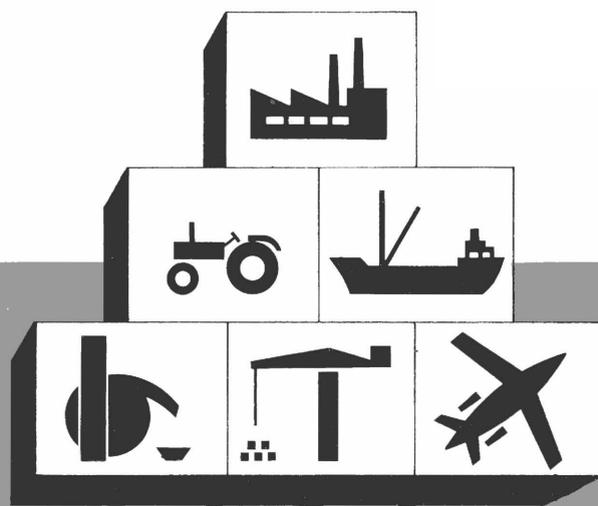


Vocational training

information
bulletin



SUPPLEMENT DENMARK

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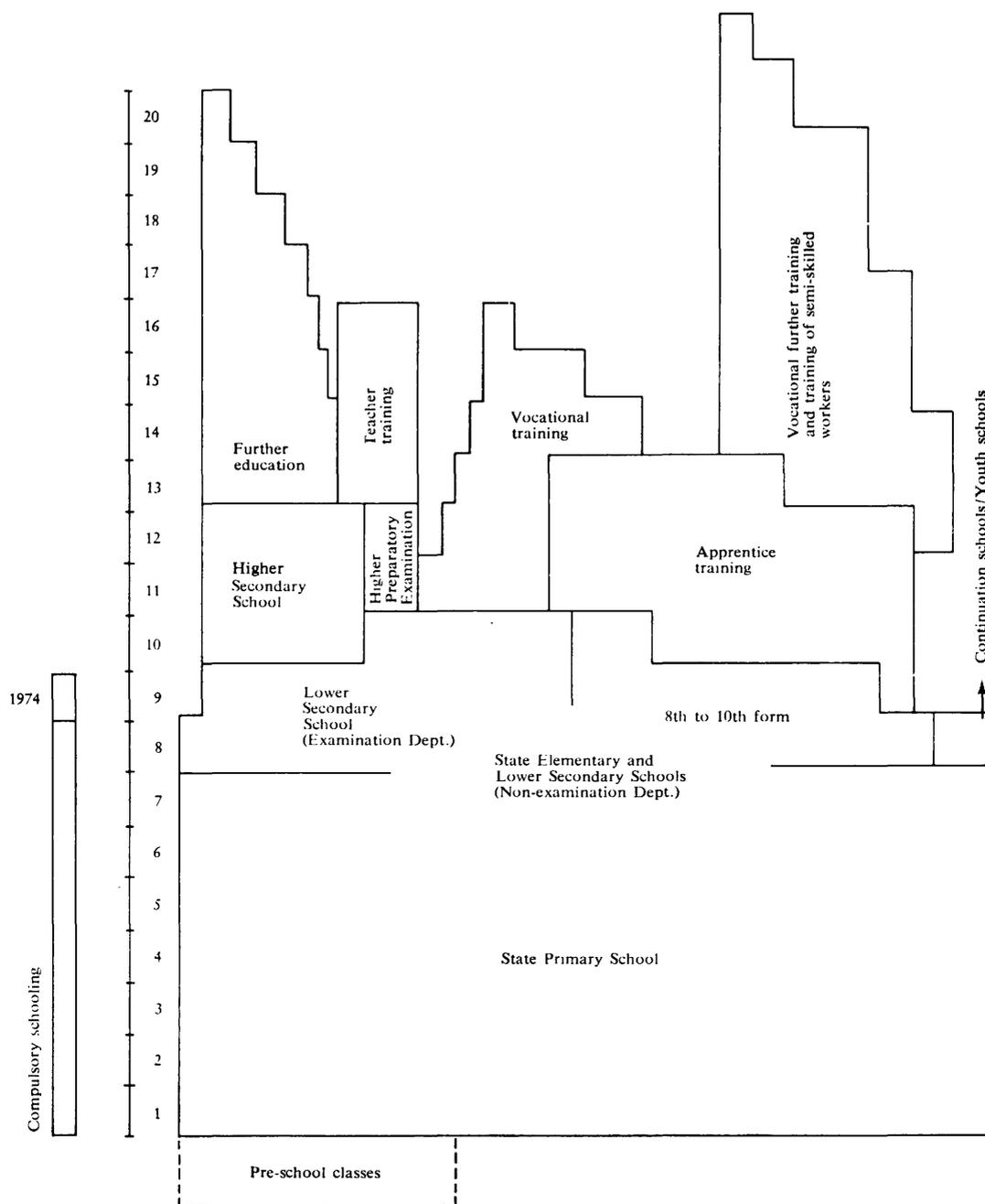
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Vocational Training in Denmark

The scope of this paper is restricted to the training that is provided mainly between the tenth and twelfth years of education; that is, training normally begun by students at the age of 16.

In addition to the basic forms of training, further training in the form of short basic vocational training courses has been included.

In general, the paper is arranged as shown in the list of contents.



Børnehavklasser:

Pre-school classes are voluntary and provided for children of the five to seven years age-group, i.e. below the age of compulsory education.

Hovedskolen:

Main department of the primary school; coincides with the period of compulsory education which at present is eight years.

8.-10 klasserne:

After the 7th form, children may continue their education in the 8th, 9th and 10th forms of the lower secondary non-examination department.

Realafdelingen:

Pupils are admitted to the 1st form of the 'Realafdeling' (lower secondary examination department) from the 7th form of the main school provided that they are considered suited.

Folkeskolen:

Folkeskole (municipal public school) consisting of Hovedskole elementary school for children within the age of compulsory education), 8.-10. klasserne (lower secondary non-examination department) and Realafdeling (lower secondary examination department).

Efterskoler:

Efterskoler (continuation schools) are boarding schools offering courses, the main purpose of which is to provide the students in the age-group 14 to 18 years with an all-round, character-developing general education.

Ungdomsskoler:

Ungdomsskoler (youth schools) are voluntary schools for young people in the age-group 14-18 years.

Gymnasiet:

Admission to the Gymnasium (higher secondary school) is obtained from the 2nd form of the lower secondary examination department on the basis of a statement issued by the school to the effect that the pupil in question is considered 'qualified' or 'perhaps qualified' for studies at Gymnasium level. One third of the pupils have, however, passed the Realeksamen before entering.

HF:

Højere Forberedelseseksamen (higher preparatory examination). These courses are open to any pupil having sufficient educational background, but most of the pupils admitted have already passed the lower secondary school leaving examination at the termination of the 10th form.

Historical background

Vocational training is training directed towards the performance of certain tasks in undertakings within commerce, industry, crafts, shipping, etc.

Historical development

Apprenticeship training consists of practical and theoretical parts. It is based upon a contract between apprentice master and apprentice. These were originally purely private agreements for training, wages and perhaps board and lodging, but later the statutes of the Guilds adopted rules relating to apprenticeship training within the Guild.

The most important reasons for implementing at the end of the 19th century the Law on Conditions for Apprentices of 30 March 1889 were developments under the Trade Act and the shortage of qualified labour. The Law covered apprentices who were under 18 years of age upon engagement and who were taken on for training in an undertaking that fell within the trades requiring licences.

The Law was subsequently replaced by the Apprenticeship Act of 6 May 1921 and the Apprenticeship Act of 7 May 1937. The current Apprenticeship Act is dated 2 October 1956.

Practical training with an apprentice master was later supplemented by training in trade schools, which were generally established by private apprentice-master associations.

Teaching in the trade schools (technical schools and commercial schools) was organized in the form of evening classes, and the apprentices had therefore to attend these classes in their spare time.

A large number of technical schools and commercial schools were established all over the country in the 19th century. They were planned and conducted by private interests, with modest subsidies from the State and municipalities.

In a few places, this education was carried over to daytime teaching, and under the Apprenticeship Act of 1956 all teaching for apprentices in commercial and technical schools is carried out during the day. Preparatory schools have been introduced for many trades. In these schools apprentices receive initial vocational training.

The demand for training and the transfer of a large part of apprentice training to schools has made it necessary in recent years to centralize commercial and technical schools. The number of technical schools has been reduced from about 370 to about 50, and the number of commercial schools from about 200 to about 70. Centralization, the increase in the number of apprentices and the changes in training, which in addition to theoretical training includes practical training, has resulted in most technical and commercial schools having very many pupils and many teachers, both full and part-time.

Apprentice training is constantly changing as a result of the technical and structural development of trade and

industry, and an increasing part of this training is being transferred to the schools.

Hostels have been established for apprentices who cannot travel to school each day. These accommodate each year over 20 000 apprentices for periods of varying length. During his stay at the hostel, lectures on vocational and cultural subjects are available to the apprentice in his spare time. He can also participate in various recreations.

Relevant legislation and the present situation in apprentice training and basic vocational training systems

Technical and commercial schools are controlled by a Board. Most schools are established as independent institutions, and a majority of the Board members must be associated with trade and industry.

The cost of running the schools is borne by the State, and in the apprentice section also by the municipalities in the ratio of 80% from the State and 20% from the municipalities. The cost of running the recognized examination departments is met by the State.

The Apprentice Act now applicable

Under the Act of 2 October 1959 on Conditions for Apprentices, indentures must be concluded between master and apprentice if the latter is under 18 years of age on engagement and is accepted into an undertaking that carries out work falling within the scope of the Act.

The indentures are drawn up on an approved form, and a State employment office must certify that they are in accordance with the provisions of the Apprentice Act.

The apprentices must have left school legally and have reached the age of 14.

The apprentice receives a wage during his training period, and provisions concerning apprentices' wages are adopted in collective bargaining between employers' and workers' organizations.

Within the crafts and industry, etc, the apprentice must at the end of his period of apprenticeship sit a journeyman's test or, if this has not been established, another test approved by the trade concerned.

When the apprentice has passed his journeyman's test, he receives a certificate (journeyman's certificate) to prove that he has passed the test.

If the apprentice does not pass the test, the master may be ordered to pay compensation if he has not attended to the apprentice's training and if this is the cause of the apprentice's inability to pass the test at the end of his apprenticeship.

The journeyman's test is held by Journeyman's Test Commissions established within the trade concerned.

To evaluate the journeyman's tests, inspecting masters of the guilds or corporations are appointed by trade committees. The inspecting masters are specially trained, and are appointed by an equal number of employer and employee representatives.

No rules for journeyman's tests have been established for apprentices in the retail, commercial and office trades. At the end of the apprenticeship, the employer must provide the apprentice with a certificate of completed apprenticeship, giving his period of apprenticeship and stating whether he has become competent in his trade. However, the certificate of completed apprenticeship may not be handed to the apprentice until he has passed the trade assistant's examination, its equivalent or a more comprehensive test.

The Apprentice Act falls under the jurisdiction of the Minister of Education. The Apprenticeship Board, which is composed of a Chairman appointed by the Queen and representatives of employers and employees, advises the Minister of Education on matters submitted by the Minister to the Board for an opinion. Under the Law, the Apprenticeship Board is empowered to take decisions on matters set out in the Law.

Joint Trade Boards have been established by employers' and workers' organizations in each trade. These boards advise the Apprenticeship Board and Minister of Education on all matters concerning the training and protection of apprentices. The Trade Boards submit recommendations to the Apprenticeship Board on the detailed regulations for training within the trade concerned, and in general the Boards are required to work toward optimal training conditions. The Trade Boards may recommend to public employment offices that they refuse approval of indentures in certain undertakings if conditions in these undertakings are an obstacle to the proper training of apprentices. Decisions of the Trade Boards may be appealed against to the Apprenticeship Board.

There are 36 Trade Boards:

Joint Board for Master Glaziers and the Glaziers' Trades
Joint Board for the Painting and Decorating Trades
Joint Board for the Bricklayers' Trade
Joint Board for the Carpenters' Trade
Joint Board for Joinery and Associated Trades
Joint Board for the Woodcutting Machinists' Trade
Joint Board for the Coopers', Basket Makers' and Brush-Makers' Trades
Joint Board for the Boot and Shoe Trades
Joint Board for the Tailoring Trade
Joint Board for the Hatters' and Milliners' Trades
Joint Board for the Printing Trade
Joint Board for the Bookbinding Trade
Joint Board for the Lithography and Photo-engraving Trades
Joint Board for the Ceramic Trades
Joint Board for the Stonemasons', Paviers' and Stucco-workers' Trades
Joint Board for the Tanners' and Fur-dressers' Trades
Joint Board for the Bakers', Confectioners', Millers' and

Sugar-goods Trades
Joint Board for the Tobacco Trade
Joint Board for the Butchers' Trade
Joint Board for the Dyers', Trimming-makers', Sailmakers' and Ropemakers' Trades
Joint Board for the Saddlers', Paperhangers', Travel goods and Glovemakers' Trades
Joint Board for the Hairdressing Trade
Joint Board for the Dental Technicians' Trade
Joint Board for the Chimney-sweeps' Trade
Joint Board for the Watchmakers' Trade
Board for Apprentices in the Metal Industry
Joint Board for the Plumbers', Pipe-fitters' and Sanitary Trades
Joint Board for the Hotel and Restaurant Trades
Joint Board for Apprentices in the Retail Trades
Joint Board for Office Apprentices
Joint Board for Commercial Apprentices
Joint Board for the Horticultural Trade
Joint Board for the Photographers' Trade
Joint Board for the Furriers' Trade
Joint Board for the Coach-builders' Trade
Joint Board for the Specialist Opticians' Trade
Each of these Trade Boards covers several skills or trades.

