

# Vocational training

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# VOCATIONAL TRAINING

## INFORMATION BULLETIN

of the Commission  
of the European Communities

### **EDITORIAL**

The Commission of the European Communities has decided to publish reports, in the form of supplements to the Bulletin, on the position and development of vocational training in the Member States of the Community.

The first supplements will be available in autumn this year and may be obtained on application to the Sales offices, the addresses of which appear on the inside of the back cover.

Furthermore, starting at the end of the year, the Commission has decided to undertake the publication of studies on apprenticeships in each of the Member States of the EEC as well as an overall study.

Further details as to the availability of these publications will be announced in due course.

### **APOLOGY**

In the Bibliography section of Issue 4 - 1975, item No 274, the publisher's name was wrongly printed. The name of the publishing company is Wellens Publishing of Guilsborough. We apologize for any inconvenience caused to readers.

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## *Planning vocational training*

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A. P. O'Reilly<sup>1</sup>

The formulation of a training policy to rectify projected imbalances between manpower supply and demand has come to be regarded as an integral part of the manpower planning process. Descriptions of analytical methods relating to manpower planning usually incorporate procedures for the determination of the numbers and type of personnel who must be trained if the skill stock is to be consistent with output targets. Thus, manpower forecasting which relates social and economic targets to occupational requirements may also involve the further step of relating occupational needs to educational and training backgrounds to determine the educational and training requirements for the planning period. Other methods of determining the latter include the 'education-output' approach, which omits the intermediate occupational step of the manpower forecasting method and attempt to derive educational and training needs directly from social and economic targets, and the 'indicators' approach, which relates indicators of educational and training development to indicators of economic growth.

Economic planning and national manpower planning are interdependent. To be consistent and optimal, a plan must resolve the question to what extent the general economic plan should be modified to take account of the structure of manpower supply, and also to what extent the supply should be modified to meet the requirements of the plan. The consequences of a lack of coordination can be serious and aggravated where no medium or long-term economic planning exists.

The absence of a manpower input at policy level to longer-term industrial and commercial development policy formulation also has important implications.

Important investment decisions should not be taken without reference to the availability of the required skills or to the possibility of tailoring the form of the investment to obtain a maximum employment effect. On a longer-term basis, the absence of a manpower policy input could mean that economic development programmes might neither be consistent, i.e. framed in terms of a balance of supply of and demand for resources at a target level of activity, nor optimal, i.e. conceived so that scarce resources are allocated to achieve plan targets at least cost. The selection of a particular technology largely defines the occupational structure of a project's labour force. Once physical resources have been committed, a condition of irreversibility can set in and options relating to the type of manpower to be employed become curtailed, thus restricting the degree of freedom of those who are meant to be the basic policy architects. Second, and even third order consequences can be identified. The occupational structure of the project may be fed to the educational/training system in the form of data which describes future manpower requirements, and the training of manpower along the lines indicated may further restrict the flexibility of the policy maker [1].

Vocational training planning should be the last, or one of the last, steps in a manpower planning programme since its dimensions are largely derived from a specification of the skills required to meet national economic objectives. The prior analysis may consist of simple linear or curvilinear projections of past employment trends or it may involve more sophisticated methods such as the education-output approach. Except in the case of the latter, which attempts to derive educational/training targets directly from economic and social targets, it is necessary to convert occupational data into occupational requirements. The complexity of this task is well known. Indicators or education-output approaches, although they by-pass the problem of relating occupation to education/training, generally provide no more than very broad guidelines for appropriate educational policy. Apart from the fact that many countries lack specification of economic and social targets, data resulting from these approaches would provide no more than general guidelines when, for the planning of training programmes, more specification is required.

Planning must also take account of the role of public retraining programmes as a measure to counteract economic recession. Rehn [2] suggests that if a programme of retraining is sufficiently flexible it can exert considerable influence over the short-term variability in labour supply. To be used in this way the programme needs to be relatively large — capable of absorbing, Rehn suggests, at least one per cent of the labour force — before flexibility can be acquired and its benefits attained. The cost of attaining such flexibility is the unused capacity of the retraining system during periods

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of high economic activity. The slacker the labour market, the less scope there will be for reducing unemployment through retraining. There will, nevertheless, be skill shortages which need to be filled if development is not to be hindered and if the potential inflationary bottlenecks which the shortages represent are not to be realized. There is also the need to provide the pool of skilled labour which will be needed when the economic situation improves. These reserves of trained manpower can also assist in attracting new industry.

An important consideration in the planning process is the relationship between the benefits to be derived from implementing the proposed plan and the costs involved. Cost-benefit studies of manpower retraining programmes have shown that the benefits to the individual, to the funding agency, to society are large, relative to the costs involved. The higher the level of unemployment, the greater the benefits will be in relation to costs: this is because the cost of the investment in retraining will be lower, as the output foregone as a result of having workers in training rather than in work will not be great.

Investment in retraining is, therefore, likely to be even more worthwhile when carried out in a period of temporary recession, rather than when the economy is nearer to full stretch, provided the retraining is geared to future needs.

There are other, less quantifiable, but no less important benefits associated with investment in manpower training programmes. Such programmes can help to alleviate poverty caused by unemployment or low wages.

By reducing unemployment they may, bring about a reduction in crime and delinquency, with further associated benefits through increased effectiveness of law enforcement and social workers [3]. By assisting individuals to use their potential capacities more fully, training and upgrading can contribute to renewed motivation and improved job and career satisfaction. Where retraining results in more stable employment it might conceivably help to alleviate problems of psychological disturbance and marital strife brought about by prolonged periods of unemployment [4].

It is also certain that pressures on the national training system will continue to grow — as more young people enter the labour market — to cope with technological change, to provide many individuals with a second chance to develop their capacity, to improve the employment potential of the unemployed and underemployed and to meet the retraining needs of women reentering the labour market after an interruption in employment.

## **Experience and policies in EEC Member States**

Policy in relation to vocational training planning among the Community's Member States varies, even though their experiences and problems have been similar in many respects. All countries have had and, in many cases, continue to have surpluses of particular categories of manpower coexisting with shortages in other categories. Sometimes an over-reaction to a demand for a specific skill has led to an over-supply with the consequent problem of reorienting young people to alternative occupations. Lack of information in relation to likely future demand, often coupled with inadequacies in occupational guidance systems, have also contributed to imbalance in labour markets. Determining the priority to be afforded to vocational training in terms of public finance allocation has not been helped by the difficulties of assessing the cost-effectiveness of training programmes, and in measuring the benefits, particularly those coming under the broad 'social' heading.

The problems encountered have led certain Member States to conclude that vocational training planning is not possible, and they have virtually abandoned any planning attempts. In some countries notably France, vocational training plays an important role in five-year national economic and social plans, the seventh of which commences this year. The Danish social plan, at present in preparation, also proposes to allocate a key place to vocational training. The United Kingdom has accepted that it is not possible to plan meaningfully for vocational training except in the context of national manpower planning. Belgian policy tends to oppose quantification of training needs and seeks instead to provide training opportunities to meet individual demands and requirements.

There are two principles which appear to have widespread acceptance:

- (i) Social, as opposed to economic considerations, should have an ever-increasing importance in the formulation of vocational training policies,
- (ii) vocational training systems must become as flexible as possible, capable of reacting quickly to changing needs.

## **Information requirements**

Training is but one of a number of interrelated policy measures chosen to achieve certain national objectives: relatively little is known about the interrelationship of

many of the variables concerned. Every significant change in the economy has an impact on the pattern of labour supply and utilization. Variations in manpower supply and use may, in turn, induce changes in the economy, for workers are both consumers and producers of the nation's output. Even if it were theoretically possible to review the entire set of relationships, the absence of appropriate data would render the task impossible.

There are, however, practical steps which could be taken in many countries to improve current attempts at vocational training planning. To assess future training requirements, more precise measures of labour market activity are needed, e.g.

- To project the moving demand for skills a final demand must be projected, for it is demand for goods which ultimately determines the size and pattern of demand for manpower. Another element is the contrasting cost of labour and machinery which goes towards determining the rate of capital-labour substitution. Measures of final demand at present generally bear no necessary relationship to measures of labour embodied in that demand, either in the aggregate or — where it is really important — by major product. Nor is the pattern of substituting capital and machinery for labour clear, since measures of labour input to an industry are related in no particular way to the measures of capital stock and capital service in that industry<sup>1</sup>.
- We need to know more about the skill composition of occupations and trends in the market for skills.
- How reliable and valid are our present data about occupations. Occupational classifications obtained from census data have been shown to be suspect to a high degree in the United States.<sup>2</sup>
- Little is known about the relationship between many formal periods of, or qualifications resulting from education/training, and job performance.
- There is a considerable lack of data on actual and potential labour stock and supply.

