graduate Apprenticeship	Technologist Apprenticeship
Secondary Grammar or Technical School	18	University entry (probably 3 G.C.E. "A" Level passes plus a number of G.C.E. "O" Level passes)	Undergraduate Apprenticeship	
	18	2 G.C.E. "A" Level passes plus a minimum of 3 G.C.E. "O" Level passes	Student Apprenticeship	
	16	5 or more G.C.E. "O" Level passes		
Secondary Modern School	16	3 or 4 G.C.E. "O" Level passes Technical School Leaving Certificate	Technician Apprenticeship	
	16	Possibly School Leaving Certificate Otherwise no formal qualification required	Craft Apprenticeship	

workshops to train apprentices according to well defined standards. The training workshops now function like actual production shops of the industrial enterprises and provide the necessary practical knowledge and experience required by the apprentices. The German apprenticeship system is based on practical training in training workshops maintained by industry, and part-time vocation at schools maintained by public authorities. The training workshops and vocational schools co-operate closely with each other.

The overall plan of German apprenticeship is administered by two organizations: the German Council for Industry and Commerce (Dentscher Industrie- und Handelstag - DIHT) representing at the national level 81 Chambers of Commerce and Industry, and the German Association of Chambers of Artisan Trades (Dentscher Handwerks Kammertag) representing 45 artisan chambers. The former is responsible for apprenticeship in industry and commercial trades, and other standard training materials which are prepared by the Central Office for Industrial Training sponsored by the DIHT in collaboration with the Federation of German Industry and the German Confederation of Employers Associations. The same functions are carried out for artisan trades by the Institute for Training in Artisan Trades and the Institute for Artisan Trades Technology sponsored by the German Association of Chambers of Artisan Trades.

The German apprenticeship system is practically autonomous, but with a set of self-governing principles and rules built into the system by industry, and with supervision and control vested in the Chambers of Industry, Commerce and Trades. At the federal level, the Ministry of Economic Affairs approves training regulations.

The German apprentices start their training normally after nine years of elementary education (i.e. at the age of 15). The duration of training is three to three and a half years for skilled workers. The training is based on the "Berufshild" (i.e. the trade specification of the respective vocation which has been recognized by the Federal Ministry of Economics). The basic principle of specifications is that apprentices shall be trained to a uniform level everywhere. During apprenticeship each trainee also attends a vocational school one day a week for related education.

The indenture is drawn up between the training firm and the apprentice (or his legal representative) and registered with the relevant Chamber of Commerce and Industry or Trades. The Chambers are bodies incorporated under public law, and membership of a Chamber is compulsory for each and every firm.

Elaborate arrangements exist for vocational guidance to young persons in choosing the correct type of industrial occupation according to the principle that "in a twentieth century society a vocation is not only a means of earning a living, but determines to a very large extent social structure and human interrelations". After being chosen for apprenticeship, a trainee is given a three-month induction into his vocation and the enterprise where he is going to work. This is followed by systematic training for at least a year at the apprentice shop. During this period, the apprentice gradually becomes accustomed to his vocation and the reality of his field of activity, and he begins to recognize his later function and position within the working process. At the same time, his personality, attitudes to work, and inter-personal relations and adaptability are formed.

As soon as the apprentice has acquired basic technical knowledge and skilled in a particular field, he is transferred to the enterprise for training on the job under close supervision. At the end of the three to three and a

half year training, an apprentice takes the final examination conducted by an examination board of the particular Chamber of Commerce, Industry or Trade and, if successful, is certified by the Chamber as a fully qualified skilled worker. He also receives from his training firm about his performance in training, conduct and work.

An important modification being tried out, especially in the metal working trades, is the "Stufenplan". This consists of training in three steps. Each step is concluded by an examination which prepared workers for jobs needing different levels of skill and qualification. After the first year the apprentice is expected to reach a level approximating that of a semi-skilled worker. If he wishes he may continue and reach, at the end of the second year, a level approaching that of a skilled worker. The best among the trainees may enter the third step at the third year to reach the qualification of a highly skilled worker.

The German apprenticeship, which is regarded as an established and well developed system of vocational education, is also distinguished by a variety of industrial education programmes organized by industrial enterprises. The most important of these is designed for the training of Foremen (Vorarbeiter) and Supervisors (Masters of Industry) who play a very important role in industrial organizations.