Disputes arising between the contracting parties concerning certain rules under the Apprentice Act may be submitted to a Court of Arbitration.

This applies for example to questions concerning imposition of compensation payments because of insufficient training or neglect on the part of the apprentice master in connection with the training.

The Court of Arbitration consists of the Judge of the jurisdiction concerned as Chairman and four arbitrators appointed for each individual case.

The duration of apprenticeship, which is to be included in the indentures, is established by the Trade Boards, and in the event of dispute concerning the duration of the apprenticeship the matter may be submitted to the Apprenticeship Board, whose decision is final. Apprenticeship may not exceed four years, unless, in special cases, permission is given by the Minister of Education.

The duration of apprenticeship differs between the various trades. For most trades, there has been a reduction in total apprenticeship in recent years. Apprenticeship within the commercial and office trades, for example, is two-and-a-half to three years for apprentices who have completed the 9th and 10th forms in the lower secondary school and for apprentices who have passed the lower secondary examination. Apprentices who have matriculated, passed the higher commercial examination or the commercial examination are apprenticed for two years only.

Training of apprentices within the commercial and office trades

The apprentice must attend a commercial school, where instruction is divided into retail trade, wholesale trade and clerical training.

For acceptance on courses for the retail assistant examination, apprentices must produce a certificate relating to the

State-controlled test at the completion of the 9th form in the elementary school or higher education, or as a transitional arrangement attend a preparatory course of 240 hours in arithmetic and Danish.

Preparatory courses are organized by local commercial schools in the form of regional training or at a boarding school. They cover 20 weeks for shop apprentices and ten weeks for clerical and wholesale apprentices.

The course for the retail assistant examination consists of an introductory course at the commencement of apprenticeship and a subsequent course divided into terms, covering 800 hours education; at the retail trades school, however, this is only 720 hours.

Training at the retail trades school consists of an introductory course and two terms, each of 20 weeks (a total of 3×20 weeks), while training at the clerical school consists of an introductory course of ten weeks and two terms each of 20 weeks. The weekly teaching period consists of 12 hours distributed over two or three days, apart from the introductory course which consists of 24 hours a week.

At the retail trades school, instruction is given in business practice, arithmetic, book-keeping and comprehension of accounts, retail routines and sales theory, English, German, commercial knowledge, signwriting and trade and commodity theory. The time given to the various subjects depends in many cases upon the apprentice's previous schooling, but it is emphasized that the examination requirements are the same for all students at the retail trade school, except for the requirements in English and German.

Instruction in trade and commodity studies is provided either at the local commercial college or in the form of regional education in the second term. This training for retail trade apprentices is divided into two courses each of 14 days. The first course is completed between the first and second terms, and the other when the student has completed the second term at the local commercial school. Wholesale apprentices receive training in commodity studies after completion of the second term.

At the clerical school, instruction is provided in typewriting, office routines, English, German, calculating machines, arithmetic, office administration, office techniques, book-keeping, commerce and sociology. Instruction in office techniques is at central schools in the case of large regions, or at boarding schools.

Training of apprentices in the crafts and industry

Training of apprentices in the crafts and industry consists of practical training at the place of work supplemented by practical and theoretical training at a technical school.

There are approved regulations for the practical training at the place of work. These give directions as to the content and extent of practical training. For example, there is normally a reference to the materials, tools and machines employed by the trade and to the products manufactured. In addition, detailed directions are given concerning the conduct of training so that this can be carried out in as close an association as possible with the instruction the apprentice receives at a technical school.

For most subjects, syllabuses containing regulations as to the extent, content, timing, curricula, educational aids and number of students per class have been adopted on the basis of proposals from the Trade Boards of the Ministry of Education and the Vocational Training Directorate, in consultation with the technical schools' Boards.

The Directorate also issues directions for training in which syllabus regulations are elaborated.

The apprentice is required to follow the technical school instruction prescribed for the trade concerned. This instruction, which is normally both practical and theoretical, is trade-oriented and includes subjects such as the science of materials, the theory of tools, workshop theory, interpretation of drawings and technical drawing.

Over and above this, most vocational subjects include training in workshops and laboratories, this practical training being carried out in as close an association as possible with the practical training at the place of work. In almost all trades, instruction is also given in general subjects such as Danish and sociology. This general education includes subjects directly related to the trade concerned and subjects with a broader social purpose. The Apprentice Act prescribes that instruction in purely vocational subjects should be given at day schools for apprentices at the same stage of training.

The duration of instruction at a technical school varies from trade to trade. Normally, the apprentice is called in for instructional periods once a year, but this period can then vary from three weeks to 16 weeks.

The syllabuses show that it is normal for the apprentice, after entering into indentures, to begin his apprenticeship with a period at a school. This instruction is referred to as preparatory. Instruction at preparatory schools is mainly of a practical nature.

The decrease in recent years in the conclusion of indentures within the crafts and industry may result in a marked shortage of skilled labour.

To counteract this, certain trades have modernized the present apprenticeship training and coordinated it with the structure of the experimental vocational training schemes, since the expansion provided for these training schemes cannot meet the demand for skilled labour in the early years.

An example of modernized apprentice training is to be found in the metal trades, where reorganization of training for the main groups, I Mechanics and VIII Fitters, was initiated in August 1973.

Stage 1 (initial schooling in the reorganized training) replaces the former preliminary school for fitters and mechanics and is therefore compulsory for very many branches of the metal trades.

A characteristic of the initial and subsequent stages in the reorganized system is more practical instruction as part of the school periods than has been the case to date.

As well as expressing the desire with the trades for up-to-date training, the instruction is so designed that at a later date it can form part of the second stage of the training of mechanics and fitters after the basic year (Part 1) of the experimental vocational training schemes.

Examples are given below of school instruction and, for certain subjects, experimental training with a view to the modernization referred to above.

Housepainters

Indentured apprentices undergo four periods of instruction at a technical school during their apprenticeship, a total of 38 weeks, or 1 520 hours divided into 824 hours of theoretical instruction and 696 hours of practical instruction. Of this period, 12 weeks are preliminary school instruction, the remaining 26 weeks being divided into eight weeks in the 2nd and 4th vocational classes and ten weeks in the 3rd vocational class.

The most important subjects in this instruction are draughtsmanship and decorating, with a substantial number of practical exercises. Instruction is also given in measuring, science of materials, theory of tools, etc, together with arithmetic, Danish and sociology.

Experiments in *modernized instruction* will be commenced at two technical schools in February 1973 for apprentices in the housepainting trade.

The amended instruction in the housepainting trade is designed, as we have said, to modernize the education of apprentices and to set up a second stage of instruction for housepainting students after basic training in building and construction.

The most important innovation in the amended instruction is that the three branches of the painting trade: house-painters, signwriters, and vehicle and industrial painters, take a common training in painting technique before beginning to specialize in the branch-oriented training course.

The total instructional period for all branches is extended: for housepainters from 38 to 48 weeks/1 920 hours, for signwriters from 40 to 51 weeks/2 040 hours, and for vehicle and industrial painters from 27 to 45 weeks/1 800 hours.

The increase in the instructional period results from an extension of practical training and an increased content in theory of the trade and general education.

The general subjects cover compulsory instruction in Danish, mathematics, language and sociology/civics. Extra subjects available are English, German, chemistry, physics and economics.

The total instructional period is divided more or less equally between theory (theory of the trade and general education) and practice.

Bricklayers

Indentured apprentices in the bricklaying trade receive four periods of instruction at a technical college during their apprenticeship, a total of 27 weeks or 1 080 hours. Instruction is introduced by a 12-weeks preliminary period of schooling giving a total of 480 hours divided equally between practice and theory, the remaining 15 weeks being divided into three stages, each of five weeks.

Apart from practical work in the workshop, the most important subjects are technical drawing and other associat-

ed drawing subjects. Instruction is also given in the science of materials, technical arithmetic, Danish and civics.

An experiment in *modernized instruction* was initiated at two of the technical schools in September 1972 for apprentices in the bricklaying trade.

In this case, the amended instruction is also intended to modernize instruction for apprentices and to set up a second stage of instruction for bricklaying apprentices after basic instruction in building and construction.

One of the main elements of the modernized training is the introduction of actual building work (production as part of school instruction) in the equivalent of 28 working weeks. The scholastic part of the education—including the period of building—has been considerably extended from 27 weeks to 85 weeks.

The increase in the instructional period results from an extension of vocational practical training, including building, and an increased content in general education.

In the general education, the compulsory subjects are the technique of study, Danish, arithmetic, mathematics, English, German and an introduction to EDP. Voluntary extra instruction is given in English, German, arithmetic, mathematics, physics, chemistry and music.

The number of periods in the total school instruction is fairly equally divided between theory and practice.

The theoretical instruction is pure theory to only a limited extent, importance being given to integrated theory of the trade. This means that vocational theory is coordinated with and given in association with the execution of the practical exercises.

Carpenters

Indentured apprentices in the carpentry trade receive four periods of instruction at a technical school during their apprenticeship, a total of 30 weeks or 1 200 hours divided equally between practice and theory. Of this period, 12 weeks are preliminary school instruction, the remaining 18 weeks being divided into three stages, each of six weeks.

Apart from practical work in the workshop, the most important subjects are technical drawing and other related drawing subjects. In addition, instruction is provided in the science of materials, shuttering theory, technical drawing, technique of study and note-taking, civics and safety at work.

Joiners

Indentured apprentices in the joinery trade receive three periods of instruction at a technical college during their apprenticeship, a total of 23 weeks or 920 hours. Of this period, 11 weeks are preliminary school instruction, the remaining 12 weeks being divided into two stages, each of six weeks.

The most important subjects are technical drawing, free-hand drawing and jointing. Instruction is also provided in the science of materials, tool technology, measuring, etc, as well as technical arithmetic, Danish, civics and business economics.

Hairdressers

Indentured apprentices in the hairdressing trade receive four periods of instruction at a technical school during their apprenticeship, a total of 40 weeks or 1 600 hours divided between about 375 hours of theory and 1 244 hours of practice. Of this period, 16 weeks are preliminary school training, the remaining 24 weeks being divided into three stages, each of eight weeks.

Instruction covers the disciplines of ladies' hairdressing (with water waving and curling-iron waving as the most important subjects), gentlemen's hairdressing (with cutting as the most important subject), wig work (with wig-base work as the most important subject) and general subjects (where education is provided in the science of materials, theory of the trade, etc, together with arithmetic, Danish and civics).

Within the experimental vocational training schemes, hairdressing apprentices are given the second part of the instruction (the actual vocational education) at a workshop school for a period of 58 weeks.

It is intended to try to modernize the existing apprentice training under the same pattern.

Mechanics

Apprentices in the mechanics' trade indentured before 1 August 1973 receive four periods of instruction at a technical school during their apprenticeship, a total of 29 weeks or 1 160 hours. Of this period, 11 weeks are instruction at the preliminary school for fitters and mechanics. The remaining 18 weeks are employed exclusively on theoretical education and are divided into three stages, each of six weeks.

The most important subjects, apart from practical work in a workshop, are interpretation of drawings, workshop technique, the science of materials, vocational arithmetic, physics, Danish and civics.

From August 1973, instruction for mechanics will be reorganized (as referred to above in the section on modernization).

The reorganized instruction, whose main innovation is a general introduction to trade practice in all three stages, results in an extension of the period at college from 29 to 32 weeks/1 280 hours.

Instruction is divided into four terms, the first (Stage 1) being of 12 weeks, Stages 2 and 3 of nine weeks each and Stage 4 (refresher course) two weeks.

The total instructional period—1 280 hours—is divided into 240 hours of purely theoretical instruction and 1 040 hours of practical subjects and integrated theory of the trade. Integrated theory of the trade occupies an estimated 15 to 20% of the 1 040 hours.

Practical instruction includes subjects such as vice work, fitting, turning, milling, etc, as well as welding and flame cutting. Theoretical subjects include the science of materials, interpretation of drawings, workshop calculations, business theory, sociology, technique of study and instruction in safety at work.

Motor mechanics

Indentured apprentices in the motor mechanics trade receive six periods of instruction at a technical school during their apprenticeship, a total of 37 weeks or 1 480 hours. Of this period, 11 weeks are instruction at the preliminary school for motor mechanic apprentices (a special preliminary school was established in Spring 1971). The remaining 26 weeks are divided into four periods, each of six weeks, and a sixth vocational period which is a refresher course of two weeks.

The most important subject, apart from practical work in a workshop, is vehicle technology. Instruction is also given in the interpretation of drawings and work specifications, workshop technique, conduct of business, management, etc, in addition to mathematics, engine technology and civics.