<sup>1</sup> See Lebergott, Stanley, *Labour Force and Employment Trends*, in Sheldon E.B. and Moore, W.E. (Eds). *Indicators of Social Change: Concepts and Measurements*. New York: Russell Sage Foundation, 1968.

<sup>2</sup> One study by the US Census Bureau (*The Employer Record Check, Series ER 60, No 6, 1965*), which tested the reliability of its occupation data by comparing them with those obtained from employers, found that 18 per cent of all persons classified by the census in a given major occupation group really belonged in another one.

## Short-term problems

The difficulty of placing people in acceptable jobs which will make use of the training they have received becomes more acute during an economic recession. It is, consequently, important to develop a continuing system which will

- (a) identify the nature and location of current and likely future job vacancies as accurately as possible, and
- (b) feed this information into the vocational training planning mechanism with the minimum of time-lag.

It is then up to the planners to see whether the job opportunities which have been identified call for any re-orientation of current training programmes or for some alternative action (e.g. improved inducement to mobility). This presupposes that the training system is flexible enough to respond to fluctuations in skill demand.

AnCO has been attempting to develop a continuing system such as that described. A national manpower survey has identified current and likely short-term job opportunities in manufacturing and construction industries. The field-work involved personal visits to all companies employing 50 or more employees, and to a number of smaller firms. Experience gained during a pilot trial of the exercise enabled the job vacancy data to be produced within four weeks from the completion of the field-work. This was followed-up by an intensive validation exercise involving regional employment and industrial development personnel. Concurrent with this validation process, the provisional implications of the results for current and planned training programmes were assessed, and an occupational analysis with sample validation, was carried out of the unemployed.

Establishing a reliable and valid manpower information base is an essential step in the process of planning vocational training. Its value can only be fully exploited, however, by a continual monitoring and updating of the data, systematically fed back to the planning mechanism. AnCO is currently attempting to develop this phase of the exercise.

Concurrent with this kind of work, two other types of study are required:

- (a) studies of particular occupations — existing stock, wastage, recruitment, etc — to project likely supply of and demand for manpower in those occupations;
- (b) studies of specific industrial sectors, to assess the manpower implications of technological and other change.

Vocational training is increasingly being looked to as offering the solution to many manpower and social problems. It is perhaps not inappropriate to point out that vocational training is but one of a number of interrelated ways of fitting people to jobs and jobs to people. Other important parts of this process include:

- educational preparation (including pre-school education);
- recurrent occupational guidance and counselling;
- competent selection for jobs based on relevant job criteria;
- recurrent education;
- motivation;
- effective utilization of talents;
- appropriate working conditions;
- proper equipment design and correct working methods;
- an equitable reward system;
- appropriate methods of work organization.

If it is accepted that these items are interrelated parts of the one system of fitting people to jobs and jobs to people, then we must also accept, once and for all, that education and training are not separate and distinct from each other, and that a more coordinated approach to educational and vocational training is required.

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# Information

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## 86. *Do industrial undertakings involve employees in training decisions and, if so, how, and to what effect?*

This is a question to which the United Kingdom Training Services Agency (TSA) asked its Survey Unit to provide an answer. The question arose because the Manpower Services Commission (MSC) had decided that Industrial Training Boards (ITBs) should take steps to encourage companies — within the scope of their activities — to keep employees informed about training programmes and to involve them in the planning and evaluation of these. As an executive arm of the MSC, the TSA is responsible for advising the ITBs on the best way of implementing MSC policy in their respective industries. Basically, the survey was undertaken to report on what is actually happening about employee involvement in training so that decisions about the implementation of the MSC policy could be made, taking the current position fully into account.

It was decided that the best way to get a picture of what is happening would be to have discussions with staff from all the ITBs, since they are in constant touch with individual companies in their industries, advising them on training matters, and would therefore have an up-to-date idea of what progress has been made in involving employees in training decisions. Most of the nationalized industries were also involved in the discussions and the information gained at national level was augmented by visits to private companies and by an examination of the operation of the consultative arrangements in one of the nationalized industries at regional and local level.

The purpose of this article is not to set out the findings of the UK survey — its report has not yet been published — but rather to seek information. One of the Survey Unit's objectives was to review the position in those European countries which enjoy a high reputation as pioneers in the field of promoting employee involvement. Because of a veritable mountain of written material devoted to industrial democracy, for example, in France, Germany and the Netherlands, the main problem seemed to be one of selection from an overabundance of choices. Most of the material available to the survey team deals with the institutional arrangements which the various countries have made to promote employee participation in general terms and the implementation of these. Although works' councils have the right to be consulted about training, in the material available there is no indication of the extent to which these rights are exercised and to what effect. In fact, where a reference is made to topics discussed at works' council meetings training does often not appear on the list.

Is it, therefore, correct to conclude that although employees have been given the opportunity through works' councils to influence the training provided by their employers, it is an opportunity they use seldom, if at all? If this is the case, does it follow that in general employees are not really all that much interested in the training they receive? Or is this apparent lack of interest to be attributed to other factors? For example, where companies employ full-time training staff, is the lack of interest in training (judged by the infrequency with which the topic is discussed by works' councils) an indication that the company's training department is doing its job well and that the employees regard the training provided by the company as satisfactory and therefore use the work's council's machinery to resolve what

they view as more pressing issues? Could it also be that training is settled informally as a result of the daily contact between management and employee representatives in companies which do not employ training staff? When work's councils do spend time discussing training matters, do they do so only as a result of the management taking the initiative and placing the topic of training on the agenda?

The improvement of vocational training and the encouragement of worker participation are emphasized in Community policies and other Member States will, no doubt, have studied this relationship. It is hoped that this brief article will prompt a response from other contributors and an account could then be given of how employees actually are involved in training and of the improvements which have occurred as a direct consequence.

## 87. *A vocational training information service — The INFFO centre*

On 1 March 1976 a centre supplying information on continuing training, the INFFO Centre, opened in Paris. Its function is 'to develop a programme of information, documentation and study in the field of continuing training and to put this into effect according to the general policy adopted in these matters'.

The Centre is the offspring of the Centre National d'Information pour le progrès économique — CNIPE (National Information Centre for Economic Progress), which was established in 1968.

The CNIPE had been in operation for three years when, as a result of particularly constructive discussions between relevant authorities, the French system of continuing vocational training in the framework of continuing education was instituted in the law of 16 July 1971.

Almost immediately the need to coordinate the collection and supply of in-



formation on vocational training became rapidly apparent.

As one would expect the CNIPE increasingly took on the role of an information service on continuing training but without detriment to its function as an information service on economic progress.

On 7 July 1975 the French Government asked the Secrétariat d'État chargé de la Formation Professionnelle (Secretariat of State for Vocational Training) to put forward proposals to the Administrative Council of the CNIPE concerning a re-orientation of its aims and a modification of its statutes so that greater emphasis would be laid on specialization in the training field.

On 24 November 1975, the Association agreed to devote the function of the Centre exclusively to information on continuing training.

Thus it is an information service on all matters concerning continuing training which has been initiated as a result of actions already undertaken in this field by the former CNIPE.

The collection of information is facilitated by contacts between the Centre and the Secrétaire d'État à la Formation Professionnelle and the presence of employers' and trade union Federations on the Administrative Council, on which the Ministères du Travail, de l'Éducation, de l'Agriculture, de l'Industrie (Ministries of Labour, Education, Agriculture and Industry) and the Secrétariat d'État aux Universités (Secretariat of State for Universities) are also represented.

The distribution of information takes place through numerous channels: publications, reviews, manuals, brochures and pamphlets. Furthermore, in order to allow a better understanding of the continuing training system instituted by mutual agreements and legislation, the Centre organizes information and training seminars for those responsible for decisions on training policy. The Centre also provides up-to-date annual reports on training courses and training establishments which are supplied to authorities such as the Agence Nationale pour l'Emploi (National Employment Agency), the Associations pour l'Emploi dans l'Industrie et le Com-

merce — ASSEDIC (Associations for Employment in Industry and Commerce), vocational organizations, career-guidance officers in the armed forces, and the Commissions Paritaires de l'Emploi (Parity Commissions of Employment). This allows a better knowledge of the possibilities offered to those who, at some time during their career, need to undergo training.

The INFFO Centre publishes a bi-monthly review entitled 'Actualité de la Formation Permanente' (Continuing Training News). It is also responsible for the distribution of the 'Bulletin de Liaison du Secrétariat d'État à la Formation Professionnelle' (Liaison Bulletin of the Secretary of State for Vocational Training). At the moment a filing index on matters concerning continuing training is being compiled and the Centre is also publishing the results of studies and research in this field.

Members can avail themselves of a telephone information service (IFP) on legal and practical problems in training and also of an information service on training courses available in France (INFFORMA-APPEL).

In the course of 1976 the Centre must develop its functions in order to expand the services which it currently offers professional organizations, authorities and semi-public bodies.