United States of America

Apprenticeship was a basic educational institution in colonial America. Town officials resorted to involuntary apprenticeship to meet their obligations to orphans and poor children because, through apprenticeship, these young people could ultimately become self-supporting. Throughout the nineteenth century, however, American industry depended wholly on highly-skilled European immigrants for its manpower. During the same period the industrial revolution made big strides in mechanical technology with the consequent specialization of labour. These two factors combined to limit apprenticeship in the United States in the early stages of industrial development. When in 1872 Hoe and Company, printing press manufacturers, started what was probably the first on-the-job training for its employees, it was set up as an apprenticeship system. Other companies like the Westinghouse Machine Company, the General Electric Company, and the Baldwin Locomotive Works soon followed with their own apprenticeship programmes.

Subsequent restrictions on immigration made it necessary for American enterprises to train their non-skilled manpower, and the National Association of Manufacturers (NAM) Convention in 1904 recognized formally the importance of industrial training and education for workers. At first the NAM maintained that trade schools were enough to train the needed craftsmen. At that time vocational education had received a big support from the Federal Government under the Smith-Hughes Act and spread widely throughout the country. American organized labour, however, had looked down on trade schools with the ubiquitous attitude that "he who knows does; he who can't, teaches". While American labour was against trade schools, the NAM was for it. But by 1910 the NAM changed its stand and took the position that "industrial education must consist in skill and schooling. These two parts are of equal importance, they must be organically connected and each will co-ordinate and supplement the other".

It is this fundamental idea of a combination of on the job training with related technical training (schooling) which characterizes the American

apprenticeship system. The system is also based essentially on voluntary co-operation between management and labour, industry and government, the shop and the school. This voluntary co-operation is reflected by national joint labour apprenticeship committees set up by national employer associations and international labour unions to work out suggestions and methods for the development and improvement of apprenticeship and other training within their respective trades or industries. Similar co-operation in apprenticeship - involving management, labour, education and government - exists at the state level. Since the employment and training of apprentices takes place in the local community, the work of national and state apprenticeship groups is directed towards stimulating interest in training on the part of local employers and employees.

The greatest advance for apprenticeship in America came from the Fitzgerald Act (also known as the National Apprenticeship Act) of 1937 which authorized and directed the Secretary of Labour "to formulate and promote the furtherance of labour standards necessary to safeguard the welfare of apprentices, to extend the application of such standards by encouraging the inclusion thereof in contracts of apprenticeship, to bring together employers and labour for the formulation of programmes of apprenticeship... and appoint national advisory committees... to... include representatives of labour, educators, and officers of other executive departments, with the consent of the head of any such department". This is the basic federal Act governing the organization of apprenticeship in the United States; it calls upon the Secretary of Labour to promote more apprenticeship programmes in private industry and to encourage the use of the highest standards in training programmes. The law contains no provision for penalties or levies; its sole purpose is to promote voluntary co-operation between industry and labour, and to offer technical assistance and guidance. The Act is administered on the assumption that the role of the government is restricted to the stimulation of voluntary action on the part of management and labour, and that the primary responsibility for organization and carrying out the training lies with the employers and workers concerned.

No federal financial aid is given to industry or to the states under the Fitzgerald Act. However, the Bureau of Apprenticeship and Training set up by the Department of Labour stimulates and assists in the development, expansion, and improvement of apprenticeship, and provides continuing technical assistance after the programmes are put into operation. To this end, the Bureau has made available to management and labour the services of its expert staff in developing and improving apprenticeship and other industrial training programmes. In the performance of these functions, the Bureau is guided by the Federal Committee on Apprenticeship which consists of leaders of management, labour and vocational education.

The basic principle of the Bureau of Apprenticeship is that schemes of apprentice training should be satisfactory to both employers and workers. Recognizing that apprentices are employed in a large variety of trades and that conditions vary, the Federal Committee has recommended standards which are general in scope and intended to represent the essential provisions that an apprenticeship programme should include, namely:

(a) The starting age of an apprentice should be at least 16 years.

(b) An apprenticeable occupation should require 4,000 or more hours to learn. (For most engineering trades, 8,000 hours, equivalent to three to four years are prescribed.)

(c) A schedule of work processes to be learned on the job should be drawn up.

(d) Organized instruction of a minimum of 144 hours each year, designed to equip the apprentice with knowledge in technical subjects related to his trade, should be provided.

(e) A progressively increasing scale of wages for the apprentice, which should average approximately 50% of the journeyman's rate over the period of apprenticeship, should be established.

(f) The terms and conditions of the employment and training of each apprentice should be stated in a written agreement and registered with the State Apprenticeship Council.

(g) The apprenticeship scheme should be jointly established by the employer and the employees.

(h) Adequate supervision and the keeping of records should be required for all apprenticeship programmes.