Work is also in progress in the motor mechanics' trade to modernize the training of apprentices, instruction in accordance with the 'station principle' having been introduced. Under this principle, apprentices in one class or team are divided into smaller groups, which take it in turns to work on various demarcated and trade-oriented tasks within the following main divisions: vehicle undercarriage; vehicle electrics (electrical installations) and vehicle engines. Special training for heavy-vehicle mechanics is also now being planned.

Radio mechanics

Indentured apprentices within the radio mechanics' trade receive six periods of training at a technical school during their apprenticeship, a total of 39 weeks or 1 560 hours divided into 944 hours of theory and 616 hours of practice. Of these periods, 12 weeks are preliminary school instruction, covering both theoretical and practical instruction. The remaining 27 weeks are divided into four periods each of six weeks and a final period of three weeks. Instruction in the sixth period is a refresher course which must be attended at the end of the apprenticeship, the apprentice sitting his final journeyman's test as a conclusion to this course.

Apart from practical training in the laboratories, the most important subjects are theory of the trade and the science of materials. Instruction is also provided in vocational arithmetic and mathematics, diagrams, technical German and English, technique of study and civics.

Electricians

Indentured apprentices within the electricians' trade receive six periods of instruction at a technical school during their apprenticeship, a total of 39 weeks or 1 560 hours. Of these periods 12 weeks are preliminary school education, the remaining 27 weeks being divided into four periods each of six weeks and a final period of three weeks.

Apart from practical exercises in the theory of the trade, including electrical science, the most important subjects are automatics, the science of materials, arithmetic, mathematics and physics. Instruction is also provided in civics.

Statistics of apprentice training

Since 1950, the intake into apprentice training (expressed as the number of first-time apprenticeships for apprentices under 18 years) has developed as follows:

	Crafts and industry	Commerce, retail and clerical	Apprenticeships total
1950	12 460	6 396	18 856
1955	13 030	8 007	21 037
1960	18 737	12 194	30 931
1965	18 223	13 573	31 796
1967	14 727	10 559	25 286
1969	13 606	8 256	21 862
1971	11 711	5 742	17 453
1972	10 399	5 291	15 690
1973	10 227	4 280	14 507

Recruitment to apprentice training has in recent years fluctuated greatly. In the first half of the 1960s, the training field experienced a popularity exceeding what might have been expected from the increased numbers in the age group of those seeking training. This was seen as evidence of the growing trend for young people to seek apprentice training. Since the middle of the 1960s however, the intake has declined. Among the reasons for this are the growing tendency for school education to continue beyond compulsory school age and the presence of many alternative training offers which were available to only a limited extent ten years ago. The decrease has been most marked in the commercial and clerical fields, which must be viewed in association with a corresponding increase in applications for the commercial examination that occurred over the same period.

The Ministry of Education has estimated that the number of apprentices receiving instruction on 1 October 1971 at technical and commercial schools was about 60 000.

About three-quarters of the apprentices registered at technical and commercial schools on 1 October 1971 (about 45 000) had entered into indentures in industry and the crafts, and the remainder (about 15 000) in the commercial and clerical fields. The number of apprentices is, however, somewhat higher than is indicated by these figures. On the basis of this number of students, the total of apprentices may be estimated at 65 000 to 70 000. Number of students at technical schools—apprentices: 1972—41 696; 1973—43 847.

There are over 100 approved apprentice trades within industry and the crafts. However, the number of apprentices varies greatly between the different trades and branches of trades. For example, the ten largest trades and branches of trades within industry and the crafts have more than 65% of the apprentices in the field, while on the other hand there are several trades in which the annual intake of apprentices is less than ten.

Experimental vocational training

The Law on experimental vocational training (Law No 291 of 7 June 1972) entered into force on 1 August 1972. The Law will be revised during the Folketing (parliamentary) year 1975/76.

The notes to the Bill give a rate of expansion for the experimental training schemes, with a gradually increasing student intake into the new basic training. To accord with this, the student intake should rise in 1975/76 to 6 400 students, and it is estimated that in 1978/79 some 30 000 students will be accepted for vocational basic training. This intake of students should bring to an end apprentice recruitment, but it is expected that at the same time other basic vocational training schemes will be adopted (assistant training, workshop schools, commercial examinations, etc). It is also expected that a large proportion of the young people now entering commercial life after finishing elementary schooling will also enter vocational basic training, increasing somewhat the student intake by about 1980.

In August 1972 some 1 100 young people entered the vocational experimental training schemes at 11 experimental schools all over the country. During the school year 1973/74, some 2 500 students entered experimental training at 16 different schools. In 1975, 6 400 students were accepted. At present there are about 35 schools in the experiment.

The Bill is based upon Report No 612 on basic vocational training schemes. This contains a statement from the Committee on Basic Vocational Training Schemes giving its opinion on the present vocational training schemes and the training system for the 16 to 19 (20) year-olds.

It is particularly emphasized that among young people the choice of vocation is made too early during their training. They make the choice when they enter into indentures, when they have no real background for their choice. Further, there are too few opportunities for transfer between the various apprenticeship schemes so that what has already been learned can form part of the new training. In general, in the opinion of the Committee, there is too little coherence and flexibility in the training system for the 16 to 19 (20) year-olds.

It is also emphasized that the normal entrance to further education is, for historical reasons, frequently conditional upon certain examinations, and this has contributed to the fact that in general there are too few opportunities for further education for those young people who have received vocational training. The Committee considers that this is also because too little weight is given in vocational training to instruction on how to study and to a liberal education.

Finally, it is emphasized that there is often a lack of coordination between the scholastic part of vocational training schemes and on-the-job training, and that in many cases vocational basic training schemes are both too broad and too narrow in relation to the occupation towards which they are directed.

In order to secure greater cohesion and flexibility within the training system, the Committee proposes that in the case of vocational basic training schemes a distinction should be made between three main stages: the general primary school (elementary school and the like), the higher secondary schools (education for the 16 to 19 (20) year-olds) and post-higher secondary education (further education for 19 to 25 year-olds). Within higher secondary education, a distinction is made between general higher secondary education (matriculation and equivalent) and

higher vocational education (basic vocational training schemes), which in contrast to general higher secondary education is directed towards a vocation, further education and a liberal education for young people. In the opinion of the Committee, there should be opportunities during and in continuation of higher secondary education to take practical and theoretical supplementary courses, so that young people can obtain a suitable degree of competence in studying and/or in their vocation.

Under the Law, basic vocational training must be structured as a number of broad basic schemes of one year's duration. Basic training (1st part) is given at a school, perhaps supplemented by a short period with an undertaking. Provisionally, experiments in basic training are taking place within the following main fields of occupation (branches of training):

- Commerce and clerical
- Iron and metals
- Building and construction
- Foodstuffs
- The graphics trade
- Service trades
- Agriculture

Basic training (1st part) must include basic vocational instruction within the main trade, development of personality and increase in general qualifications in continuation of elementary school education, and vocational and educational guidance. In connection with vocational and educational guidance, there is an opportunity for guidance as concerns the personal circumstances of the student.

Under the Law, basic training of one year's duration mainly or exclusively at a school must be provided for each of the main trades. Instead of the present 152 different subjects, young people can therefore choose between seven branches of training. During basic training, the student also chooses between a number of ancillary subjects which form a basis for later training within specialist trades.

After the basic instruction, students choose progressively a narrower field of training (branch training or specialist training). The second part of the training alternates between school instruction and training in approved undertakings.

The purpose of the training is to give the student thorough vocational instruction, postponing specialization for as long as possible, and instruction in general subjects in continuation of the basic instruction. The duration of instruction varies according to the needs of the individual specialist subjects.

Instruction in the specialist subjects may be divided into stages, each stage forming a rounded course with which the student can enter trade and industry with a certain degree of vocational qualification (perhaps after completing a short special finishing course). Vocational and educational guidance is provided in accordance with the individual's choice.

Students discontinuing their training must have an opportunity to recommence it. It is anticipated that further training courses and a system of supplementary special courses will be built up in association with the training schemes.

Instruction in general subjects covers:

- (1) Instruction in common subjects, i.e. subjects common wholly or in part to all branches of instruction, such as Danish, the technique of study, sociology, industrial psychology, business studies, foreign languages and introduction to EDP.
- (2) Instruction in general subjects common to the branch or specialist subject, for example arithmetic, mathematics, foreign languages, physics and chemistry.
- (3) Instruction in voluntary subjects covering creative and musical subjects and further instruction in academic subjects. A large part of the 1 100 students who began training in 1972 chose extra lessons in academic subjects for TF (Teknisk forberedelseseksamen=Technical preparatory examination), UTF (Udvidet teknisk forberedelseseksamen=further technical preparatory examination), and HF (Højere forberedelseseksamen=further preparatory examination).

Under the law, a Research Council has been established for vocational basic education schemes consisting of representatives of employers and employees and including works managers, students and educationalists from the vocational schools and the Ministries of Education and Labour. The Research Council is to take the initiative in planning and implementing experimental training and to ensure coordination in relation to other training. Over and above this, the Research Council is to submit recommendations to the Minister of Education on various questions, and to offer general advice on questions of training.

The Research Council is responsible for the establishment of Research Groups for the individual areas of research. The Research Groups consist of employer and employee representatives, and include works managers and students within the field concerned and educationalists. In consultation with the Trade Boards established under the Apprentices Act and the Branch Committees established under the Law on the Training of Semi-skilled Workers, etc, the Research Groups are responsible for the content, planning and management of the training schemes; i.e. vocational structure and instruction. The Research Groups, in consultation with the Trade Boards and the Branch Committees, also establish guidelines for the practical training locations and ensure that instruction is carried out accordingly.

The Trade Boards approve the individual practical training locations.

The experimental vocational training courses are provided mainly at a number of commercial and technical schools, although the law gives an opportunity for cooperation with other school systems, for example the school for semi-skilled workers. The cost of providing the experimental instruction is covered 100% by the State, and similarly the State makes available to the schools the necessary equipment. During the period at school, students taking part in the experiments receive from the State an educational grant corresponding to the average apprentice wage within the metropolitan area at an equivalent stage of training.

Under the law, further provisions concerning students' legal position are to be promulgated following recommendations from the Research Group. The Law provides that disputes between students and practical training locations may be submitted to a special tribunal, whose juris-

diction is the same as that of the arbitration courts for apprentices.

Finally, the Law allows the Minister of Education to issue regulations concerning the admission of vocational students to further education.

Description of other vocational training schemes

Commerce and administration

Historical development

The concept of further training in commerce dates back to the 18th century. During this brilliant period for commerce, a special school for higher commercial education was founded in Copenhagen as part of Court Chaplain Christiani's philanthropy in Vesterbro. However, this was dissolved after war broke out in 1807, and post-war bankruptcy was not conducive to new experiments. A few commercial academies are known to have existed by the middle of the last century, such as Grüners Handelsakademi, but little is known of their history.

The initiative in higher commercial education was provided by C.F. Tietgen, when as Chairman of the Wholesalers' Society he secured his colleagues' consent to the employment of Niels Brock's Foundation of Dkr 300 000 for the purpose that the testator had directed before his death in 1802.

'De Brockske Handelsskoler' (1888) had a complicated structure. At the age of 10 to 11 years pupils began in a slightly commerce-oriented lower secondary school, which led to a kind of matriculation examination. Above this was built up a two-year vocational school, and finally the edifice was to be crowned by a one-year commercial course to which students were to return after some practical experience.

The school soon fell into decline, and the Committee of the Wholesalers' Society finally gave up operating the school themselves. In 1908 they handed it over to the Association for the Education of Young Businessmen. It succeeded in rescuing what in our time is equivalent to a higher commercial secondary school, and Niels Brock's Commercial College was, in fact, built up in the years between 1902 and the First World War. The combination of true commercial subjects, general vocational subjects and purely general subjects has since characterized this type of school and conditioned its growth.

The school became a two-year institution with the lower secondary school examination as a basis. Some students came direct from the lower secondary examination school and others after having had some practical experience. In 1917, a one-year higher secondary course was established, building upon matriculation in modern languages.

In the period between the turn of the century and 1914, another form of school arose which concerned itself in

the full-time education of young people seeking to enter commerce. The material was mainly general commercial, but languages were available in these originally very different courses. Those attending were mostly young people who had left school after Confirmation, and the level had to be adapted accordingly. The level was not universally even. The Commercial Colleges Commission of 1918 established that only 6% of the students attending these schools passed the retail assistant's examination.

The State entered the picture in 1912, subsidies being made conditional upon adherence to a syllabus whose curriculum did not differ greatly from the present curriculum. Only one language was required, and this of course had to be taught at the beginner stage.

In the larger towns, a number of courses in optional subjects, aimed at voluntary further education for people who had finished their training, were established alongside apprentice training. This education was particularly oriented towards the instruction offered in Copenhagen since 1880 by the Association for the Education of Young Businessmen. During the many years when Niels Brock's Handelsskole was the country's only school for higher commercial education, the most general education—and the only further education—available in commerce for the many who did not apply to Niels Brock's Handelsskole was in fact many years of evening classes in languages and other further education subjects at the Commercial College and the few other commercial schools providing such voluntary education.