The INFFO Centre is situated in the Tour Europe, Cedex 07, 92080 Paris La Défense, and at 21 rue Michel le Comte, 75003 Paris, it has at its disposal rooms equipped with audio-visual material as well as a large amount of documentation on vocational training.

## 88. Vocational training in the construction industry in the United Kingdom

A major effect of the Industrial Training Act of 1964 has been the development of improved training schemes

designed to meet the needs of apprentices and trainees in the construction industry.

The Construction Industry Training Board (CITB) was one of the first of the 26 (now 23) training boards appointed under the Act. It was set up specifically to meet the needs of the main sectors of the industry: building, civil engineering, electrical engineering services, and mechanical engineering services. Some 40 000 firms employing approximately 1 100 000 employees are included on the Board's register.

The Industrial Training Act which has been amended and expanded by the Employment and Training Act of 1973, describes the functions of an industrial training board as follows:

- to provide or arrange adequate courses and other training facilities for the industry
- to approve courses and facilities provided by other persons
- to prepare and publish training recommendations
- to arrange for selection and attainment tests
- to award certificates of attainment
- to carry out research into matters relating to training for the industry, and generally,
- to give advice about training in and for its industry.

The CITB has declared that, within the scope of these functions, its principal objectives are to serve its industry by:

- improving the quality of training
- improving the facilities available for training
- helping to provide enough trained people for its requirements

The Board is appointed by the Secretary of State for Employment and consists of a chairman and deputy chairman, ten members representing employer interests, ten members representing employee interests and seven members representing educational interests. In August 1965 the Board commissioned the Industrial Training Service to carry out a survey of the training requirements of the industry, and the results

were accepted as the basis for the Board's policy and main training objectives. Under the terms of the Industrial Training Act the Board is empowered to raise a levy on the industry to cover the cost of implementing its training policy. Broadly speaking, the levy is calculated on the average number of employees in an establishment on set dates each year and the rate of levy varies according to the occupations of the employees. The levy is raised annually by a statutory instrument entitled 'The Industrial Training Levy (Construction Board) Order' made by the Secretary of State for Employment in accordance with proposals submitted to him by the Board after consultation with its industrial committees. It is the Board's practice to indicate possible levy rates at the same time as training grants are announced. Originally, all the Board's activities and administrative costs were financed from the levy, but, since April 1975, the Training Services Agency — TSA — has assumed financial responsibility for the Board's administrative costs, leaving funds collected by levy solely for improving training in the industry. The TSA also provides financial support for certain key areas of training.

The Board's main instrument for assisting industry to improve its training is its annual grants scheme. Grants are paid to encourage employers to ensure that their trainees are properly trained including, where appropriate, attendance at courses of further education. Specific grants are available for approved courses run by independent organizations such as safety courses, in-company courses, course programmes, research, group training and other activities.

To help firms improve their training and qualify for grants, the Board has established Field Services which operate in Scotland and the six regions of England and Wales. Each region, which is divided into areas to meet more closely the needs of the industry, is staffed by a regional manager supported by a number of area managers and qualified training advisers. This field staff works in conjunction with four development teams at headquarters who serve the training requirements of the Board and its industrial committees. The field training advisers, most of whom have come from the building

crafts or have had wide experience in other branches of the industry, help firms to assess their training needs and carry out analyses of jobs and skills, prepare training plans and programmes, choose suitable courses, draw up satisfactory systems of recording training, recruit and select suitable trainees and (where appropriate) instructors, as well as develop their training policies generally.

Firms that are too small to employ their own training officer are encouraged to form group training associations. They share a training officer and the Board provides financial assistance towards their operating costs. At present there are 135 groups supported by some 2 270 firms with a total of 137 290 employees. They include general builders, electrical and mechanical engineering contractors, painters and decorators, civil engineering contractors, roofers, scaffolders and steeplejacks.

Training advisers and group training officers spend a large proportion of their time visiting firms and advising on suitable training for operatives in both craft and general construction operations. Generally speaking, it has always been the policy of the Board to encourage employers in this industry to provide or improve their own training facilities rather than to undertake direct training with its own staff. In certain fields where no training is available, however, and where it is unlikely that either individual employers, education authorities or government departments will be in a position to provide training facilities, the Board has decided to embark on direct training programmes.

A significant development took place in 1969 when the Board decided to establish a civil engineering college at Bircham Newton in addition to the already established training facilities in plant and crane operations, scaffolding, industrial painting, etc. Here school-leavers with leadership potential could be given concentrated training in a wide range of civil engineering and construction skills so that, after a period of experience on site, they would be capable of becoming foremen and supervisors. The boys, who are sponsored by their firms, are interviewed at the college before they are selected for entry. This serves two purposes: it ensures correct recruitment and selec-

tion and gives the boys an opportunity to make up their minds whether or not they wish to pursue a career in the construction industry. 171 boys were attending the college in 1975 and the number is likely to increase to over 250 in 1976.

Meanwhile, other development work within the CITB has been continuing and training recommendations have been prepared and published covering scaffolding operatives, building technicians, plant mechanics and operatives, thermal insulation operatives, plumbers, ductwork erectors, mechanical engineering services technicians, apprentice contracting electricians, sheet roof workers, metal arc welding and sprinkler erectors. A model training scheme for shop-fitting technicians has been prepared and published.

Detailed instructional material has also been prepared in the form of instructors' and students' manuals, to assist training organizations in running courses in line with the development work carried out by the Board's staff.

In the Board's current training plan, top priority is given to encouraging first year off-the-job craft training, also known as 'New Entrant Training'. The central feature of this scheme is that trainees receive 16 weeks' practical off-the-job training together with eight to 12 weeks further education at a technical college. Courses may be offered as a block or may be broken up into smaller units allowing times for on-site experience. In areas where the demand justifies it, and where there are no suitable alternative facilities available at local colleges, training centres have been opened to provide initial off-the-job training in craft work. These centres were set up at the request of local employers, and are run by a management committee composed of employers, trade union representatives and an educationalist, with the services of a CITB training adviser. The scheme has been welcomed by the building, heating and ventilating, plumbing, and electrical contracting sectors of the industry.

In the specialist building sector courses are planned for felt roofing, mastic asphalt, ceiling, floor and wall tiling and floor-covering trades for the 1975/1976 training year. These courses vary

from two to 20 weeks in length. A new training centre has been established in Scotland to meet the urgent demand for skilled men in scaffolding, bar bending, steel fixing and formwork erection.

The industry has been experiencing a serious recession, and the numbers of apprentices recruited by employers in 1974/75 and 1975/76 were substantially below the numbers estimated by the Board to be necessary to meet the manpower needs of the industry when the economy recovers. Consequently, with substantial financial assistance from central government funds provided through the TSA, the CITB mounted a range of initiatives to meet the shortfall in recruitment. These included increased grants to employers recruiting apprentices, premium grants to employers recruiting apprentices additional to their immediate needs, and the sponsorship by the CITB of trainees during their initial off-the-job training. In view of the continuing depressed state of the industry, special measures to maintain recruitment levels will again be necessary in 1976/77.

Much remains to be done to meet the needs for vocational training in the many diverse activities of the construction industry. Close cooperation between employer's organizations, trade unions, education authorities, government departments, and the CITB with its industrial committees and specialized staff, provides the means by which new policies can be put into effect for the benefit of the trainees, the industry and, ultimately, the nation as a whole.

## 89. *Training in the industrial technologies in France*<sup>1</sup>

There are few countries where training in the industrial technologies is more varied and widespread than it is in

France. Here, as in the UK, the need for better coordination between training methods and the requirements of industry is apparent. Indeed, this is one of the principal objectives of training planning, a subject dealt with elsewhere.

At present in France there is no body equivalent to the British Committee for Industrial Technologies — CFIT, although a working committee on the training of engineers is in the process of being set up by the Ministère de l'Industrie (Ministry of Industry) and the Secrétariat d'État aux Universités (Secretariat of State for Universities).

At the same time, numerous efforts have been made to bring universities and industry closer together, both on a vocational and a teaching level, so that for each vocational sector there exists a respective advisory committee.

Rather than present the efforts made towards coordination by one specific sector or for one particular technology it has seemed preferable to present the situation as a whole in higher technological education.

Thus here only higher engineering or economic training is considered, leading to sectors of national production. Basically, the article deals with the 154 engineering schools, their various levels and intakes, and recent technological training instituted by universities.

### **Engineering qualifications attained from higher technological education**

Higher technological education trains to the levels of higher technician (level III) and graduate or senior engineer (levels I and II).

The situation with regard to diplomas is very systematic for the training of engineers. For other types of training, however, it is much more flexible, particularly in the tertiary sector.

The training of higher technicians is founded on a knowledge of the necessary basics (A levels or equivalent) to which is added a final training period of two years. These studies prepare for engineering functions in production,

the tertiary sector (economic and social) and eventually applied research. Studies can be undertaken in state technical high schools to gain the Brevet de Technicien Supérieur — BTS (Higher Technician Certificate) or in the University Institutes of Technology, which provide short-term higher education resulting in the Diplôme Universitaire de Technologie — DUT (University Diploma of Technology).