The Bureau of Apprenticeship of the Department of Labour is responsible for carrying out the provision of the Fitzgerald Act and the policies and standards formulated thereunder, and acts as a clearing-house for the operation of the national apprenticeship programme in the different trades. But the Federal Committee on apprenticeship, which is the joint management-labour policy-making body for the Bureau is regarded as the keystone of the American Apprenticeship system. It has brought together various trade and sectional interests into one apprenticeship programme and set a pattern of labour-management committees throughout the country.

India: the Pre-Independence Period

Though apprenticeship was deeply rooted in the arts and crafts of the Indo-Aryan civilization dating back to more than 2000 years, the present concepts and forms of apprenticeship were derived mainly from European systems from about the middle of the nineteenth century. The first effort in this direction was reflected in apprenticeship in the Indian Railways, as they started spanning the sub-continent, adopted an extensive system of apprenticeship for training craftsmen, chargemen, foremen and mechanical engineers. It was reinforced by education in special technical schools established by the railways near their workshops.

Not long after the Indian Railways started apprenticeship, the ordnance factories of the Defence Department also introduced apprenticeship in their works for craftsmen,foremen, supervisors and other categories of production process workers. Other important subsequent developments included the establishment of a Board of Apprenticeship system which is a landmark in the Indian setting designed and implemented by the Tata Iron and Steel Company Limited in Jamshedpur.

India: the Post Independence Period

Industrial Training Institutes

When India became independent in 1947, the country embarked upon a com-

prehensive programme of national development through successive Five-Year Plans. It was also realized by India that the success of the plans depended upon adequate supply of technical manpower. The Government therefore formulated and implemented various programmes to train the needed manpower at all levels. These included the establishment of a large number of Industrial Training Institutes (ITIs) for the training of skilled workers at the craftsman level. These ITIs were subsequently to have a decisive effect on apprenticeship since they formed the basic training on which apprenticeship was built up as a system of education within industry.

There are in India today 357 Industrial Training Institutes which have over 150,000 training places in 30 engineering and 22 non-engineering trades. Till 1966 the duration of training in engineering trades was 18 months at an ITI followed by six months of in-plant training in industry. For non-engineering trades the duration of training was only one year. The minimum educational requirement for admission to most engineering and non-engineerin trades was eight years of general school education, and for some engineering trades like Draughtsman, Electrician, Instrument Mechanic, Refrigeration and Air-conditioning Mechanic, Radio Mechanic, etc. candidates were required to have passed the matriculation examination (ten years of school education).

Initially the main purpose of the ITI courses was to train fully fledged skilled workers in different engineering and non-engineering trades. So the curriculum laid emphasis on intensive skill development in the workshops attached to the ITIs. In addition, instruction in the relevant trade theory, mathematics, drawing and blueprint reading was included in the curricula. The total instruction and practical work of the courses lasted about 3,000 hours, consisting of 500 hours of theoretical studies and 2,500 hours of practical work. The six-month in-plant training was to expose the candidates to actual industrial working conditions and to give finishing touches to their skill development.

As the programme of Industrial Training Institutes was implemented the Government of India considered it important that a central authority should co-ordinate all aspects of vocational training at national level, lay down standards, institute National Trade Certificates for craftsmen and advise the Government on the overall training policies. (The need for such a national agency had also been recommended by the Ananthashayanam Iyyangar and Shiva Rao Committees). Accordingly, the Government set up a National Council for Training in Vocational Trades (NCTVT) with the following main functions:

(a) To establish and award National Trade Certificates in engineering, building, textile, leather and other trades.