Present training system

The present training system adopts one-year full-time instruction for the commercial examination as the intermediate stage in the structure of Danish commercial schools, whereas Niels Brock's Handelsskole and other commercial schools that provide education for the higher commercial examination are classified as the commercial schools' highest stage and provide the link with studies at the higher commercial colleges. The State-controlled tests have been divided into vocational tests and higher vocational tests, the former being considered as a supplement to the retail assistant's examination and the latter as an opportunity to acquire knowledge in individual sections of the commercial and clerical field equivalent to the higher commercial examination. The higher vocational tests extend the retail assistant's examination, vocational tests and the commercial examination.

State-controlled vocational tests

Further education in commercial colleges is thus divided into four categories. Instruction in optional subjects and supplementary subjects that have been gathered together under the designation of State-controlled vocational tests is most closely related to apprentice education (retail assistant's examination). The relative regulations are to be found in the Minister of Education's Notice No 395 of 10 October 1967 on State-controlled Vocational Tests in Commercial Schools.

The purpose of the vocational tests is to give students a level of knowledge equivalent to the retail assistant's examination in subject areas included in normal courses

for the retail assistant's examination in which the student has not taken or passed an examination, in addition to a number of special subjects.

Admittance to the course and entry to the commercial schools' vocational tests are available to all students on normal courses for the retail assistant's examination and to those who have passed the retail assistant's examination, commercial examination or higher commercial examination. The schools may allow others to participate in the instruction concerned and to enter the test provided the person concerned is 17 years of age by 31 October of the year the course is commenced.

Instruction for the vocational tests is generally provided at evening classes, and for each subject it involves between 40 and 180 hours, often distributed over one or two terms. The most popular subjects are typewriting, book-keeping, English and German, but lessons are also provided in French, Spanish, display, commercial correspondence, stenography, basic EDP, tourism, technology, etc.

The instruction concludes with a written and/or oral test, and examination certificates are issued for each subject.

The State-controlled vocational tests give direct access to the commercial schools' State-controlled higher vocational tests. In addition, one or more vocational tests together with previous lower secondary or other commercial instruction will often give admittance to commercial examination courses for persons not directly qualified.

Commercial examination

The purpose of the current commercial examination, which is structured in accordance with the Minister of Education's Notice of 8 February 1973 concerning the commercial examination, is to provide an opportunity for moving on to the higher commercial examination for those who have not had practical experience during an apprenticeship, and to act as an admission certificate to apprenticeships within the retail, clerical and commercial fields.

The dual purpose of the commercial examination has resulted in streaming, and a choice may therefore be made between the commercial examination's general stream, the accountancy stream, the languages stream and the retail stream.

Previously, under Notice No 149 of 21 March 1951, the commercial examination was divided into three one-year courses: A, B and C. Course A was structured on the 7th and 8th forms of the lower secondary school, Course B on the 9th form of the former middle-school examination department and Course C on the lower secondary school examination department and perhaps the 10th form.

Admittance to the four streams is open to those who have passed the retail assistant's examination or present a certificate for the State-controlled test on termination of the 10th form of the lower secondary school, the lower secondary school examination or an equivalent or higher qualification and—except for the language and accountancy streams—to those who have passed the State-controlled test on termination of the 9th form.

The marks for languages and the extent of earlier languages education is of great importance for admission to the general stream, and particularly to the languages stream.

In special cases, exemption may be granted from the terms of admission to the commercial school, perhaps after sitting a special test.

Instruction in all streams covers one year of day classes. For those having the retail assistant's examination from the retail school however, this course is for six months only. Instruction covers about 1 200 hours at about 30 hours a week. In the general stream, instruction is provided in eight subjects: Danish, English, German, book-keeping, arithmetic, office procedure, sociology and typewriting. In the languages stream, the syllabus has been extended to include stenography, and more emphasis is given to English and German. No instruction however is provided in the general subjects of Danish, arithmetic and sociology. The accountancy stream covers substantially the same subjects as the general stream, supplemented by accountancy and business economics, but instruction is also given in one foreign language. The retail line is the most specialized, great emphasis being given to practical and theoretical problems in the retail trade, but at the same time there are many lessons in English and German.

Examinations are held once a year in May/June, with written and/or oral tests in all subjects. In the retail stream however the instruction is concluded after the first term by internal tests, generally in December.

The commercial examination gives admittance to further and supplementary education, for example to courses for the State-controlled vocational tests and higher vocational tests, the higher commercial examination and examinations for correspondents in one and three languages.

Higher vocational tests

Like the commercial examination, courses for higher vocational tests have a dual object: to provide in themselves a basis for employment within the commercial and clerical fields, with special emphasis upon the areas where there is a higher vocational test, and to facilitate admission to or provide direct admission to further education. The current regulations on higher vocational tests may be found in the Minister of Education's Notice No 585 of 19 November 1973.

Acceptance for instruction and entry into the tests is open to those who are 17 years of age not later than 31 October in the year training commences or who are preparing for or have passed the retail assistant's examination; that is, all those having the commercial examination and vocational tests will be admitted.

The tests in English, German and French are in addition conditional upon the student having passed a test in the language in which instruction is desired equivalent to the highest degree of difficulty in the retail assistant's examination, having matriculated in modern languages or having passed the commercial examination in the languages stream or the higher commercial examination. Matriculation in other streams may however also be accepted for the test in French.

In special cases, exemption may be granted from the conditions for admission, perhaps by taking special tests.

Instruction for the higher vocational tests is organized in the form of evening studies. Instruction is provided in

English, German, French, Spanish, commercial law, maritime law, typewriting, stenography, mathematics, accountancy and the special book-keeper's test. Apart from the book-keeping, typewriting, stenography and commercial law tests, instruction covers 144 hours distributed over one year.

For those commencing courses in languages whose qualifications correspond to the medium degree of difficulty in the language concerned for the retail assistant's examination, instruction covers 216 hours.

The book-keeping test, which consists of the test in accountancy and a test in business economics, covers a total of 360 hours distributed over not more than three years. The tests in stenography, commercial law and maritime law cover 108 hours and the test in typing 72 hours.

Examinations are held once a year in May/June. Commercial law and maritime law end with an oral test, and accountancy, stenography, typewriting and mathematics end with a written test, both written and oral examinations being held for the other subjects.

Good marks in the written tests in the language concerned provide direct admission to studies for the one-language correspondent's examination in English, French or German.

Those who have passed a higher vocational test in subjects taught: for the higher commercial examination within five years of sitting for the higher commercial examination need not undergo instruction nor take the test in those subjects in courses for the higher commercial examination. The marks in the higher vocational test are transferred to the examination certificate for the higher commercial examination.

There is also some relief in the admission conditions for many of the studies at commercial high schools. This applies to studies for the three-language correspondent's examination, HA (degree in commerce) and HD (diploma in commerce) (see below).

Higher commercial examination

The higher commercial examination is the most advanced and broadly oriented examination at the commercial school. Instruction is directed in general towards young people who wish by means of further education to reach senior positions in commercial and office activities, but school leavers with the higher commercial examination are also admitted into other fields of trade and industry. The detailed regulations concerning this training are set out in the Minister of Education's Notice of 9 February 1973. Instruction for the higher commercial examination is divided into a two-year course and a one-year course.

Admission to the two-year course is open to those who have passed the retail assistant's examination in English and German at the medium degree of difficulty with satisfactory marks in both of these subjects, and to those who have passed the commercial examination. If the commercial examination was taken in the accountancy stream, students without the lower secondary school examination must pass an additional test corresponding to the medium degree of difficulty in the language in which the student concerned has not passed a test in the commercial examination. The retail stream of the commercial examination

grants admission only with English and German corresponding to the medium degree of difficulty for the retail assistant's examination, with satisfactory marks in both subjects.

Admission to the one-year course is open to those who have matriculated and passed the higher preparatory examination with French as an optional subject, or an equivalent or higher examination.

In special cases, exemption may be granted from the admission conditions, perhaps by taking special tests.

Instruction in the higher commercial examination is at day classes and covers about 1 200 hours a year, normally 30 hours a week.

Instruction in the normal two-year course is given in 14 subjects distributed between languages, mathematics, history, economics, special commercial subjects, commercial law and accountancy.

The normal one-year course covers nine subjects. Compared with the two-year course, mathematics, Danish, history, commercial history and economic geography have been omitted.

The higher commercial examination gives admission to the one- and three-language correspondent courses at the commercial high schools, as well as to studies for the degree (HA) and the diploma (HD) of the commercial high schools. In most cases the requirement is either minimum marks in certain subjects or special entrance tests.

Number of students at commercial schools: 1972—25 162; 1973—21 768.

State-controlled special courses at commercial schools

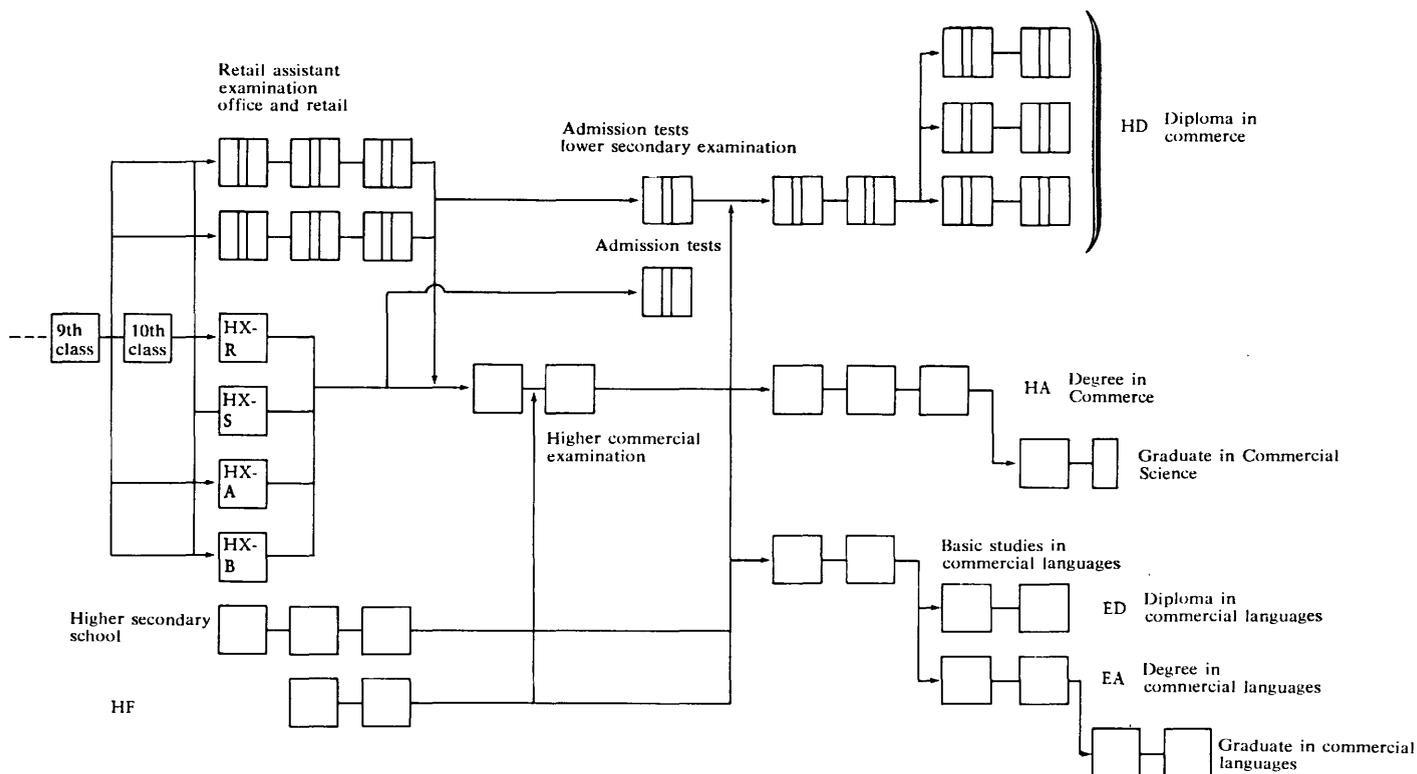
The special courses were set out in the Notice of 17 September 1968. Training began in 1961 at the Commercial College in Copenhagen, and is here established as the Special School in Copenhagen. Training is voluntary, and has now been adopted by almost all the commercial schools in the country.

The purpose is to meet the need for further training for employees at the medium level.

The following examinations give admission to, *inter alia*, the special courses: retail assistant's examination, commercial examination, higher commercial examination, basic vocational education, State-controlled test in book-keeping or higher vocational test in accountancy, book-keeping test, degree or Part 1 diploma of the commercial high schools, or a university, Part 1 of the Savings Bank School examination, the leaving examinations of the Banking School, the School for Workshop Employees or a technical college and training in one of the semi-technical subjects.

There are at present ten schemes covering one, two or three years of evening classes with a large subject area corresponding in general to the subjects in the diploma studies at the commercial high schools (see below). Instruction and tests in business economics, organization I and personnel management are compulsory for all, but the commercial examination in the accountancy stream, the higher commercial examination, the book-keeping test or Part 1 of the degree or diploma of the commercial high schools gives exemption from business economics.