Graduate and senior engineers carry out functions involving designing, planning and management. Studies last between four and six years after A levels and eventually they may lead to specialization or research. The French system, complex as it is, allows study in a variety of establishments (Engineering Schools, University teaching units, Schools of Commerce, etc.), both public and private, and in both secondary and tertiary sectors. Some of these are administered by a ministerial department.

### **Scientific colleges**

Colleges for graduate engineers also play an important role. Among the various associated Ministries, the Secrétariat d'État aux Universités controls the largest number of establishments.

The most important group is constituted by the 35 Écoles Nationales Supérieures d'Ingénieurs — ENSI (National Engineering High Schools). Approximately twenty other schools have a more defined status, such as the École Centrale des Arts et Manufactures (Central School for Arts and Manufacturing) and the Instituts Nationaux de Sciences Appliquées (National Institutes of Applied Science).

Thus, in 1974, out of 9 357 diplomas awarded, 4 465 were through establishments controlled by the Secrétariat d'État aux Universités, 2 889 by Engineering Schools associated with other Ministries (Agriculture, Industry and Research etc.), and 1 982 by private schools.

The most prestigious establishment is the Ecole Polytechnique (Polytechnic School) which offers a general scientific education of very high quality. The

<sup>1</sup> Continued from Item 82, Issue 1-1976.

other engineering schools, e.g. the *École Nationale Supérieure des Mines de Paris* (Paris National High School for Mining), guarantee a high standard of scientific education and technological training.

It is not easy to distinguish between establishments offering general training and those offering more specialized training. Highly specialized schools receive students who are already graduate engineers and acquaint them with a specific branch of engineering, e.g. the *École Nationale des Télécommunications* (National School of Telecommunications).

Admission to courses in the oldest schools is achieved through national competition. Preparation for this examination requires special study of at least two years in 'preparatory classes' in certain high schools. Other establishments admit students on the basis of qualifications, past records and interviews. They organize their own preparatory courses and guarantee continuous assessment of students. In all these cases the selection procedure is strict. Another important point relates to the pedagogical system: training methods, duration of education, the place of technology and the concept of multidisciplinary.

On the question of personnel, apart from permanent staff these establishments also employ part-time staff, such as engineers with industrial experience or qualified experts to teach subjects of a more technological nature.

### **The evolution of universities**

The traditional role of universities in France has been to provide a high academic and cultural education, to train students and to promote scientific research. This situation has gradually developed.

Since 1955 several reports have shown the need to increase the number of engineers and engineering bodies.

In 1957 a law was passed to set up the *Institut National de Sciences Appliquées de Lyon* (Lyons National Insti-

tute of Applied Science), an establishment providing training of a different nature to that of the *grandes écoles* (university colleges) and traditional universities. At the same time, in the field of business management and administration training centres such as the *Instituts d'Administration des Entreprises* (Institutes of Business Administration) have also developed.

The evident requirements in the sphere of technician training and the considerable increase in student numbers have resulted in higher education establishments lengthening their final courses.

The creation of the *Instituts Universitaires de Technologie* — IUT (University Institutes of Technology) catered for the need for short-term higher education with a final period of training, involving the training of young students in new functions in the engineering sphere. At present there are 60 Institutes divided into approximately 270 departments.

In the long-term aspect university training has been instituted to ensure better coordination between economic requirements and technological education.

The 66 *Maîtrises de Sciences et de Techniques* (Schools of Science and Engineering) correspond to this need. However, they do not directly award an engineering diploma, although a few universities are entitled to do so.

Finally, the reform of traditional university education places special emphasis on the vocational aspect whilst maintaining the vital general and theoretical training based on university education. In the third cycle technological training is acquired through study for the *diplôme d'études supérieures spécialisées* — DESS (diploma of specialized higher education), the third cycle doctorate or an engineering doctorate. The DESS is awarded after a year's study which allows holders of a 'maîtrise' (master's degree) to acquire vocational experience. In the tertiary sector the *certificat d'aptitude à l'administration des entreprises* (aptitude certificate in business administration) is of the same standard. The title *docteur-ingénieur* (doctor of engineering) requires three years' study after the attainment of a diploma of intense study and the preparation of a research project.

### **The Tertiary Sector**

The situation in the tertiary sector has changed in the last few decades, although its structure is still rather complex. There are a number of public and private centres at levels III, II and I in the field of management and business administration.

The *Secrétariat d'État aux Universités* controls a few specialized institutes within the network of the institutes of business administration, and tertiary departments in the IUTs. These latter departments number 47 in both management and commercial engineering: they accommodate 20 000 students and in the academic year 1974-1975 7 000 diplomas were awarded. Further to this, specialized *maîtrises* in management and data-processing management (MST, MIAG) were instituted.

Apart from the public system, training centres such as the *École des Hautes Études Commerciales* — HEC (School of Higher Commercial Education), have been set up by commercial establishments (Chambers of Commerce and Industry).

In the 44 consular and private establishments in 1975-76 there were 3 015 students at level III, and 9 860 students at levels I and II. Together the public and private schools had a total of 36 463 students and they awarded 13 737 diplomas.

In contrast to events in the secondary sector the fact that these establishments have recently been set up and the freedom within the system have given rise to a competitive spirit between the various institutions. The valuation of degrees is determined by prevailing circumstances: the difference between the levels is becoming increasingly recognized.

### **Continuing vocational training**

The 'promotion of work' has for a long time been practised by the *Conservatoire National des Arts et Métiers de Paris* — CNAM (Paris National Conservatory for Arts and Employ-

ment) and its associated regional centres. Also, since 1959, the Instituts de Promotion Supérieurs du Travail (Institutes for the Further Promotion of Work) have contributed to training measures.

Holders of a DESS who have at least two years' vocational experience may participate in further training either at the CNAM or in other schools.

Holders of a BTS, a DUT or equivalent training qualification can attain an engineering diploma by taking up their studies again after three years' vocational experience.

These latter arrangements are rarely applied in practice but measures are under consideration to make them more wide-ranging. Thus the possibility is being considered of awarding the engineering diploma of continuing training to holders of a science and engineering maîtrise.

In a more general perspective a number of training channels are open to adults. They are financed by the State or by industry, and they afford the opportunity to large numbers of workers to improve or maintain their level of knowledge and competence.

## Conclusion

Developments in higher technological education have been evident for some decades.

Parallel to better consultation between the directors of teaching establishments there has been the opening up of universities to the technological sectors.

Study and coordination groups have been set up, notably the Fondation Nationale pour l'Enseignement de la Gestion des Entreprises (National Foundation for the Teaching of Business Management) and the Comité d'Études sur les Formations d'Ingénieurs (Study Committee on the Training of Engineers).

Finally, the desire to make the system more coherent is evident in a project

organized by the Secrétariat d'État aux Universités. The project aims at developing this important area of higher education and adapting it to correspond both to the aspirations of students and the needs of the nation.

## 90. *Training in the off-shore oil industry in Denmark and the Netherlands*

In addition to the UK, Ireland and France (see Vocational Training Bulletin, Issue 2/3-1975), Denmark and the Netherlands are now running courses for off-shore oil personnel.

Courses for drilling technicians in Denmark are held at machine technology colleges and last seven weeks. Besides pure technical subjects, such as the principles of oilwell drilling and oilrig structure, English terminology, off-shore safety and work organization are also studied.

In the Netherlands, the responsibility for training in the off-shore oil industry does not lie with government departments, but in the hands of private industry.

Dutch exploration and development of oil and gas fields takes place all over the world and more than 2 000 drilling places have been found in the sea. A wide variety of adequately trained personnel is naturally needed and each year Dutch industry trains vast numbers of graduates, technicians and administrative personnel. Recruits are usually between 21 and 26 years of age and come straight from university or a hogere technische school — HTS (higher technical school). For the exploration stage graduates in geology or geophysics are required and for production and development young people holding a degree in one of the following: chemical engineering, civil engineering, mathematics, mining engineering or physics.

The initial training period for the prospective exploration geologist lasts for about five months, during which he will be acquainted with sub-surface geology, micro-palaeontology, topographic surveying and photo-geology. The geophysicist will spend six months in theoretical and practical training, studying geophysical techniques and seismology. Five to six months' introductory training is also compulsory for petroleum engineers and field engineers, including practical work on an oil rig.

There is also an on-going need for research graduates in science subjects. The type of research carried out falls into three categories:

- (1) 10 % pure research
- (2) 70 % applied research
- (3) 20% research in the form of a technical service to customers.

Men and women who enter this area are generally expected to be productive immediately and therefore no initial training is given.