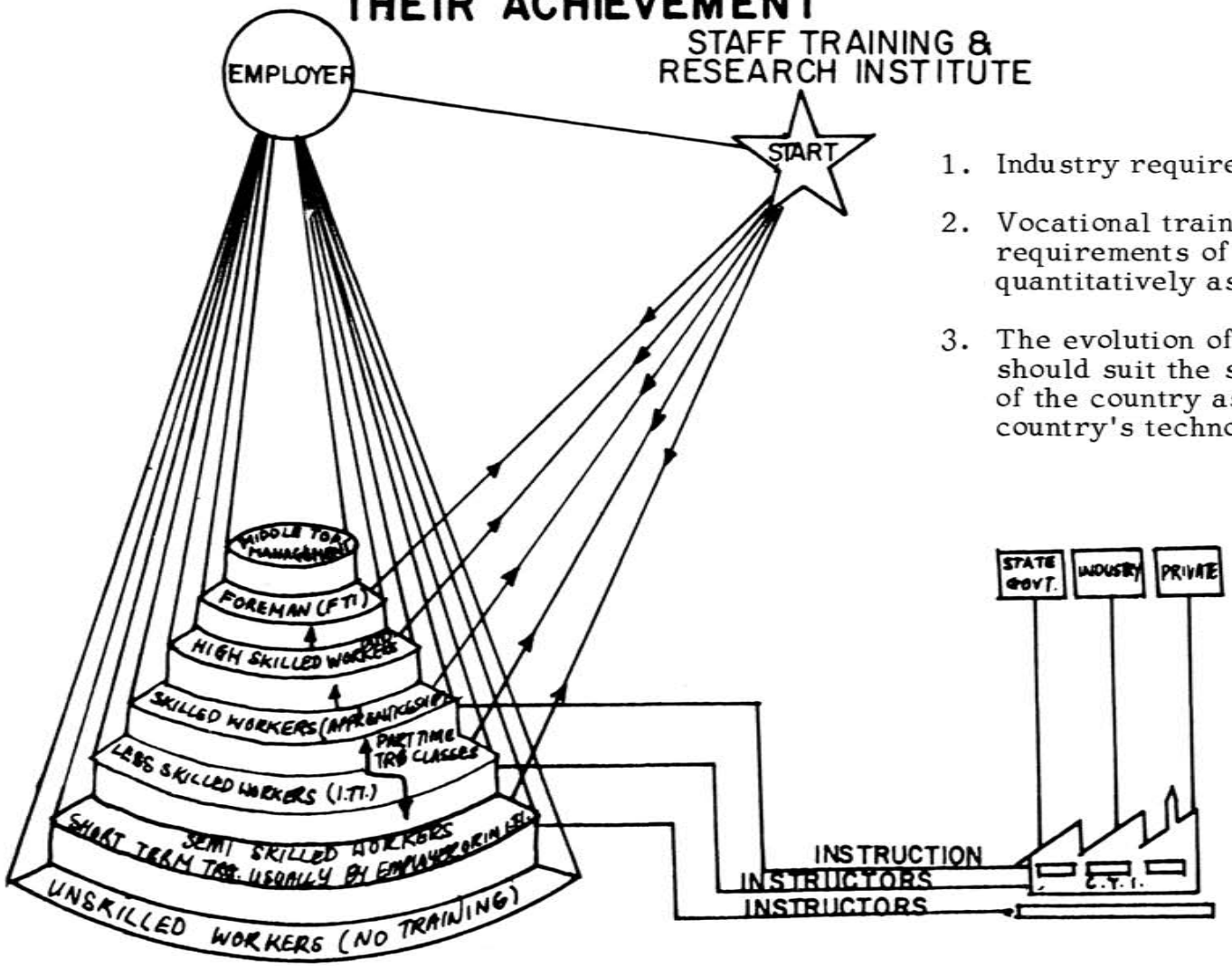
(b) To prescribe standards in respect of syllabuses, equipment, accommodation, duration of courses, methods of training and qualifications of staff.

(c) To arrange trade tests and lay down standards of proficiency required for the award of National Trade Certificates.

(d) To arrange periodical inspection of training institutions in India to ensure that the standards prescribed are being followed.

(e) To recognize institutions for the grant of National Trade Certificates.

SCHEMATIC REPRESENTATION OF THE LEVEL OF SKILL REQUIREMENTS AND THE ROLE PLAYED BY THE VOCATIONAL TRAINING PROGRAMME IN THEIR ACHIEVEMENT



1. Industry requires workers at different levels of skill.
2. Vocational training programme should reflect the requirements of the employers for workers both quantitatively as well as qualitatively.
3. The evolution of the vocational training programmes should suit the social economic and cultural pattern of the country as well as the developments in the country's technology.

Legend

ATI. Advance Training Institute

CTI. Central Training Institute for Instructors

FTI. Foreman Training Institute

ITI. Industrial Training Institute

(f) To advise the Central Government on all aspects of Vocational Training.

The Council, presided over by the Union Minister for Labour and Employment, is fully representative of all interest concerned - Ministries of the Central Government, State Governments, employers' organizations, workers' organizations professional bodies, women's organizations and education.

Since its establishment in 1956, NCTVT has been chiefly responsible for the determination of the standards of training in different trades in the Industrial Training Institutes, preparation of training manuals and other instructional material, holding of trade tests for the award of National Trade Certificates on an all-India basis and for co-ordinating the development of vocational training in India. It is also this organization which over the years has assessed the requirements of industry for skilled workers and formulated training programmes in the ITIs. More important, recognition of apprenticeship as the main means of skill development by NCTVT led to the formulation of a new Apprentice Act and its implementation by the Government of India.