Commercial and clerical training schemes



Industry and crafts

Training schemes for technical examinations

Technical developments and the growth of industrial production gave rise to a growing demand for technicians with various forms of training. The new industrial structure and technical organization have made it possible and justifiable to a greater degree than before to employ technicians with shorter and more specialized training.

The Technicians' Commission of 1956 was particularly active in putting forward proposals for many new and shorter technical education schemes.

These schemes must often be amended because of rapid industrial development, and it is sought to organize the schemes in such a way that there is an opportunity for continued and further education.

The shorter technical examination schemes are carried out in the examination departments of the technical colleges.

The instruction for technicians referred to here includes almost all disciplines within practical and theoretical technical training. Training is provided in the form of workshop, laboratory, practical or class instruction.

The schemes are carried out in accordance with approved curricula which give general directions as to the content and scope of the instruction. The general aim is a useful vocational ability on the basis of a relatively short but compulsory training course.

The objectives, the examination system, the basic framework of the curricula and guidelines for instruction are approved on the basis of proposals from the Training Boards that advise the Directorate of Vocational Training Schemes of the Ministry of Education.

The duration of the schemes differs greatly. It depends upon the intended vocational qualifications, and varies therefore from six months to three-and-a-half to four years. Some schemes provided theoretical instruction only; others alternate this with practical training.

Completed training is in many cases supplemented by special courses to extend the students' knowledge in a special subject area.

Examinations are held under various arrangements set out by the Minister of Education, and are controlled by the Directorate of Vocational Education Schemes through various examination committees. These, like the many other boards of examiners, are appointed by the Minister.

In addition, the Directorate of Vocational Education Schemes ensures that examination papers, examination records, examination certificates, special study matters, etc are implemented in accordance with the general regulations provided for the schemes.

As the nature of the schemes in many cases necessitates both workshop and laboratory training within the school itself, organization of day-school training also involves official approval of equipment and aids used in the training for the individual disciplines.

Training for technicians on the basis of preliminary vocational experience (journeyman's certificate)

Electronic technician

(Notice of 23 August 1968, as amended by Notice of 6 July 1971).

The *objective* of the training is to qualify the student to:

- (1) carry out dimensioning and construction of typical electro-technical apparatus and circuits, with responsibility to a technical manager;
- (2) give technical assistance when purchasing, operating, maintaining and exchanging electronic instruments and equipment; and
- (3) cooperate in and control the arrangements for and execution of production and quality control.

Admission to the scheme is open to persons who have passed the technical preparatory examination with two languages, or an equivalent or higher examination, and who have:

- (a) obtained a journeyman's certificate as an electronic mechanic or radio mechanic, or
- (b) obtained a journeyman's certificate in other trades with at least three years' apprenticeship in the fitters' and mechanics' trade or the electricians' trade if the person concerned has during or after apprenticeship concluded supplementary training so that the total instructional content corresponds to the content of the special practical instruction referred to under Point 3, or
- (c) has received instruction with satisfactory results at a workshop school for electronic engineers for a total of 12 months, supplemented by at least 15 months' employment at one or more electronic engineering undertakings in a field of work relevant to the study, or
- (d) has been employed in practice for at least six years, of which at least three years have been in work procedures in the fields of assembly work or apparatus construction, installation, fault-finding and repair of electronic equipment, and has in addition acquired the theoretical basis prescribed for the special practical training referred to under Point c, or
- (e) has received training as a technical assistant or other equivalent training and, in addition to an examination, has received such training and had such employment that the requirements for the special practical training referred to under Point c have been met.

Admission to a workshop school (see Point c) calls for the extended technical preparatory examination with two foreign languages, lower secondary examination with mathematics or an equivalent or higher examination.

Where there are special circumstances, exemption from the admission conditions may be granted.

Instruction may be in the form of day classes, evening classes or correspondence, supplemented by periodical instruction at a technical college.

Where a course is in the form of day classes, the instruction covers three terms each of 20 weeks, or 700 hours of lessons.

The most important subjects in the first term are physics and general electro-technology, mathematics, laboratory exercises and measuring techniques. In addition, instruction is provided in technical arithmetic, the science of materials, mechanical technology and English. In the second term, the most important subjects are electronic technology, laboratory exercises, measuring techniques and electronic design. Apart from this, instruction is provided in mathematics, English, German, technical drawing and theory of materials and components.

In the third term, the most important subjects are electronic projects, electronic technology, laboratory exercises and measuring techniques. In addition, instruction is provided in mechanical design and business management.

After the first term there is a qualifying test, and upon conclusion of the second and third terms there is an examination.

The Notice of 23 August 1968 has replaced the Notice of 7 September 1957 on Courses for Electronic Technicians as amended by the Notices of 22 June 1960 and 10 July 1967.

Instruction is provided at the technical schools at Frederiksberg, Sønderborg and Århus.

Building technicians and builders

(Notice of 31 August 1966 as amended by Notice of 10 July 1968 and 6 July 1971).

The *objective* of the education is to enable students to:

- (1) participate as building technicians in the construction of buildings and during preparations therefor, and
- (2) as builders and in cooperation with other planning and production staff, to carry out mainly technical planning, to prepare and direct the construction of buildings and in general to occupy management positions in the operation and control of undertakings.

Admission to the training for building technicians is conditional upon the applicant having passed within the last six years the technical preparatory examination with two languages, lower secondary examination with mathematics, or an equivalent or higher examination.

In addition, the applicant must have undergone practical training of a more precise content:

- (a) entered for and passed the journeyman's tests as bricklayer, carpenter, joiner or plumber, or entered for and passed the journeyman's test in other building trades supplemented by one year's employment on site engaged in manual work or as assistant to the site supervisor or site manager, or
- (b) entered for and passed the journeyman's test in trades associated with the building trade, provided he has been employed on site in manual work for at least one year in one of the trades giving direct admission as set out under Point a above or as assistant to the site supervisor or site manager, or

- (c) undergone instruction with satisfactory results at a workshop school for building technology for a total period of one year, supplemented by at least one year's employment in one or more undertakings within the building trade engaged in manual work on site or as assistant to the site supervisor or site manager, or
- (d) employed in manual work for at least one year on site after reaching the age of 16 or as assistant to the site supervisor or site manager, and passed through the workshop school referred to under Point c above, or
- (e) employed for at least three years in manual work on site after reaching the age of 16, or as assistant to the site supervisor or site manager, and completed certain approved courses for non-skilled workers, or
- (f) undergone training as a technical assistant or other equivalent training with one year of practical experience with a building undertaking and subsequently acquired knowledge in practical building for at least one year or, if the practical year did not include building activities with manual work or as assistant to the site supervisor or site manager, employment on site for at least two years, or
- (g) concluded the first part of architectural studies at the Architectural Department of the Academy of Fine Arts in Copenhagen or the first and second terms at the Architects' College at Århus, with satisfactory results in: structural systems, technical installations, science of materials and surveying, and also employed for at least one year in manual work on site in the bricklaying, carpentry, joinery or plumbing trades or as assistant to the site supervisor or site manager. Equivalent practical experience during or in association with the architectural studies may be included in the practical period. In special cases, the Directorate of Vocational Education Schemes may grant exemption from the requirement that the practical period must be concluded before training as a building technician commences.

Admission to the workshop school referred to above is conditional upon the applicant having passed the extended technical preparatory examination with two foreign languages, the lower secondary examination with mathematics or an equivalent higher examination.

Admission to training as a *builder* is conditional upon the person concerned having passed the building technician's examination.

Training for building technicians covers three terms. The Notice of 10 July 1968 states, however, that persons who have concluded Part 1 of architectural studies at the Academy of Fine Arts in Copenhagen or the first and second terms at the Architectural College at Århus etc, (see above under (g)) may undergo instruction to become a building technician at a special one-term course.

Training for builders lasts four terms (two years) after conclusion of the building technician's examination (one-and-a-half years), or a total of three-and-a-half years.

Apart from the main subject of house construction, instruction for building technicians covers structural systems, technical installations, the science of materials and technical drawing. In addition, instruction is provided in the plan-

ning and control of building projects, surveying, mathematics, physics and chemistry. Finally, there is instruction in Danish and foreign languages.

Apart from the central subject of house construction, Part 1 of the builder's training covers instruction in structural systems, technical installations and the science of materials. In addition, instruction is provided in the planning and control of building projects, estimating, financial management and legal subjects. Instruction for Part 2 concentrates upon the optional special subject, supplemented by preparation of a school-leaving project.

Building technicians may be admitted to architectural training. Applicants who have not passed at least the lower secondary examination or equivalent must also have passed the special tests in Danish, history and one foreign language that are held at the architectural colleges.

The study of architecture, which normally lasts five years, is normally four years for building technicians.

Training to become a building technician is provided at the technical schools at Esbjerg, Haslev, Horsens, Kolding, the Technical Association's Schools at Copenhagen, Odense, Randers, Rønne, Søderborg, Aalborg and Århus.

Training to become a builder is provided by the Building High School at the Horsens Technical School and at the Technical Association's schools at Copenhagen.

Machine technician

(Notice of 11 November 1964, as amended by Notice of 6 July 1971).

The purpose of this training is to provide students with a technical education that qualifies them to work as assistants either in design or work techniques.

Admission to the training is conditional upon the applicant having:

- (a) passed the technical preparatory examination with two foreign languages, the lower secondary examination or an equivalent or higher examination, and
- (b) taken the journeyman's test in one of the following subjects: vehicle electrical mechanic, vehicle mechanic, electro-mechanic, precision mechanic, instrument maker, agricultural machinery mechanic, fitter, orthopaedic mechanic, tool maker, armourer, or
- (c) in any other way acquired such knowledge that the practical training requirement for admission to mechanical engineering schools has been met.

Where there are special circumstances, exemption from the above admission conditions may be granted.

Courses for the training of machine technicians are conducted in day classes lasting one academic year divided into two terms with a total of 1 400 hours. Part 1 is common to all students, while Part 2 is divided into two streams, with design and work techniques respectively as special subjects.

Instruction may also be given in evening classes or in correspondence courses, combined with direct instruction where specially approved.

The most important subjects in Part 1 are mathematics, drawing and operational technology. Instruction is also given in statics, physics, technology, workshop organization, the science of materials, electro-technology and Danish.

The most important subjects in Part 2 for machine technicians with design as the special subject are drawing and design, while the most important subjects for machine technicians with operational technology as the special subject are operational technology, workshop organization, drawing and design. In addition, instruction in the other subjects in Part 1 is continued.

A qualifying test is held at the end of Part 1, and an examination at the end of Part 2.

Training of machine technicians is conducted at the technical schools in Esbjerg, Helsingør, Kolding, Odense, Randers, Slagelse, Sønderborg and Aalborg, and at the Technical Association's schools at Copenhagen.

Gold and silver designers

(Notice of 9 June 1971)

The purpose of the training is to provide students with theoretic and practical knowledge to enable them to work as craftsmen and designers in the gold, silver and engraving trades.

Admission to the training is conditional upon the person concerned having, before commencing instruction:

- (a) taken the journeyman's test in a branch of the gold, silver and engraving trade;
- (b) shown suitability for the training in an entrance examination conducted by the school.

Where there are special circumstances, the school may accept students who do not meet the set conditions.

Training as a gold and silver designer is conducted in two parts, each of one year.

The most important subjects are general design, styling and technique, economics and law of the trade and social and cultural conditions.

In both Part 1 and Part 2 students prepare course work that determines whether training is being assimilated in a satisfactory manner and whether a leaving certificate can be issued.

Instruction for gold and silver designers is provided at the Technical Association's schools at Copenhagen.

Textile technician

(Notice of 22 December 1965)

The purpose of the training is to provide students with technical knowledge and practical ability to enable them to assist in production management in spinning mills, weaving mills, knitwear factories and other undertakings within the textile industry.

Admission to the training is conditional upon the applicant having passed the technical preparatory examination with two foreign languages, the lower secondary examination with mathematics, or an equivalent or higher examination.

Training of textile technicians consists of one year of specially arranged practical training in textile undertakings, followed by a one-year theoretical course of 39 weeks of instruction.

In special circumstances, former employment in the textile industry may replace wholly or in part the practical training referred to above.

The theoretical instruction is conducted at the Swedish Textile Institute, Borås, under arrangements made by the Frederiksberg Technical School. This school is responsible for the issue of a textile technician's leaving certificate.

Timber technician

(One-year course)

The purpose of the training is to provide future and existing managers in undertakings within the timber trades with the best possible practical and theoretical background for work as foremen, operational technicians and works managers.

Admission to the training is conditional upon at least nine years of schooling or the technical preparatory examination, as well as a journeyman's certificate in one of the timber trades or the forestry technician examination.

Unskilled workers with at least four years' practical experience in saw mills or other undertakings in the timber industry and the schooling referred to above may be accepted upon application.

Content and extent of training :

Operational technology, workshop and production planning
Science of materials and timber technology
Drawing and design
Mechanical engineering, automation, etc.
Accounts and costing
Physics, vocational arithmetic and mathematics
Danish and office techniques
English and German
Total number of hours, 1 600.