A boortechnicus (drilling technician) must possess technical and practical skills as well as an ability to organize. After a few years, a drilling technician with an HTS diploma can advance to boormeester (drilling master) and further to chefboormeester (senior drilling master). The latter is responsible for the working of the entire drilling installation and the transport of staff, goods and material to and from the oil-rig. The training is both theoretical and practical and starts with a year on an oil rig, followed by a ten-week course in drilling techniques in a training centre.

After this period, the apprentice drilling technician is placed on an oil rig as assistant drilling master. He is expected to prepare himself for his final examination during this period. A later promotion to senior drilling master demands at least three to four years practice followed by an advanced course.

## Source

Shell Internationale Petroleum Maatschappij NV Afdeling PNEH, Den Haag.  
 Direktoratet for Erhvervsuddannelserne København.

## 91. *Proposed training policy for EEC personnel*

In March this year, the Directorate-General for Personnel and Administration of the Commission of the European Communities published the training policy programme which the Training Division plans to institute in 1976 for EEC personnel.<sup>1</sup> This programme places emphasis on the following measures.

### **Language training**

These courses seek to equip EEC personnel with the linguistic standards required for the execution of their duties whilst also serving a more general purpose.

To this end the Commission arranges general courses (three levels of ability in the EEC's official languages), specialized courses (conversation and writing), courses for interpreters and translators and courses in non-EEC languages, as required.

### **Training on entering the service**

This aims at familiarizing recently recruited staff with the function and objectives of the EEC, acquainting them with procedures in policy decisions and preparing them for the tasks they will have to fulfil in the EEC service. The constitution and duration of this training are related to the needs of each category of staff.

### **Vocational retraining and improvement of capacities during employment**

These measures involve:

- (a) the general improvement of knowledge and specialization in the du-

ties performed (courses in management and economic affairs, seminars for secretaries, participation in external activities organized by specialized bodies, e.g. information processing);

- (b) training of a general nature (information visits to member countries, lectures on member countries, information conferences);
- (c) longer courses concerning career progression and the improvement of knowledge (courses on economic affairs and on administration and financial management, a training course for staff in categories C and D and for local staff).

It is further planned to arrange training courses on the governments of member countries to ensure a better mutual understanding of public, national and community functions.

## 92. *Reforms in higher education in Denmark, The Federal Republic of Germany, France and Ireland*

### **France**

The reorganization of the structure and content of French university education has been completed with the recent decree on the reform of second-cycle studies issued by the Secrétaire d'État aux Universités (Secretary of State for Universities). In principle second-cycle studies last two years and are open to students who have completed the first two-year cycle and who have obtained the *Diplôme des Études Universitaires Générales* — DEUG (university diploma in general studies). The studies aim at providing a scientific education of a high standard which will prepare students for working life and the exercise of professional responsibilities. To this end 'stages' (periods of practical training) may be arranged.

Under the new system, students who have completed the first year of the second cycle will sit for the licence (bachelor degree) and those who obtain it will be allowed to continue for the second year, at the end of which they will sit for the *maîtrise* (master's degree). Students who succeed in passing the *maîtrise* will then be entitled to undertake third-cycle studies which lead to a doctorate.

The licence will also be a terminal degree for students wishing to leave university after three years.

Study for this degree should result in students acquiring a fundamental knowledge in one or more disciplines, interdisciplinary training and training with a vocational objective. Study for the *maîtrise* should provide students with both a fundamental scientific training in preparation for third-cycle studies and a technological training orientated towards working life.

Each university will be able to award its own degrees, establish its own conditions of admission, choose the subjects in which it will offer degree courses and determine the content of these courses. However, each curriculum shall only be valid for five years, after which it will be re-examined regarding its suitability in relation to the needs of the labour market. The universities will also decide their methods of continuous assessment and terminal examinations.

Universities will submit proposals by mid 1977 to the *Secrétariat d'État* (Secretariat of State) in order to obtain national accreditation for the degrees awarded at the end of the courses. Initially, the proposals will be examined by one of a number of national technical study groups to be set up by the Secretary of State. A majority of the members of each group must be from the universities, but one third must be representatives of industrial, economic, social and cultural concerns.

The changeover to the new system is expected to begin with the first licence course in October 1977, the initial *maîtrise* course following in 1978. The present system is expected to be phased out by October 1979.

<sup>1</sup> EEC Informations Administratives, No 84, 12 March 1976.

## Federal Republic of Germany

On 30 January 1976, after almost six years of discussion, the Hochschulrahmengesetz (Higher Education Act) came into force. The Act is aimed at reorganizing the higher education system to enable the introduction of study courses graded according to content and duration. In order to realize this objective various types of higher education institutions are to be expanded or merged by way of joint bodies to become comprehensive universities. In the latter case they would still retain their legal autonomy. Thus integrated, comprehensive universities and cooperative comprehensive universities will enjoy equal status. In those cases where it is not possible to form comprehensive universities until a later date, cooperation between higher education establishments is to be ensured.

Under the study reform, the establishment of supraregional commissions is envisaged which will examine all study courses as to their relevance for specific fields of vocational activity. In particular, these commissions are to elaborate proposals for establishing the normal duration of studies in the various courses.

With regard to establishing the regulations governing admission to higher education, the Hochschulrahmengesetz partly retains the present procedure for admission to those courses where enrolment restrictions (*numerus clausus*) are in force, but envisages a special selection procedure in those cases where the number of applicants exceeds the number of study places available, or where the waiting period for admission is unreasonable. This special selection procedure will be applied in addition to the assessment of candidates' qualifications and will probably take the form of tests, although it may possibly also involve interviews or practical work.

A further important section of the Act deals with the status of members of higher education establishments. The Act provides that the number of members of collegial bodies, committees and other panels should be determined according to their tasks, and also according to the qualifications, function and responsibility of each individual among

professors, students and other staff members. Uniform principles are also laid down for the structure of staff in German institutions of higher education. In principle, all staff members engaged in teaching and research on a full-time basis are professors. However, this fact does not exclude a varying assignment of research and teaching tasks, nor grouping under different salary scales.

In the field of distance and further education, the Hochschulrahmengesetz assigns specific tasks to institutions of higher education. The Federal Länder, for example, have been given the opportunity of making provision for examinations enabling would-be student-full-time basis are professors. However, this fact does not exclude a varying tasks, nor grouping under different salary scales.

The Federal Länder are bound to amend their own laws to correspond to the Hochschulrahmengesetz by January 1979.

## Ireland

For some time now the Irish Government has been considering proposals for the structural reform of higher education. In December 1974, the Minister for Education announced plans to terminate the existing binary system and introduce a comprehensive system whereby the major colleges of technology would be brought into the university sector and award degrees. These plans are currently still under consideration.

Under the new system there would be three universities in Ireland: University College, Dublin, which would be made a university in its own right, the University of Dublin which would be the new name for Trinity College, Dublin, and the National University of Ireland, which would be constituted by the University Colleges of Cork and Galway.

Other higher education establishments such as the two National Institutes of Higher Education — NIHE would evolve into constituent colleges of these three universities or possibly become

autonomous degree-awarding institutions.

The new proposals would involve the establishment of the Council for Technological Education to supersede the former National Council for Educational Awards. The new council's role would be to plan and coordinate courses and to validate and award non-degree qualifications in the NIHEs and Regional Technical Colleges.

Coordination between the two Dublin Universities would be undertaken by a Conjoint Board with the aim of ensuring rational use of resources and mobility of staff and students between them.

## Denmark

In September 1975, the Undervisningsministeriet (Danish Ministry of Education) presented a nine-point programme for the future planning of higher education in Denmark. The first three points are in the process of being passed by the Folketing (parliament), while the other six are still under consideration.

In Denmark, as in Ireland and the FRG, the need for structural reform in higher education has been apparent and to this end the Ministry of Education has recommended the following measures: the improvement in coordination between education and the requirement of the labour market; the introduction of shorter study periods with the opportunity to study a wide range of subjects; the facilitation of transition between different courses; the assurance of more suitable course combinations and improved opportunities for part-time study for those in full-time employment; and the lessening of chances for students to drop out.

The proposals which are in the process of being passed by parliament are the following:

- (1) The maximum number of students in higher education in each year up to 1980 shall not exceed 20 000.
- (2) The Undervisningsminister (Minister of Education) together with the working party on education set up

by parliament shall decide on the numbers of students to be admitted to institutes of higher education or to a specific course. He will also have the right to decide on numerus clausus for certain subjects.

- (3) Expansion of higher education should concentrate on the area to the west of Store Baelt.

Other points included in the proposals are the expansion of shorter higher education courses and the promotion of educational and vocational training guidance within the entire education system. In this connection it is planned to set up a body to deal with the planning of supply and demand in the labour market for people in higher education.

The Ministry would like to see the introduction of a budget system to facilitate the allocation of resources to education and research, thereby making the administration of higher education more efficient. Similarly, the establishment of a student registration system to find out whether students complete their studies or abandon them at some stage would also contribute towards efficiency.