After conducting these 18-month trade courses at the Industrial Training Institutes for over ten years, the National Council for Training in Vocational Trades realized that fully fledged skilled workers acceptable to industry could not be trained in this manner and that a basic departure was needed. This view was also reflected in the decision of the Government of India that apprenticeship was essential to skill development which resulted in a new Apprentice Act in 1961. The National Council therefore decided in 1966 to reclassify the trades into six groups and to reduce the duration of training to one year for some trades and to extend the duration to two years for others. The main reason for these changes is the recognition of apprenticeship as the main means of skill development and that the Industrial Training Institutes should provided only basic training upon which industry may build real professional skills through well-organized apprenticeship. These changes also implied that the ITI courses would produce only semi-skilled or less-skilled workers. This new role of ITIs and how their courses are structurally related to apprenticeship are given in a schematic representation of skill levels by the Directorate-General of Employment and Training. This is reproduced in the diagram on page 44.

In line with these objectives, the re-structured two-year courses are divided into two parts. The first part covering the first year of the course is devoted mainly to basic training in the trade concerned along with related instruction in engineering drawing and mathematics and science as applied to workshop practice and materials. The content and standard of engineering drawing, mathematics and science have also been improved to give a better theoretical foundation to trade training. The second part which covers the second year extends the basic training for intensive practice in the skills of chosen trade.

It is also visualized that during this part the trainees should perform the various operations of their trade on useful jobs and carry out production work on modern machines. In addition the course provides for more advanced instruction in engineering drawing, mathematics and science.

Thus in India the ITI courses have now become a form of pre-apprenticeship training for basic skills under controlled conditions. Although they are outside the school system they have the structure and content of vocational education and therefore represent a diversified form

of educational preparation for gainful employment in life. This is precisely what Wood and Abbott visualized in their Report in 1936, notwithstanding the fact that they made, albeit unsuccessfully, a neat distinction between Junior Technical Schools and Industrial/Vocational Schools.

The Industrial Training Institutes have, not by design but by a process of change in response to new circumstances, come to bridge the gap between school and working life and to provide the foundations of apprenticeship in industry. The total absence of any other form of vocational education within the Indian school system underscores the dual function of the ITIs.

The Apprentice Act, 1961

India is a federal republic and the Constitution of India spells out clearly the legislative and other powers of the Union and the Constituent States in different spheres of national life. According to the Seventh Schedule of Article 246 of the Constitution, "Union agencies and institutions for - professions, vocational or technical training, including the training of police officers... " is a central subject. The same schedule also provides "vocational and technical training of labour" as a concurrent subject. Therefore, the Apprentice Act (see apprendix) reflects the relative constitutional responsibility of the central and state governments for vocational training. The Government of India is responsible for implementing the Act in railways, major ports, mines, oil fields; in all establishments owned or controlled by it; and in companies in which not less than 51 per cent of the share capital is held by it, or partly by it, and partly by state governments. The state governments are responsible for implementing the Act in all establishments owned or controlled by them, and also in industrial and commercial establishments in the private sector located in their respective states. But all the rule-making powers are vested in the central government. These cover such major aspects of apprenticeship as designating the apprenticeable trades, determining the ratio of apprentices to workers, prescribing the duration of training and entrance requirements for apprenticeship, determining the minimum rates of stipends for apprentices, and prescribing the syllabus and other details of practical training. In making the rules, the central government has undoubtedly to consult the Central Apprenticeship Council. Nevertheless, according to the Act, the central government is for practical purposes the overall authority for the control of apprenticeship in India.

There are many points of similarity between the Indian apprenticeship system as visualized under this Act and the apprenticeship systems in other countries. For instance the contract between an apprentice and an employer is purely voluntary, but unless it is registered with, and approved by, the Apprenticeship Adviser of the central government or a state government, training cannot start. The overall control over apprenticeship, including co-ordination of standards of training, is vested in the central government. The central government exercises control by designating the apprenticeable trades, prescribing the duration, content, methods and standards of training determining the number of apprentices to be trained by an employer in each trade, inspecting the establishments where training is imparted and by certifying the apprentices after training. All these imply that within an official framework there is complete centralization of authority for apprenticeship in India today.

Again, like those in other countries, the Indian apprenticeship system prescribes basic training before an apprentice is sent for on the job training in an establishment. It also prescribes that the establishment itself, if it employs 500 or more workers, shall provide the basic training, and that

for this purpose, the establishment should set up a separate centre, according to the standards laid down by the central government. Where an establishment employs less than 500 workers, the basic training of apprentices should be conducted at training institutes set up by the government. All these provisions are designed to ensure that pre-apprenticeship training that is so necessary for correct skill development, is conducted under controlled conditions. Further, the Indian Apprentices Act requires all employers to give related instruction to apprentices appropriate to their trades to equip them with adequate theoretical knowledge.