Training ends with an examination, which takes about 40 hours. Instruction is provided at the Technological Institute at Copenhagen.

Heating, ventilation and sanitary technicians

(Notice of 20 September 1971)

The purpose of the training is to qualify course participants to work as technicians in manufacturing or purchasing undertakings within the field of heating, ventilation and sanitation, to undertake assignments of a technical nature, to carry out dimensioning and planning and to administer such undertakings.

Admission to this training is conditional upon the person concerned having, before training commences:

- (a) passed the technical preparatory examination or an equivalent or higher examination or proved in an entrance examination held at the school his ability to receive this training;
- (b) passed the apprenticeship test as a pipesmith, fitter specializing in piping, plumber or constructional and agricultural fitter.

Where there are special circumstances, students may be accepted who do not meet the conditions set out under b.

The one-year training covers:

- (1) Basic course of 250 hours.
- (2) Course in gas, water and sanitation technology of 500 hours.
- (3) Course in heating and air-conditioning technology of 300 hours.
- (4) Course in administration and management of 400 hours.

Each course ends with a test and an examination certificate. Instruction is provided at the technical schools at Herning and Slagelse.

Further education for journeyman painters

(Notice of 14 February 1966)

- (a) Training at the *journeymen's school* is intended to qualify students as foremen, estimators, etc. in decorating undertakings.
- (b) Training at the *diploma school* is intended to qualify students for work as decorators, consultants and managers in decorating undertakings.

Admission to the *journeymen's school* is conditional upon the applicant having taken the journeyman's test in the housepainting trade.

Admission to the *diploma school* is conditional upon the person concerned having passed the final test at the journeymen's school.

Training at the *journeymen's school* consists of two terms, each of about 12 weeks, if instruction is in day classes. Between Terms 1 and 2 there is practical training for five months.

The most important subjects at the journeymen's school are painting techniques and drawing. Instruction is also given in lettering, decoration, measuring, colour theory, the science of materials, interior design, Danish, mathematics and work management.

Training at the *diploma school* consists of one course which, if conducted as a daytime course, is of about 36 weeks. This course consists exclusively of theoretical instruction.

The most important subjects at the diploma school are drawing, decoration, lettering and colour theory. Instruction is also given in the science of materials, surveying, Danish, architecture and the history of art. In addition, an independent examination project is prepared to which about one-quarter of the period is devoted.

Training at both the journeymen's and the diploma school may also be conducted as evening or correspondence courses, following special approval.

Both forms of training end with leaving tests.

Training at the journeymen's school is provided at the technical colleges at Frederiksberg, Odense, Randers and Aalborg.

Training at the diploma college is provided at the technical college at Odense.

Courses for the training of managers in craft undertakings

(Notice of 17 December 1964)

The purpose of the training is to give craftsmen with the necessary vocational qualifications further training to qualify them for management in a craft undertaking.

Admission to the training is open to those who have completed apprentice training and passed a journeyman's test, or who otherwise meet the practical training requirements set out for admission to colleges of technology.

In accordance with the Notice, a curriculum has been prepared for a common vocational course for the training of managers in craft undertakings. The course is of four terms of evening classes, a total of 312 hours.

Instruction includes business management, economics, production, buying and selling and social questions.

A course certificate is issued at the end of the course.

A course for the building trades has also been approved.

The purpose of this course is to give craftsmen within the building trades further training with a view to their managing craft undertakings in the building trade.

This training is open to persons who have completed the common vocational course.

The course consists of 162 hours of evening classes, divided into two terms. The course can also be completed as four weeks of day classes.

Instruction covers the same subjects as the common vocational course, but gives particular emphasis to the circumstances of the building trades.

A course certificate is issued at the end of the course.

The course is held in very many technical schools.

Courses of shorter duration

Apart from the training schemes referred to above, which all have vocational training as a basic pre-condition, there are a number of courses of shorter duration—in certain cases at evening classes.

These include training for sewerage foremen, gas, water and sanitation foremen, workshop salaried staff and courses at the non-examination building day-school.

Training schemes for technicians that are not based upon earlier vocational experience

Technical assistant

(Notice of 18 July 1968, as amended by Notice of 6 July 1971)

The purpose of the training is to provide students with theoretical and practical training to qualify them for work as assistants in undertakings within industry, the crafts and the constructional trades, in public institutions associated with the technical trades, and with planning architects, engineers and surveyors.

Admission to the training scheme is conditional upon the person concerned having passed before training commences the technical preparatory examination or an equivalent or higher examination.

The training covers theoretical instruction for two terms and practical training normally for one year.

The theoretical instruction may be conducted as day classes, evening classes or by correspondence, supplemented by periodical training at a technical school. Training consists of the completion of two vocational terms.

If the theoretical instruction is conducted as day classes, Term 1 is of 20 weeks of 700 hours. After passing a qualifying test, the student then normally goes on to practical training for a least one year in accordance with directions set out in detail. Under certain circumstances, previous employment can replace practical training.

Term 2 is of 24 weeks or 840 hours. Students may choose between three streams in Term 2, directed towards the building and construction trades (B), construction departments in the mechanical, electrical and other industries (M) and planning and management in industrial undertakings (D).

Students selecting stream B must take a 105-hour course in levelling either during the practical period or after the end of Term 2.

Subjects taught in Term 1 are mathematics, physics, technology, drawing, operational technology, business economics and office techniques.

Streams B and M in Term 2 cover statics and estimating in addition to the subjects referred to above.

The D stream covers the same subjects as Term 1, with special emphasis on operational technology. In addition, lessons are given in statics.

An examination is held at the end of Term 2.

The Notice of 18 July 1968 has replaced Notice No 321 of 11 November 1964 on Courses for Training Technical Assistants.

Under certain conditions, technical assistant training gives admission to training courses for building technicians, electronic technicians, machine technicians and engineering studies at the schools of technology.

Training courses for technical assistants are at present provided at the technical schools at Esbjerg, Frederikshavn,

Helsingør, Herning, Hjørring, Horsens, Kolding, Nykøbing F., Naestved, Odense, Randers, Ringsted, Rønne, Slagelse, Struer, Svendborg, Sønderborg, Viborg, Åbenrå, Aalborg, Århus and Thorshavn, and at the Technical Association's Schools in Copenhagen.

Draughtsman

(Notice of 23 August 1963, as amended by Notice of 16 July 1971)

The purpose of the training is to provide a theoretic and practical education to qualify those taking part for work as assistants in drawing offices.

Training is available to persons who have completed the 9th form State-controlled test with mathematics, the technical preparatory examination or an equivalent or higher examination.

Where there are special circumstances, exemption from the admission conditions may be granted.

Training consists of a course in technical drawing, supplemented by one-and-a-half years of practical training.

Courses may be taken as day classes, evening classes or by correspondence, supplemented by periodical instruction at a technical school. If the course is conducted as day classes, it is of 20 weeks or 700 hours. The most important subject is technical drawing. In addition, lessons are given in arithmetic, mathematics and technology.

An examination is held at the end of the course.

After passing the examination, the student must undergo practical training for one-and-a-half years in accordance with the detailed regulations.

When the student has completed the practical training and this has been proved to the school, the school at which the person concerned took his examination provides an examination certificate with the designation 'draughtsman'.

Instruction has been entrusted to the Technical Association's schools in Copenhagen and the technical colleges at Odense, Slagelse and Århus.

Biological and chemical laboratory assistants

(Notice of 22 July 1969, as amended by Notice of 6 July 1971)

The purpose of the training is to provide students with theoretical and practical laboratory training to qualify them for general biological or chemical laboratory work and to act as assistants to laboratory technicians, engineers and others in laboratories working in the fields of biology or chemistry.

Admission to the training is conditional upon the applicant:

- (a) having reached the age of 16; and
- (b) having passed the technical preparatory examination with two foreign languages, lower secondary examination with mathematics or an equivalent or higher examination.

Where there are special circumstances, exemption from the conditions set out above may be granted.

The training consists of a basic course of 20 weeks of day classes, supplemented by a one-and-a-half year practical period.

The training has two streams: biology and chemistry.

Basic courses may also be taken as evening classes or by correspondence, supplemented by periodical instruction at a technical school.

About half of the instructional period in the basic courses, in which biology and chemistry are special subjects, is employed in laboratory training.

In addition, the most important subjects for the biology stream are laboratory technique, instrument theory, physics, biochemistry, mathematics and microbiology.

In the chemistry stream, the instructional period is employed, apart from the laboratory training, in lessons in laboratory technique, instrument theory, physics, chemistry, mathematics, etc.

Laboratory assistants with biology or chemistry as special subjects can go on to become laboratory technicians in analogous special subjects, for example chemico-technicians or, after taking a special six week course, food technicians.

Training as a laboratory assistant with biology as the special subject is provided at the technical schools in Frederikshavn and at the butchery schools at Roskilde, Åbenrå and Århus.

Training as a laboratory assistant with chemistry as the special subject is provided at the technical schools in Esbjerg, Kolding, Slagelse and Århus, and in Copenhagen at the Institute of Technology and the Laboratory Assistants' School in the Metropolitan Area.

Laboratory technician with biology or chemistry as main subject

(Notice of 22 July 1969, as amended by Notice of 6 July 1971)

The purpose of the training is to provide students with theoretical and practical laboratory training to qualify them for the more demanding biological or chemical laboratory work, for independent control of general laboratory work, for work as assistants to laboratory managers in large laboratories and, in certain cases, for independent control of laboratories and laboratory departments in the fields of biology or chemistry.

Admission to the training scheme is conditional upon the applicant having:

- (a) passed the laboratory assistant's examination in the main subject concerned; and
- (b) completed approved practical training of at least one-and-a-half years after passing the above examination.

Where there are special circumstances, exemption from the admission conditions referred to above may be granted.

The training consists of a course of about 40 weeks in the case of day classes.

The training scheme has two streams: biology and chemistry.

Courses may also be taken at evening classes or by correspondence, supplemented by periodical instruction at a technical school or an institute of technology.

In both streams, about half of the training is laboratory work.

Laboratory technicians with biology as their special subject also receive instruction in chemistry, bio-chemistry, technical bio-chemistry, laboratory techniques, microbiology, mathematics, physics, anatomy, physiology, languages, etc.

Apart from laboratory work, laboratory technicians with chemistry as their special subject receive instruction in inorganic and organic chemistry, laboratory techniques, mathematics, physics, languages, etc.

The training period ends with an examination.

Training courses for laboratory technicians with biology as their special subject are provided at the technical schools at Frederikshavn and at the butchery schools at Roskilde and Århus.

Training courses for laboratory technicians with chemistry as their special subject are provided at the technical schools at Esbjerg, Slagelse and Århus, and at the Institute of Technology in Copenhagen.

Chemical technicians

(Notice of 22 July 1969, as amended by Notice of 6 July 1971)

The purpose of the course is to give students theoretical and practical training to qualify them for operational control, management of small production sections and other technical assignments within the chemical and biological industries, and as assistants to engineers and others responsible for operations within these industries.

Admission to the course is conditional upon the applicant having:

- (a) passed the examination for biological or chemical laboratory assistants;
- (b) completed a period of practical training of at least one-and-a-half years after passing the examination referred to above.

The training consists of a course of about 40 weeks in the case of day classes.

Courses may also be taken at evening classes or by correspondence, supplemented by periodical instruction at a technical school or an institute of technology.

Apart from the most important subjects such as chemical technology, mechanical theory and the science of materials, instruction includes mathematics, electronics, measuring techniques, library usage, etc.

The training ends with an examination.

Training for chemical technicians is provided at the Institute of Technology in Copenhagen.

Food technicians

(Notice of 17 December 1968, as amended by Notice of 6 July 1971)

The purpose of the training is to qualify students for independent work in production, quality control and other fields in small undertakings within the food industry, and to act as assistants to technical managers in large undertakings within the food industry.

Admission to the training scheme is conditional upon the student having:

- (a) reached the age of 16; and
- (b) passed the technical preparatory examination with two foreign languages, lower secondary school examination with mathematics or an equivalent or higher examination.

Where there are special circumstances, exemption may be granted from the admission conditions set out above.

The training consists of theoretical instruction of one-and-a-half years and practical training normally of one-and-a-half years.

The theoretical instruction may consist of day classes, evening classes or a correspondence course, supplemented by periodical training at a technical college. Instruction consists of a basic course and a technician's course.

If theoretical instruction is taken at day classes, the basic course is of 20 weeks or 700 hours. After passing a qualifying test, the student then normally undergoes the practical training period of at least one-and-a-half years in accordance with detailed directions. Under certain circumstances, previous employment may replace practical training.

The technicians' course is of 40 weeks or 1 400 hours.

Students who have passed an examination as biological or chemical laboratory assistants may be accepted directly into the technicians' course after taking a special course of six weeks. This course may be taken during the practical training period.

The subjects taught in the basic course are mathematics, laboratory techniques, instrument theory, physics, microbiology, food chemistry, raw material technology, etc and laboratory practice.

The most important subject in the technicians' course is food technology. In addition, instruction is provided in mathematics, measuring and control techniques, physics, mechanical theory, cooling techniques, the science of materials, packaging techniques, etc.

An examination is held at the end of the technicians' course.