The final point discussed in the proposals recommends the division of the academic year into three terms instead of the present two.

#### Sources

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Undervisningsministeriet, København.

##### FEDERAL REPUBLIC OF GERMANY

Dr. Eberhard Böning  
Bundesministerium für Bildung und Wissenschaft, Bonn, 1976.

##### FRANCE

Journal Officiel de la République Française. Paris: 20 January 1976.  
Times Educational Supplement. London: 30 January 1976.

##### IRELAND

Statement by the Minister for Education. Dublin: 16 December 1974.  
Times Higher Education Supplement. London: 27 December 1974.

### 93. *A European dimension in British education*

The UK section of the European Association of Teachers held a conference last autumn on teaching European Studies in secondary schools in the UK. Representatives of examining boards, the Department of Education and Science and the teaching profession presented papers describing the current status of this discipline and expressing their views on the best methods of promoting an understanding of European affairs among young people.

European Studies courses are already flourishing at degree level in the higher education sector. However, at present they are not widely available to secondary school students. There is no GCE 'O' level course in European Studies and therefore only children in the lower ability range who follow Certificate of Secondary Education — CSE courses are given the option of acquiring an element of a European dimension in their studies at this level. A 17 plus examination has also been designed for children in this ability range who follow a sixth-form course.

It was felt that the development of tolerance and appreciation of what is different in other countries and the attainment of an understanding of European affairs is best achieved by the promotion of exchange schemes. Activity holidays in which both foreign and British children participate were considered more beneficial than traditional exchange schemes and holidays of this sort have already been arranged in England and France. In order to avoid a deterioration in the status of pupil exchange help should be sought from all sources. One such source would be the EEC, although as yet there is no firm Community policy on exchange and language teaching.

Cooperation between staff members also plays an important part in nurturing the pupils' understanding of European affairs. Although opinions on which teachers would be best equipped to teach this subject varied, it was generally considered that a team of teachers from various disciplines could best teach the various aspects of this sub-

ject. It was emphasized that European Studies is not a course of background studies for one language. Basically it is a combined study of European history and geography, but some aspects of culture and economics may be included. There should be no language component in the course, but all children who have the ability to learn a foreign language should be encouraged to do so. Syllabus planning therefore requires close liaison with the history and geography departments to avoid duplication. Also mentioned was the need for in-service courses for teachers.

The question of a European dimension in the UK school curriculum needs investigating and it was suggested that a check should be made on a sample of secondary school pupils to see how much of their tuition had involved discussion and instruction on life in Europe. If schools in the UK could teach all subjects in a European perspective, the need for European Studies courses would be less urgent.

#### Source

The Teaching of European Studies in Secondary Schools. European Association of Teachers. London: November 1975.

### 94. *Short news item*

#### School television

In November 1975 producers of television programmes for schools from five Member States on the European Committee for School Television met to discuss the completion of a series of three films on 'Transport in Europe' and to plan future programmes on 'The Problems of Migrant Workers' Children' and 'The Third World'.

The European Committee on School Television was set up by the European Commission in 1967 to promote cooperation in the production of television films for schools on the problems of European integration. The Committee



has been actively involved in the production of about 20 films, most of which are suitable for children in middle schools. Complementary course material, e.g. slides, printed notes etc., is available with the films.

#### Source

Press release IP (75) 210. Commission of the European Communities. Brussels: 1976.

### Initiation of Experimental Classes for Children of Migrant Workers in Europe

Following the decision of the Committee of Advisers to the Special Representative of the Council of Europe in May 1975 to establish eight experimental classes for children of migrant workers under the auspices of the Council, the first pupils have just completed their first academic year. In France, classes have been set up by the CREDIF — Centre de Recherches et d'Études pour la Diffusion du Français (Research and Study Centre for the Promotion of French) for European children, and in Germany the Ministerium für Bildung und Wissenschaft (Ministry of Education and Science) and the Italian Consulate in Frankfurt have organized tuition for Turkish and Italian children. Asian children in the UK receive tuition arranged by the Birmingham District Council Education Department and similar schemes have been set up for Spanish and Italian children in Switzerland and for children of Turkish origin in Belgium. The Council hopes that similar schemes will be organized for the coming academic year.

#### Source

Council of Europe.

### London conference on specially gifted children

A world conference held in London last September brought together delegates from more than 50 countries to

discuss the problem of educating specially gifted children. It was argued that whilst facilities exist for teaching slow learners, the needs of highly intelligent children were often ignored through envy or misguided sentiments for egalitarianism at all costs. Gifted children should be recognized as such and given the same attention as any special group.

Views differed as to how these children should be treated within educational institutions and how the need for a new alliance of teachers and scholars which would translate ideas into methods and materials for a new style of teaching could be realized.

Some conference delegates thought that gifted children should not be separated from ordinary children; at an early age they should spend more time on developing problem-solving skills and ingenuity and on considering values, morals and ethics. Others suggested that the kind of skilled teaching required could only be provided in selective schools and that this type of school could bridge rather than exacerbate social divisions.

Little new came to light regarding the difficult question of defining and identifying gifted children. IQ tests are often inadequate in identifying exceptional talents, since these talents may lie in the fields of aesthetics and ethics.

At present, the British National Association for Gifted Children provides support for parents in 35 branches around the UK which run out-of-school enrichment classes for the children.

#### Source

Knipselkrant. Den Haag: 14 October 1975.  
British National Association for Gifted Children. London.

### Teaching companies: A new UK scheme in engineering training

A recent report of a working party set up by the Science Research Council (SRC) and the Department of Industry

(DoI) recommends the establishment of 'teaching companies' to improve the supply of qualified engineers for industry. The teaching companies would be the result of close cooperation between selected manufacturing companies and universities and polytechnics, and would involve the training of young engineers at postgraduate level in the advancement of manufacturing engineering under the supervision of industrial and academic staff. The trainees' practical work in the firm would be complemented by instruction at their university or polytechnic.

The setting up of such companies would mean the establishment of a new, independent organization to coordinate and promote the proposed plan. The functions of this organization would be to interest firms, universities and polytechnics in the schemes, to foster good relations with professional institutions, the Engineering Industry Training Board and research associations, and to help trainees find jobs in suitable companies. The scheme would be financed by the SRC, the DoI and the participating firms and educational institutions. A few schemes are already in progress, involving Aston University, Salford University, the University of Manchester Institute of Science and Technology and three industrial companies.

The report proposes that by 1978 programmes should be running in ten companies, the cost of which would be in the range of £2 million.

#### Source

The Times Higher Educational Supplement 19.12.75 & 2.4.76, London.

### Educational voucher schemes in the UK

The publication of the report 'Experiment with Choice in Education' by the Institute of Economic Affairs has revived a discussion on educational vouchers in the UK, which began in the 1960s. Under a voucher scheme parents would be given vouchers, each representing the cost of a year's state education. They would then be able to choose a school for their child and

present the voucher to the school. The income of each school would therefore depend on the number of pupils it attracted. In this way, the parents could influence the subjects taught and the levels of attainment reached. Decisions in these areas have traditionally been left to the discretion of headmasters and teachers.

An experimental voucher scheme was commenced at Alum Rock, California, in 1973 and is reported to be running successfully. So far no scheme has been implemented in the UK, but Kent County Council is currently carrying out a preliminary one-year investigation of the feasibility of such a scheme for its schools.

A variant of a voucher scheme for compulsory education was proposed by the Chairman of the Adult Literacy Resources Agency in London who suggested that educational vouchers should be given to school-leavers rather than to parents. Vouchers under this scheme would entitle the holders to attend full-time courses at any time in their lives. He hoped that this measure would help to combat social illiteracy among school-leavers by encouraging them to participate in educational schemes after leaving school.

#### *Sources*

TES, London: 7 November 1975.  
The Financial Times, London: 3 January 1976.  
Experiment with Choice in Education, by Alan Maynard. London: Institute of Economic Affairs, 1975.

### **Gloomy outlook for engineers in The Federal Republic of Germany**

A long-term surplus of engineers and scientists is predicted in a study undertaken by the Battelle-Institut in Frankfurt on behalf of the Wissenschaftsministerium (ministry of science). It compares the future requirement for engineers and scientists with expected numbers of graduates and reveals that, if the expansion of higher education continues at the present rate and the rate of increase in the demand on the labour market remains constant, by

1980 there will be a surplus of 50 000 scientists and engineers and by 1990 a surplus of 258 000.

The surplus will be greatest among mathematicians and physicists. This may seem surprising since the demand for these faculties is and has been on the increase. According to the survey, by 1990 60 % of all mathematicians will be unable to find suitable employment, if, as anticipated, the increase in the supply is higher than the 3.2 % - 4.4 % annual increase in the demand for graduates in this subject.

#### *Source*

Handelsblatt. Düsseldorf, 23 December 1975.