Another central point of similarity in the Act is the fact that all employers who are notified by the Government, shall train apprentices according to the directives issued. This provision is specifically to secure an adequate quantity of training in industry, on the one hand, and, on the other, to ensure that all firms, which benefit from the employment of trained workers must share the financial burden of training. However, unlike the British Industrial Training Act of 1964, the Indian Act does not provide for a levy/grant mechanism to equalize the cost of training among the various firms in an industry.

The sharing of the costs of training as visualized in the Indian Act reflects the special circumstances obtaining in India. First, the government has spent huge sums of money on setting up the Industrial Training Institutes and providing institutional training facilities to large numbers of young men and women who may later on proceed to apprenticeship for limited periods. The Government has already incurred expenditure on their basic training and also on a part of their specialized training in the respective trades. Second, Indian industry is still in a developmental state and there are large numbers of small and medium firms. A balance has to be maintained between their capacity and that of larger firms to bear the cost of training. The Act therefore requires all firms irrespective of their size to bear the full cost of training (including stipends) in respect of apprentices, who have already undergone institutional training at an Industrial Training Institute. As for other types of apprentices, a firm has to bear the full cost if it employs 500 persons or more; if it employs less than 500 persons the cost is to be shared by the firm and the Government in equal parts. Further, the Act apportions the cost of related instruction for all apprentices, irrespective of the size of the firms where they are undergoing training, to the Government.

In practically all industrially advanced countries the concept and practice of apprenticeship have been extended to the training of engineers, technicians and even managers in real industrial situations. The Indian Apprentices Act 1961, however, specifically excluded all these categories of apprentices and restricted itself to the training of skilled workers. The precise reasons why this important legislation was made restrictive are not clear. It has been suggested that one reason is a possible lack of co-ordination and co-operation among the different government ministries with responsibility for vocational and technical training, and the education of engineers and technicians. Another reason may be the sharp distinction which the Constitution of India makes between education and training.

Whatever may have been the reasons however, one can say that for many years the apprenticeship of engineers, technicians and skilled workers remained fragmented since there appeared to be a lack of an integrated approach to manpower development for industry. This resulted in a situation in which hardly any facilities were provided to apprentices in industry for part-time studies for engineering degrees and diplomas either on a day-release or a block-release basis. All the facilities provided were for full-time courses.

Fortunately this was changed in 1973 when the Indian Parliament approved amendments to extend the Apprentices Act to include "graduate and technician apprentices" and bring their training within the national framework. According to the amendments it is obligatory on an employer to provide for the practical training of engineers and technicians in his establishment. Further, "graduate and technician apprentices" have been defined to mean not merely those apprentices who have taken degrees and diplomas; it includes all those apprentices who are studying for degrees and diplomas (i.e. "student" apprentices). Thus, the amended Act brings Indian apprenticeship close to the British and other European systems in its broader concept of education in industry.

According to the amended Act, the number of graduate and technician apprentices to be trained by an establishment is determined by the Central Apprenticeship Adviser on the basis of the number of managerial persons (including technical and supervisory persons) employed and the totality of the training facilities available in the establishment. For trade apprentices, however, their number is prescribed by the central government in a ratio to the skilled workers employed in each designated trade.

The centralized control over graduate and technician apprenticeship is also reflected in the sharing of the cost of training. According to the amended Act, the establishments have to bear the full cost of training, except for stipends. The cost of stipends paid to apprentices is to be shared by the central government and establishments in equal parts.

As for the duration and other details of the programme of training, these have to be approved by the central government in consultation with the Central Apprenticeship Council. The Central Apprenticeship Council will award certificates of proficiency to graduate and technician apprentices on satisfactory completion of training.

Apprenticeable Trades and Duration of Apprenticeship

The Government of India has so far notified 201 different industries to which the provisions of the Act will apply. These include food, textiles, chemical, metallurgical, engineering and other manufacturing or processing enterprises.

In these industries the Government has designated 61 trades as apprenticeable under the Act. They fall under 18 groups. The citeria on which the apprenticeable trades have been identified are: they represent the chief technical or vocational occupations in which the majority of skilled labour force is employed; they are the occupations in which trained personnel are required for economic development; and they are the occupational areas in which training on the job is indispensible to ensure an adequate supply of manpower. The groups cover all the important engineering, metal construction, chemical, printing, hotel and catering and commercial trades.

For almost all trades in engineering, metal, chemical, building and printing groups the duration is uniformly three years, except for a few trades for which the duration varies from one to four years; for the trades in hotel and catering group the duration varies from three to four years; for textile trades it is six months, and for all commercial trades one year. The medium duration of apprenticeship is three years.

In earlier years there were three types of apprenticeship - a short-term apprenticeship of six months, and two long-term apprenticeships of 18 months and three years. The first was intended for those persons who had undergone an 18-month training at an ITI and needed six-months of in-

plant training to qualify for the National Trade Certificate of NCTVT. The second type was also intended for those persons who had undergone the ITI training but wished to have a fully fledged National Apprenticeship Certificate. The last type was meant for all other apprentices who had not had any previous institutional training. As explained earlier, the ITI has since 1966 been re-organized into one-year and two-year pre-apprenticeship courses. Therefore, the six-month and 18-month apprenticeships have been abolished and all those who have undergone the re-organized ITI training have to complete the balance of the prescribed period of apprenticeship.

Ratio of Apprentices to Workers

A crucial part of the apprenticeship structure is the number of apprentices that an establishment should engage for training. Upon this number depends the manner in which the resources of industry are mobilized for the system as a whole.

On the basis of the facilities available in Indian industry and in consultation with the Central Apprenticeship, the central government has determined the number of apprentices to be trained in each trade in proportion to the number of skilled workers employed in that trade in the establishment concerned. They vary from 1:1 to 1:100, but for most engineering trades the proportion is one apprentice to seven workers. The lowest proportions (1:50 or 1:100) are entirely in the textile trades, and the highest (1:1 or 1:2) in the engineering group.

Basic Training and Related Instruction

In a well-organized system of apprenticeship, basic skills in young apprentices must be developed under controlled conditions to ensure that the apprentices acquire correct work habits and also achieve adequate understanding of the scientific principles underlying their future trades. The basic training must also give a firm foundation on which subsequent on the job training could be conducted in progressive stages to produce a fully fledged skilled worker who is able to use the machines, tools and operations of his specialized trade competently and with confidence. For all these purposes, separate centres are needed for basic training.

In line with these principles, the Indian system prescribes how an establishment may organize basic training for its apprentices. If the establishment employs 500 or more workers it should set up a separate centre for basic training. This implies that on an average of one apprentice for every seven to ten employees, the basic training centre of an establishment with 500 workers will have 50 to 70 apprentices. Two or more establishments may also join together and set up a common training centre for all their apprentices. The same joint effort is permissible for on the job training so that the establishments may put their resources together and move the apprentices around among themselves.

For establishments employing less than 500 workers, the system prescribes that the apprentices should be sent for basic training to government training centres, which are usually Industrial Training Institutes. The duration of basic training is one year, and it is compulsory for all apprentices except those who have had their pre-apprenticeship training at an ITI or institutions recognized by NCTVT.

Related instruction is compulsory for all apprentices throughout the apprenticeship period and covers the theoretical aspects of their trades. For instance, for engineering trades the subjects of related instruction are:

Trade Theory	:	Two hours each week
Workshop Calculation and Science	:	Two hours each week
Engineering Drawing	:	Two hours each week
Social Studies	:	One hour each week

The total instruction during a three-year apprenticeship extends over 1,050 hours.

Related instruction is imparted at the ITIs or other institutions which have facilities for the purpose. Apprentices are released to attend the institutions on the basis of either one full day each week or a whole week in block every six weeks. The system also permits an establishment to impart related instruction to its own apprentices if it follows the prescribed syllabus, has the required qualified staff, and provides for a minimum of seven hours of instruction each week.

Testing and Certification

The Apprenticeship Rules have prescribed detailed procedures and forms for maintaining the record of training of apprentices for carrying out periodic assessment of their performance, and for submitting reports to Apprenticeship Advisers. These are designed to facilitate control by establishments over the progress of apprentices, on the one hand, and, on the other, to give an overall assessment of their performance for final certification. The reports also enable Apprenticeship Advisers to watch over how the establishments are conducting the training programmes.

The progress reports must give full particulars of each apprentice in respect of his trade of specialization and educational and training background, the number of days spent on practical training and related instruction, the type and number of operations performed each month according to the prescribed scheme of training and grading both in theoretical subjects and practical work. On the basis of these reports an apprentice is sent up for final testing and certification by the National Council for Training in Vocational Trades at the end of his training.

The final trade test is held twice a year (March and September) in the following subjects: practical work in the trade concerned, trade theory, workshop calculations and science, and engineering drawing. In addition the essential work, the work diary and progress reports of apprentices during their apprenticeship are assessed. This assessment is taken into account in final certification. The test papers, including the required bill or materials, special tools, instruments and gauges for each trade, are prepared by a central committee of experts. The committee also lays down detailed procedures for the assessment of the apprentices at the tests.