### **Agricultural training in France**

The Centre national pour l'aménagement des structures des exploitations agricoles — CNASEA (national centre for the organization of agricultural development) has been in existence for ten years. It was originally set up to ensure that measures taken by public authorities to improve the functioning of the agricultural sector were put into practice and to offer farmers the means to greater productivity. At this stage, it was charged only with the retraining of all those within the agricultural sector, preparing them where necessary for jobs in other sectors of the economy.

In 1969 the CNASEA was made responsible for distributing financial aid provided by the Ministère de l'Agriculture (ministry of agriculture) for training and retraining in training establishments recognized by the Ministère. This takes the form of remuneration to cover the cost of training, insurance, social security and travelling expenses of the trainee. The amount, paid monthly, depends on a person's socio-occupational situation and the nature of the training scheme. In 1975, 28 000 people received aid from a total of FF 120 million.

The majority followed courses leading to certificat d'aptitude professionnelle — CAP (certificate of vocational apti-

tude) or brevet professionnel (vocational diploma), although a few — about 4 % — were on higher education courses.

#### *Source*

CNASEA — Ministère de l'Agriculture. Paris, 1975.

### **Free remedial classes for poor readers in North Rhine-Westphalia**

Several years ago, the Kultusminister of the Länder (ministers of education) recommended that remedial reading classes be provided in primary schools from the second year onwards throughout the Federal Republic, but implementation has so far been hampered by a lack of specialist teachers.

Since the beginning of this year, however, the Kultusministerium in North Rhine-Westphalia has been arranging free remedial classes to help the 22 000 children in its primary schools who have reading and writing difficulties. About 8 600 teachers have recently received special training in part-time and correspondence courses. It is hoped that every primary school will be able to engage at least two remedial teachers. Under the new scheme, the Kultusministerium will ensure that every child who is recognized as a poor reader is able to find a free place in a remedial class.

#### *Source*

Handelsblatt, Düsseldorf: 27 February 1976.

### **The Irish Industrial Training Authority — AnCO — to receive over £13 million in 1976**

With a grant of up to £5 000 000 from the EEC Social Fund, in addition to an £8 500 000 government grant, AnCO expects to train more than 9 000 adults and apprentices in 1976, a 28 % increase on the 1975 figure. A second

Dublin training centre is planned for the north city area, as a result of the current recession and the high number of applicants for training. Courses offered, many of which will be of special interest to women, will include electronic assembly, silk-screen printing, office machine training, and sewing machine operating and servicing.

A pilot project under the Commission Youth Training Programme was begun in 1975 and it is hoped that it will involve more than 1 000 young people by the end of this year in addition to the 9 000 adults and apprentices. Special efforts will be made to maintain the progressive involvement of women in training with extra courses and more flexible hours for married women wishing to re-enter the labour force. In addition, the pilot programme for training handicapped persons will be developed and extended to all training centres in 1976, and the training advisory services will intensify its work in identifying skill shortage areas, especially in the new technologies.

#### Source

AnCO News No. 25. Dublin: February 1976.

### Graduate tax in Ireland

A document called 'Reopening the debate on the financing of higher education', published jointly by the education officer and the president of Trinity College Students' Union, examines the advantages of a graduate tax as a means of financing higher education in Ireland. The paper looks at various loans and grant schemes and proposes the following system:

- (i) Every student is paid an allowance or wage, adequate to cover fees and maintenance. Those living away from home would get an allowance sufficiently large to cover their higher costs.
- (ii) In return the individual would pay a slightly higher rate of income tax, which over a lifetime would recoup part of the costs of higher education in accordance with his ability to repay. The extent of the surtax would depend on the number of years' study completed in higher education, but would probably not exceed about 5 %.

The most significant advantage of the graduate tax system, the document suggests, is that it eliminates all financial barriers to higher education. This does not mean of course that it offsets all the other social inequalities that influence individual achievement within the education system, but it makes the students financially independent of their parents; it also obviates the need for students to work during their studies and when graduates leave college, they are not faced with a heavy burden of debt.

#### Source

The Education Times. Dublin: 24 January 1976.

### Sweden: Post-compulsory education to suit all

In Sweden, a Working Party on the Upper Secondary School has put forward several proposals which are intended to make upper secondary schooling more suited to all young people — not least to those who at present leave

at 16 after comprehensive schooling or drop out of upper secondary school. Many students choose to make a pause in their studies; for those who plan to resume them, the problems are not so serious, but when a student leaves the formal education system for good through boredom or impatience, there is a greater risk of unemployment later on, if not immediately.

The Working Party's recommendations towards improving educational and work opportunities include:

- the arrangement of short vocational courses which can be combined with a full upper secondary education course. (The form of these will be decided by local education authorities)
- the follow-up of all young people to the age of 18 to make sure they either have a job or are receiving tuition. This means contacting all young people who have been admitted on a course but have not bothered to start it
- the possibility of part-time study at upper secondary schools for young people
- the admission of persons under 18 to adult education schemes
- the coordination of adult and youth education
- the introduction of vocational and educational guidance at an early stage in comprehensive schools.

It is expected that the present distinction in form between school and adult education will be phased out and both fitted into a more flexible framework of continuing education.

#### Source

Press Communiqué, Swedish Ministry of Education and Cultural Affairs. Stockholm, December 1975.

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# Documentation

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## EUROPE

### FIRST SYMPOSIUM OF THE COUNCIL OF EUROPE ON TRAINING IN AGRICULTURE

In the resolutions and recommendations of this symposium, which was attended by agricultural specialists from 19 West European countries, views were exchanged on the following topics:

- interrelationships between the requirements of agricultural occupations and the available training opportunities;
- the forms which cooperation in agricultural training should take;
- occupation-oriented education for young people under 16;
- expansion of training and course programmes: place and role of general education and other instruction not aimed at training for a specific agricultural occupation;
- practice-oriented training and the role of college farms in agricultural training;
- vocational guidance and transition to working life;
- specialization and further education of workers in agriculture;
- initial and further training of trainers.

#### Source

Ausbildung und Beratung in Land- und Hauswirtschaft 11/75. München: BLV-Verlagsgesellschaft, 1975.

## BELGIUM

### THE ORGANIZATION OF SECONDARY EDUCATION

Following the recommendations of the Ministres de l'Education Nationale/Ministers van Nationale Opvoeding (Ministers of Education), a royal decree was issued on 31 July 1975 concerning the organization of full-time secondary state education. Pupils entering the secondary education phase are offered the choice of two types

of education, both of which offer courses in general, technical, artistic and vocational education, but which are structured differently. Type I is divided into three cycles of two years each. In the first two years pupils follow courses in general, technical, artistic and vocational education with the possibility of additional options. In the third year, the general, technical and artistic courses are divided into transitional and final sections, the transitional section being a preparation for entry into higher education and the final section being a preparation for employment, without excluding the possibility of higher education. An additional year's study for the purpose of consolidation and/or specialization may be undertaken in the course of the second or third cycles and similarly a preparatory year may be arranged in the third.

Type II education is structured in two cycles of three years each. On completion of the lower cycle, pupils not wishing to continue in the upper cycle may stay on for a final fourth year. In general courses, an extra year may be added in the upper cycle as a preparation for higher education and in technical and vocational courses for the purpose of consolidation and/or specialization.

The pupils' performance in the first five years is ratified by a report. In the sixth year, only pupils who have passed receive a report. Certificates are awarded after a minimum of three year's study and thereafter in each successive year.

#### Source

Moniteur Belge/Belgisch Staatsblad, 6 September 1975.

## FEDERAL REPUBLIC OF GERMANY

### GOVERNMENT AID FOR JOB CREATION AND TRAINING DEVELOPMENT SCHEME

The Bundesministerium für Arbeit (Federal Ministry of Labour) and the Bundesanstalt für Arbeit (Federal Institute of Labour) have agreed on a special programme which aims to give further support to job creation

and training schemes designed to assist young people and other unemployed who are difficult to place. An allocation of DM 200 million from the Bundesministerium für Arbeit has enabled the Bundesanstalt to proceed with this programme.

The funds will be apportioned as follows:

- DM 100 million — for job creation programmes;
- DM 80 million — for the development of training measures for the young unemployed;
- DM 20 million — for teaching establishments organizing training measures for young people and the handicapped.

Loans and grants are available to organizations running schemes which create jobs outside the construction and building sectors for the unemployed who have been hard hit by the job market situation. Such schemes should particularly benefit the young, older people and others who are difficult to place in employment. Grants will range from 60 % — 120 % of the salary of the new employee who has been recruited through the employment office; loans of up to twice the value of the grants awarded will also be available. However, aid should not exceed 80 %, or in exceptional cases 90 %, of the total costs of the job creation scheme.