According to these instructions, the tests are conducted at a network of centres which include ITIs and industrial establishments. A local Board of Examiners consisting of experts is appointed for each centre to supervise the tests, assess the performance of apprentices and declare the results. Those who pass are awarded the National Apprenticeship Certificate (under the authority of the Central Apprenticeship Council).

APPENDIX: THE INDIAN APPRENTICE ACT, 1961

In 1961, the Indian Parliament passed a new Act to bring apprenticeship under state control and direction. The main provisions of the Act, which give the legal form to apprenticeship, are summarized below:

(i) All employers, who may be notified by the Central Government, shall engage apprentices to undergo training in the designated trades in their establishments. Several employers may, however, join together to provide practical training to the apprentices by moving them among their respective establishments.

(ii) The Central Government, in consultation with the Central Apprenticeship Council, shall designate the trades in which apprentices shall be engaged and also determine the ratio of apprentices to workers (other than skilled workers) for each trade. Each employer shall engage apprentices according to the prescribed ratio. He is, however, free to engage more than the prescribed number of apprentices.

(iii) Every employer shall make suitable arrangements in his workshop to conduct a course of practical training for apprentices according to the programme approved by the Apprenticeship Adviser, and also provide qualified supervisors. The Apprenticeship Adviser shall be given all reasonable facilities to assess and test the work of apprentices to ensure that the practical training given to them is in accordance with the approved programmes.

(iv) No person shall be engaged as an apprentice to undergo training in a designated trade unless he:

(a) is not less than 14 years of age;

(b) satisfies the prescribed standards of education and physical fitness;

(c) he/his guardian enters into a contract of apprenticeship and the contract is registered with the Apprenticeship Adviser. The contract may contain such terms and conditions as may be agreed to between the parties concerned.

(v) The contract shall prescribe the period of apprenticeship which may be determined by the National Council of Training in Vocational Trades in respect of apprentices, who have passed the trade tests conducted by the National Council and by the Central Government in respect of other apprentices.

(vi) The contract may be terminated by either party with the approval of the Apprenticeship Adviser if the other party fails to carry out the agreed terms and conditions. Where the contract is terminated for the failure of the employer, the employer shall pay such compensation to the apprentice as may be prescribed. For failure on the part of the apprentice, the apprentice or his guardian shall refund to the employer the cost of training which may be determined by the Apprenticeship Adviser.

(vii) Those apprentices who have not undergone any institutional training recognized by the National Council for Training in Vocational Trades shall, before admission to a workshop for practical training, undergo a course of basic training. Where an employer employs in his establishment 500 or more workers, he shall provide the basic training to the apprentices by setting up a separate training centre for the purpose. Two or more such employers may join together and set up a common basic training centre for their apprentices. Where an employer employs in his establishment less than 500 workers, the basic training shall be imparted to the apprentices at the training institutes set up by the Government.

(viii) The syllabus of, and the equipment to be used for, practical training, including basic training, shall be prescribed by the Central Government in consultation with the Central Apprenticeship Council.

(ix) The employer shall pay to every apprentice during the apprenticeship period stipends according to the rates prescribed by the Central Government.

(x) The training costs (including stipends) in respect of apprentices other than those who have passed the trade tests conducted by NCTVT, shall be borne by the employer if he employs 500 or more workers; the employer and the Government in equal parts if the employer employs less than 500 workers.

(xi) As for apprentices who have passed the trade tests conducted by NCTVT, the training costs (including stipends) shall be borne by the employer irrespective of the number of workers employed in his establishment.

(xii) All apprentices shall, during their practical training, be given related instruction appropriate to their trade so that they may be equipped with adequate theoretical knowledge. The details of the related instruction shall be prescribed by the Central Government in consultation with the Central Apprenticeship Council. The cost of related instruction shall be borne by the Central Government or State Governments depending upon the nature of the establishment.

(xiii) It shall not be obligatory on the part of the employer to employ any apprentice who has completed training in his establishment, nor shall it be obligatory on the part of the apprentice to accept employment under the employer, excepting where the contract specifically provides for such employment.

(xiv) There shall be a Central Apprenticeship Council consisting of representatives of the Central Government and State Governments and experts in matters relating to industry and labour. There shall also be a State Apprenticeship Council in each State similarly constituted. The State Apprenticeship Councils shall be affiliated to the Central Apprenticeship Council.

(xv) The Central Government shall appoint a Central Apprenticeship Adviser and the State Governments shall appoint State Apprenticeship Advisers. The Governments concerned may appoint other officers to assist their respective Apprenticeship Advisers.

(xvi) Every apprentice, who has completed the prescribed training, shall appear for a test conducted by NCTVT to determine his proficiency in the designated trade, and, if he qualifies at the test, shall be granted a certificate of proficiency by NCTVT.