Young people under 25 who have been unemployed and have no vocational qualifications will be eligible for maintenance grants if they have been unable to find an apprenticeship place yet participate in a full-time vocational training, upgrading or retraining scheme of up to one year. Prior attendance of a general education course, if this is necessary, will also entitle the young person to a maintenance grant. Awards for applicants who have been in employment of more than a year will be equivalent to 80 % of their previous net earnings. Other applicants over 17 who have been unemployed for at least three of the preceding six months will receive a grant equal to unemployment benefit which is 68 % of their last or possible net earnings. Young unemployed under 17 who have worked for less than a year are not eligible for grants under this special programme, since they already qualify for assistance under Paragraph 40 of the Arbeitsförderungsgesetz (Work Promotion Law) if they take part in a vocational training scheme or an apprenticeship.

The Bundesanstalt für Arbeit will also assist institutions organizing vocational preparation schemes, institutions which train young handicapped people and workshops for the handicapped. This project is primarily concerned with increasing the number of training opportunities at existing establishments.

In addition DM 35 million will be available from the budget of the Bundesministerium für Bildung und Wissenschaft (Ministry of Education and Science) to those who set up group training and off-the-job schemes for young people who have lost their training place through works closures or who

have been unable to find a suitable place due to the regional imbalance in training opportunities.

#### Source

Sozialpolitische Informationen. Jahrgang X/4. Der Bundesminister für Arbeit und Sozialordnung. Bonn: February 1976.

## FRANCE

### TOWARDS AN IMPROVED BALANCE BETWEEN SUPPLY AND DEMAND IN EMPLOYMENT

A number of measures concerning employment problems are proposed in a circular of 5 January 1976 issued by the Secrétariat d'Etat auprès du Premier Ministre — Formation Professionnelle (Secretary of State to the Prime Minister for Vocational Training). These measures are designed to improve the balance between the demand for jobs and the number of vacancies registered with the Agence Nationale pour l'Emploi — ANPE (National Employment Agency) through the organization of practical training courses. The ANPE initiated the proposals and, together with state-controlled and private training bodies, undertook research into means and methods of their realization. The measures are the subject of a financial aid agreement with the Préfet de Région (Regional Prefect) and they are directly financed by each regional fund for vocational training. The actions to be taken are as follows:

- The ANPE shall determine the number of vacancies registered at its local offices and, where there are sufficient unemployed, training courses should be instituted corresponding to the vocational requirements. This will be done at local, departmental and regional levels, whichever is deemed to be the most suitable, with the cooperation of public, commercial or vocational bodies.
- The regional head of the ANPE shall inform the regional delegate for vocational training that a training course is

planned. Agreements shall subsequently be drawn up with the Directeur Régional du Travail et de la Main-d'Oeuvre (Regional Director of Labour and Manpower) and the regional delegate for vocational training, which shall be signed by the Regional Prefect.

- Taking into consideration the needs to which these actions correspond, the instruction procedure shall be accelerated. As soon as courses are envisaged, notice shall be given to regional institutions of vocational training and thereafter courses shall begin approximately two to three weeks after the precise nature of the vocational requirements has been ascertained. Periodic reports on courses which have been undertaken and the results obtained will be sent to the relevant authorities.
- At the end of 1976 the effectiveness of these measures and the possibility of their continuance shall be evaluated.

#### Source

Enseignement et Formation Professionnelle, 3 February 1976.

### AGREEMENT ON APPRENTICESHIPS

The Convention-cadre d'apprentissage (agreement on apprenticeships) adopted jointly between the Ministre de l'Education (Minister of Education) and the President of the Confédération nationale des industries et des métiers d'art, de mode et de création — CNIMAMC (National Confederation of artistic, fashion and creative industries) comprised the following resolutions:

1. to develop and improve initial technological and vocational training for apprentices in the industries concerned.
2. (a) to encourage cooperation between the industries and training advisers to formulate training programmes for apprentices.  
(b) to ensure optimum coordination between training centres and industry.  
(c) to formulate, in association with training advisers, recommendations on apprenticeships to be forwarded to all relevant authorities.

3. (a) to develop training other than for apprentices.  
(b) to cooperate in research into qualifications, means and methods of training and into fluctuations in training in relation to the needs of each industry and the research into 'stages' (practical training courses) for pupils receiving technological training.  
(c) to reach accord with technological teaching establishments, to organize theoretical and practical vocational training complementary to the general education given by these establishments.
4. to encourage the industries to offer technical assistance in the study of their training needs.
5. to encourage the industries to inform teachers, pupils and families on jobs offered by CNIMAMC.
6. to encourage national federations and trade unions representing each industry to form technical groups for vocational training which should discuss matters relating to vocational training. Each technical group would comprise:
  - (i) representatives of public administration acting in an advisory capacity.
  - (ii) representatives of industry composed of an equal number of employers and employees.A liaison committee could be set up along with CNIMAMC to put the recommendations of the technical groups into effect. The composition of the committee will be defined by an agreement between the Ministry of Education and CNIMAMC.
7. The composition of each group and its function will be determined by special agreement concluded between the Ministre de l'Education (Minister of Education) and each signatory of the terms.
8. This Convention is to be binding for five years with the possibility of renewal.

#### Source

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438. MENS, VORMING, ONDERNEMING (NL). Man, training, enterprise. Asse: Jonge Economische Kamer, West Brabant (Belgium), 1974, 70 pp.

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A report by the *ad hoc* Group set up by the Secretary General of the OECD. It deals with problems concerning the relationship between education and employment in the light of the social objectives in the OECD countries in the 1970's. The report proposes methods of cooperation between the relevant public authorities and employers, trade unions and other groups in society.

440. SELECTION AND ASSESSMENT AT WORK (E), by Gilbert and Helen Jessup. (In a series entitled, 'Essential Psychology', edited by Peter Herriot. E2) London: Methuen & Co. Ltd., 1975. 143 pp. £ 0.75.

441. QUALIFIKATIONS- UND ARBEITSANALYSE (D). Analysis of qualifications and work, by Karl Martin



Bolte et al. Supplement to Mitteilungen aus der Arbeitsmarkt- und Berufsforschung. Stuttgart: Verlag W. Kohlhammer, 1974, pp. 164 - 189.

This is a report on a joint workshop set up by the Bundesinstitut für Berufsbildungsforschung (Federal Institute for vocational training research), the Institut für Arbeitsmarkt- und Berufsforschung (Institute for Labour market and Occupational Research) and the Bundesanstalt für Arbeit (Federal Labour Office).

#### UNIVERSITIES AND INSTITUTES OF HIGHER EDUCATION

442. PLANNING THE DEVELOPMENT OF UNIVERSITIES — IV (E). Edited by Victor G. Onushkin. Paris: The Unesco Press, 1975. 440 pp.

This is the fourth and final volume in a series of publications on 'Planning the development of universities'. Two case studies analyse university planning in the USSR and the German Democratic Republic and the other three analyze the situation in countries where there is no national socio-economic planning system.

443. OVERZICHT INTERNATIONALE UNIVERSITAIRE SAMENWERKING (NL). Thema: rurale ontwikkeling. A review of international cooperation among universities. Theme: rural development. Den Haag: NUFFIC, Nr. 10/11, 1975, 34 pp.

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446. THE OPEN UNIVERSITY FROM WITHIN (E), by John Ferguson. London: University of London Press Ltd, 1975. 165 pp. £ 3.30.

An account of the author's personal involvement in the formative years of the Open University. The original plans of the University are described together with its organization, the close relationship which has been built up with the media and the book trade, and the experience acquired in developing integrated or multidisciplinary study courses.

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#### MASS MEDIA

449. INFORMATION ODER MANIPULATION? AUFGABEN UND ARBEITSWEISEN DER MASSEN MEDIEN (D). Planungs- und Arbeitsmaterial für den Politik-Unterricht VI. Information or manipulation. The task and function of mass media. Work material for political studies. Der Kultusminister, Nordrhein-Westfalen. Düsseldorf: Wilhelm Hagemann, 1975, 31 pp, 27 pp. (two volumes).

450. KIND UND FERNSEHEN: LITERATURAUSWAHL UND MATERIALIEN (D). The child and television: a bibliography and film guide. München: Wissenschaftliches Institut für Jugend und Bildungsfragen in Film und Fernsehen, 1975. 9 pp.

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This summary presents reports and proposals on distance education. For the benefit of overseas readers, the report contains an introductory section on the Swedish educational system and there is also a chapter on the organization and position of the Swedish Broadcasting Corporation (SR).

#### TEACHING AIDS AND TEACHING METHODS

453. MEDIEN UND ERZIEHUNG (D). Teaching aids in education, by Gerd Krauth, Vol. 2 in the series 'BTZ-Didaktik'. Wiesbaden: Bildungstechnologisches Zentrum GmbH, (No date given). 187 pp.

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This is a selection of reports written by experts at the 12th annual Symposium on Programmed Instruction and Teaching Technology held at Wiesbaden from 17 to 24 April 1974, under the auspices of the So-

ciety for Programmed Instruction. The report covers such areas as the psychological aspects of learning by programmed instruction and the economic and organizational problems arising from technological developments.

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