Training for food technicians is provided at the butchery school in Roskilde.

Number of students at technical schools—technicians' training scheme: 1972—8 294; 1973—7 242.

Training schemes for craftsmen

(Notice of 27 April 1971)

The purpose of the training is to give students basic training to qualify them for work as craftsmen or designers in the crafts and industry. To this end, the course is intended to provide them with knowledge of the working methods and technical requirements of the trade, to extend their artistic independence and their ability to analyse and assess, and to instruct them in the social background of the trade and in the duties and working circumstances in society of craftsmen and designers.

Admission to the training is conditional upon the student having:

- (a) reached the age of 18;
- (b) proved his suitability for the training by an entrance test at the school.

Where there are special circumstances the school may accept students who do not meet the required conditions.

The training of craftsmen is normally of four years and is conducted in five streams:

- (a) Ceramic design, glass, etc.
- (b) Dress designing
- (c) Textile designing
- (d) Furniture design
- (e) Drawing and graphics.

Whichever stream is chosen, instruction covers four main subject areas: general design, vocational design and technology, vocational economics and law, and social and cultural conditions. Mainly in the last two years, students choose in consultation with the teachers supplementary experiments and assignments within their own or other streams, study at other educational institutions, participate in study tours, visit undertakings, etc.

During training, a student prepares course work which decides whether he may continue training and whether a leaving certificate can be issued.

Instruction for craftsmen is provided at the Technical Association's schools in Copenhagen and at the technical school at Kolding.

Clothing industry assistants

(Notice of 28 June 1968, as amended by Notice of 6 July 1971)

The purpose of the training is to provide students with knowledge and practical qualifications to enable them to work as assistants to technicians and managers in the various forms of production within the clothing industry.

Admission to the training is open to persons who have reached the age of 16 at commencement of the training.

The training, which can only be conducted as day classes, consists of two terms each of 20 weeks or 700 hours.

After passing a qualifying test at the end of the first term, the student must normally undergo practical training for one year in accordance with detailed directions. Under certain circumstances, previous employment in the clothing industry can replace practical training wholly or in part.

In the first term, the most important subjects are ready-to-wear clothing and practice in sewing techniques. In addition, instruction is given in mechanical engineering, the science of materials, work instruction, system registration, bargaining conditions, Danish and arithmetic.

In the second term, the most important subject is ready-made clothing. In addition, there is instruction in mechanical engineering, science of materials, model design, production technology, theory of the trade, factory organization, wage systems and bargaining conditions, work physiology, work instruction, Danish and arithmetic.

An examination is held at the end of the second term.

Training for clothing industry assistants is provided at the Danish School for Ready-made Clothing and Knitwear at Herning.

Clothing industry technicians

Training is provided as a one-year experimental training scheme at the Danish School for Ready-made Clothing and Knitwear, and is based upon the training for clothing industry assistants. The training, which is partly at the school and partly practical, is divided into two streams:

- (a) the production stream, whose aim is to qualify the student as a foreman or works manager in association with planning, production and work studies;
- (b) model design, whose aim is to qualify the student for work in design, grading and cutting and, if necessary, to act as a connecting link between the designer and those responsible for production.

Industrial designers

Training is for two-and-a-half years, and is provided as an experimental training scheme at the Danish School for Ready-made Clothing and Knitwear.

The object of the training is to provide the students with practical and theoretical training to enable them, within the ready-made clothing and knitwear industry, to create products that are not only aesthetic but easy to manufacture, durable and pleasant to wear. With this in view, instruction is intended to provide the students with an insight into the technology and materials of the ready-made clothing industry and to give them an understanding of the design and artistic background of the products.

Admission to the training is conditional upon the applicant having:

- (a) completed the first term of the clothing industry assistant's training;
- (b) proved his suitability for this training in an entrance test held by the school.

The training, which consists of two divisions each of one year, interrupted by six months practical training, consists of four main subject areas: artistic subjects, production technology, industrial design and general subjects.

As part of the training, course work is prepared upon which it is decided whether the student has satisfactorily completed the course, and whether a leaving certificate can be issued.

Interior designers

(Notice of 20 December 1965, as amended by Notice of 6 July 1971)

The purpose of the training is to qualify students for work as independent interior designers, as specialist workers in interior design undertakings, furnishers and associated undertakings, in the drawing offices of architects, furniture designers and independent interior design consultants or as instructors in interior design.

Admission to the training is conditional upon the applicant having:

- (a) reached the age of 18;
- (b) passed a State-controlled test at the end of the 10th form of the lower secondary school with two foreign languages, the lower secondary school examination or an equivalent or higher examination; and
- (c) passed a special entrance examination in projective and free-hand drawing.

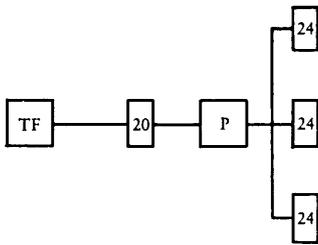
Where there are special circumstances, exemption from the provisions set out under Points b and c above may be granted, subject to a special test.

The education consists of three divisions, each of one year of 1 372 to 1 454 hours, or a total of 4 200 hours. A voluntary preparatory course of about 120 hours is held before the entrance examination.

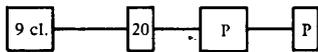
The most important subjects in this training are internal design and furniture theory. Instruction is also given in free-hand drawing, theoretical and applied perspective and projective drawing and drawing technique. In addition, instruction is given in building theory, the science of materials, measuring, stylistics, applied art, lettering, book-keeping, estimating, commercial science, etc.

A qualifying test is held at the end of the first and second divisions, and a leaving examination at the end of the third division. Interior designer instruction is provided at the Frederiksberg technical school.

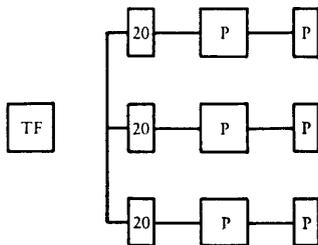
**Training schemes for technicians
(training for assistants)**



Technical assistant B
(building and installation
stream)



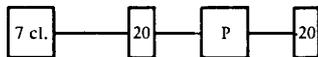
Technical draughtsman



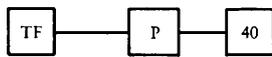
Biology laboratory assistant

Chemistry laboratory
assistant

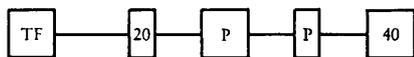
Physics laboratory assistant



Ready-made clothing
industry assistant



Textile technician



Food technician

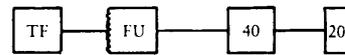
Symbols:

TF Technical preparatory examination

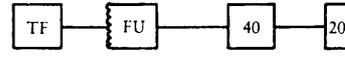
20 20 weeks' instruction

P one year's practical training

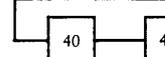
**Training schemes for technicians
(training of technicians proper)**



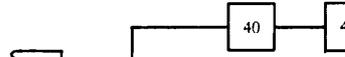
Electronics technician



Building technician



Builder

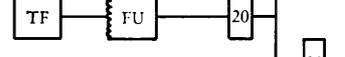


High School for Graphic
Arts (general studies course)

(Design study course)



Mechanical technician
(construction)



Mechanical technician
(operational technology)



Laboratory technician
(biology)



Laboratory technician
(chemistry)



* Laboratory technician
(physics)



Chemical technician



Clothing industry technician
(experimental)



Wood technician
(experimental)

Symbols:

FU vocational education concerned

TF technical preparatory examination

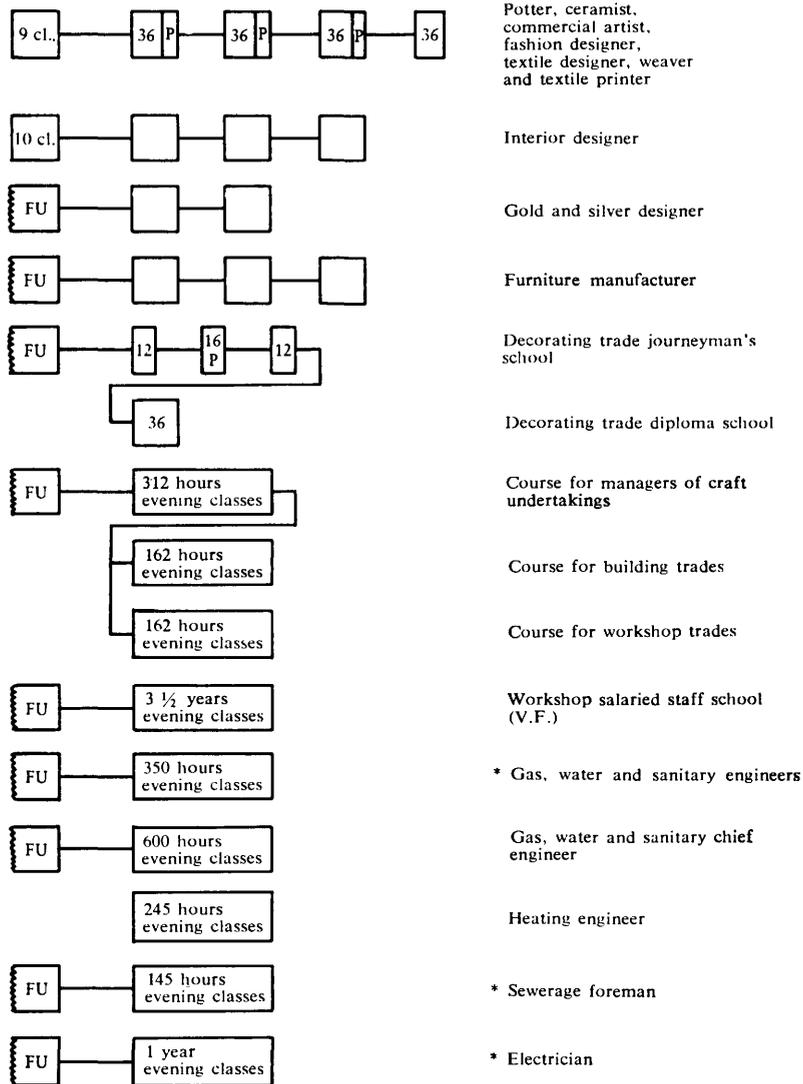
40 40 weeks' instruction

* Proposal

Other training schemes

Apart from the training schemes that can be related to one of the three categories (apprenticeship training, engineering training and technician training), there are many other training schemes directed towards specific activities in the crafts and industry.

Only some of these training schemes are carried out with government support under State-approved curricula. These include, at technical colleges and institutes of technology, training for craftsmen, authorization training, training for works managers and courses for business managers. There are very few common features in the entrance conditions, structure or duration of course for these groups.

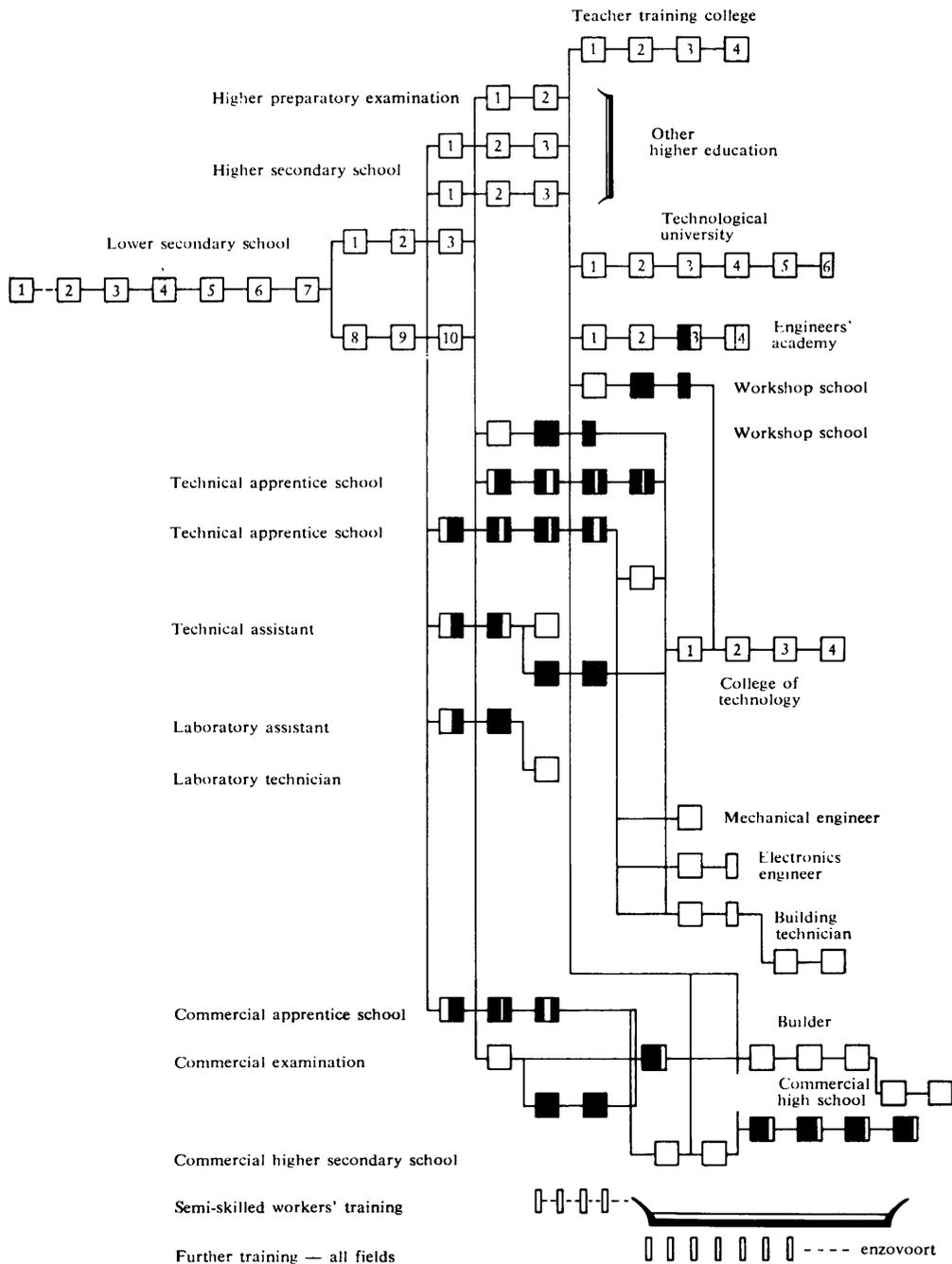


Symbols:

 36 weeks' instruction and 2 months' practical training in the trade

 Previous knowledge of the trade concerned

* Ends with authorization tests



Hovedskole:
Main department of the primary school
8.-10. klasserne:
Lower secondary general department of 8th, 9th and 10th forms classes
Realfdelingen:
Lower secondary examination department
Gymnasium:
Higher secondary school is divided into two streams: the language and the mathematics streams
Højere forberedelseseksamen:
Courses leading to the higher preparatory examination
Seminarium:
Teacher training colleges
Handelslærlingeskole:
Apprenticeship training — Commercial schools
Handelseksamen:
Commercial examination
Handelsgymnasium:
Higher commercial examination
Laboratorietekniker:
Laboratory technician
Laborant:
Laboratory assistant

Teknisk lærlingeskole:
Apprenticeship training — Industry and handicrafts
Maskintekniker:
Machine technician
Teknikum:
Colleges of technology
Teknisk assistent:
Technical assistant
Værkstedsskole:
Workshop school
Byggetekniker:
Building technician
Byggekonstruktør:
Building constructor
Specialarbejderuddannelse:
Training of semi-skilled workers
Erhvervsmæssig efteruddannelse:
Adult vocational training in all professions
Den polytekniske Lærestalt:
Technical university
Ingeniørakademi:
Engineer academy
Handelshøjskoler:
Schools of economics and business administration

Training of chief engineers

Training is in stages consisting of a six months engineers' course, one-and-a-half years' chief engineers' training and one year of training for the extended chief engineers' examination. Students who have completed the engineers' course may either accept employment in the trade in positions to which this training gives access or continue chief engineers' training. The engineers' training is therefore Part 1 of the chief engineers' course.

Admission conditions

To commence engineering studies, the student must have passed the technical preparatory examination with English or an equivalent or higher examination, and had or be undergoing practical training as set out below:

- (a) Apprenticeship to or completed apprenticeship in an approved trade or branch of trade. If during apprenticeship he has not been engaged in turning work for at least two months, training must be supplemented by an approved course in turning.
Applicants who have completed training as electricians must attend an approved workshop school for at least three months, followed by nine months' at sea as assistant engineer.
- (b) Attended or be attending an approved engineering workshop school for 12 months, followed by 21 months' practical training in work of importance to the training, of which at least 12 months is at sea as a probationary chief engineer.
- (c) Completed or commenced the practical training set out in the Minister of Education's Notice No 197 of 31 May 1965, Sec. 14, Point c, for school of technology applicants, supplemented by a practical training period corresponding to that in Point b above.
- (d) Completed a course for engine-room crew in accordance with the Minister of Trade's Notice No 499 of 28 December 1967, and subsequently sailed for 15 months as an able-bodied engine-room man and thereafter completed or commenced the workshop school course referred to under Point b above.

Instruction for the engineers' examination

Those who have passed the engineers' examination may, after 12 months at sea, obtain a maritime trading certificate as a marine engineer.

Instruction for the engineers' examination consists of the following subjects: electro-technology, mechanical engineering, hygiene, maritime legislation and practical fire-fighting.

Instruction in electro-technology and mechanical engineering is to give students knowledge of ships' technical installations where a maritime trading certificate for marine engineers is required so that, after passing the examination and after 12 months at sea, they can be made responsible for the safety and operation of these installations.

Marine engineers often serve in subordinate positions as engineer officers in large vessels, and instruction is therefore also given in the mechanical and electrical installations of these vessels, the main emphasis being on safety conditions.

Hygiene covers instruction in first-aid and personal hygiene, including a knowledge of infections, contagious diseases and poisons. Maritime legislation includes that part of Danish maritime legislation that is of importance to engineer officers.

With a view to safety duties on board, courses are held in practical firefighting.

Instruction for the chief engineers' examination

In order to commence chief-engineer studies, it is necessary for the person concerned to have passed the engineers' examination and to have completed the required practical training.

Those who have passed the chief engineers' examination can, after the necessary period at sea, obtain a maritime trading certificate as 1st, 2nd or 3rd class marine engineers and as chief marine engineers.

Instruction for the chief engineer's examination includes Danish, English, mathematics, physics, chemistry, mechanical engineering, electro-technology, work management and drawing.

In the Danish lessons, the students are instructed in report-writing on official and technical matters for use when reporting to owners and the authorities.

Instruction in English is to enable students to read technical, maritime English and to provide the student with sufficient command of the language to be able to conduct brief conversations in English and to write intelligible English with the aid of a dictionary.

Mathematics, physics and chemistry include the laws and concepts that are a necessary preliminary to the lessons in mechanical engineering and electro-technology.

Instruction in work management is closely associated with a chief engineer's working environment, and the drawing lessons include measuring and sketching.

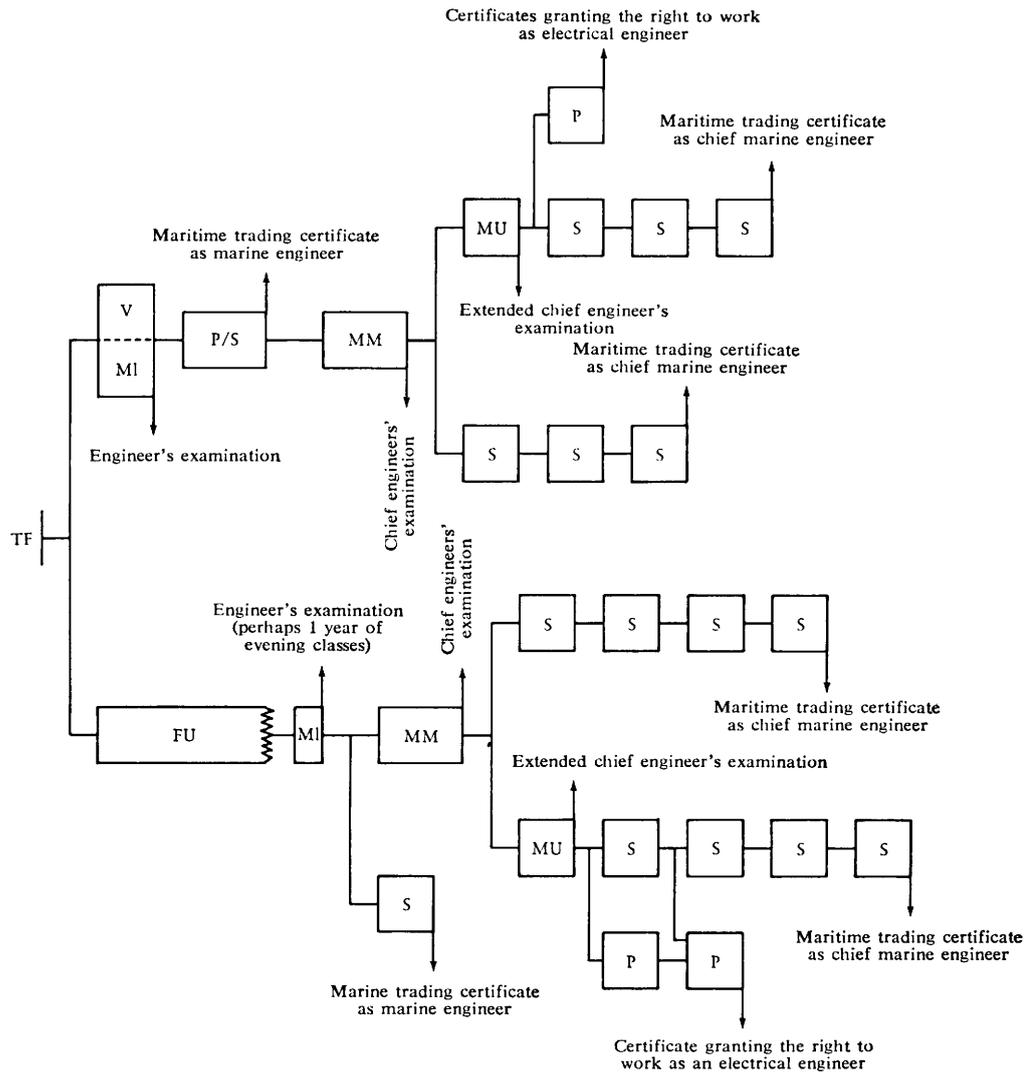
Instruction for the extended chief engineer's examination

Those wishing to study for the extended chief engineer's examination must have passed the chief engineer's examination.

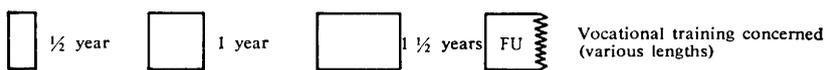
To meet the requirements of the shipping trade, power stations, industrial undertakings, commercial undertakings, etc., the objectives of the extended chief engineer's examination are as follows:

- (a) to give the students a training that can be profitably employed in those executive positions in the shipping trade where training at a level higher than the chief engineer's examination is desirable or necessary;

Training of engineers and chief engineers



Symbols:



TF Technical preparatory examination with English or equivalent or higher examination

V Workshop school

P Practical training

S Period at sea

- (b) to give students a greater knowledge of the function and operation of the mechanical installations employed, as well as knowledge of many of the installations that fall within the sphere of work of chief engineers on land;
- (c) to provide the students with an electro-technical training that safeguards the chief engineers' rights as authorized electrical engineers, including the management of high voltage power stations.

Instruction for the extended chief engineer's examination covers business economics, book-keeping, electro-technology, mechanical engineering and German.

The instruction in business economics and book-keeping covers estimating, accounts analysis and elementary book-keeping, including the keeping of cash-books and closing the year's accounts.

Instruction in electro-technology provides practical and theoretical training of such content that it qualifies the student for assignments in operation and maintenance and to supervise installation and erection work in normal high and low voltage electrical plants.

Number of students at schools for engineers and chief engineers: 1972—1 550; 1973—1 247.

Instruction in mechanical engineering includes boiler plants, steam turbines, control and automation technology.

The main purpose of the German lessons is to give practice in the reading of technical texts in journals and instruction manuals.

Electrical engineer's test of 1952

In accordance with the Minister of Public Works' Notice No 187 of 15 May 1962, the purpose of the training is to provide students with electro-technical knowledge to qualify them to act as electrical engineers in work covered by the Minister of Public Works' Law No 196 of 7 June 1958 concerning the authorization of electrical engineers etc. (Electrical Engineers' Act).

Admission to the electrical engineer's test of 1952 is conditional upon the person concerned evidencing by certificates that he has at least the following practical electro-technical training:

- (1) For electricians:
One year's experience as an electrician after passing the journeyman's test as an electrician.
- (2) For electrical mechanics:
One year's experience as an electrician after passing the journeyman's test as an electrical mechanic.
- (3) For chief engineers with the general engineer's or chief engineer's examination:
One year's experience in an undertaking in heavy current engineering.
Experience in the operation of a power plant in ships counts as experience in an undertaking in heavy current engineering.
Further, the person concerned must be able to prove that he has undergone a prescribed laboratory course.

An examination committee consisting of seven members appointed by the Minister of Public Works undertakes control of the electrical engineer's test.

The schools' curriculum for the whole training is submitted to the examination committee for approval. Instruction, which must cover at least the whole examination syllabus, must be organized with a view to completion normally in one year of day classes or three years of evening classes. Evening classes are being discontinued.

The Circular (Ref. No 2131) of 30 October 1970 introduced an experimental scheme under which day classes for the electrical engineer's test of 1952 are to cover one-and-a-half years. Students who have passed the lower secondary school examination with mathematics, the extended preparatory technical examination, the 10th form State-controlled examinations in Danish, arithmetic, mathematics and physics, or an equivalent or higher examination and students who can prove that they possess the necessary knowledge in Danish, arithmetic, mathematics and physics are, however, entitled to commence the course up to six months after it has begun.

The last year of instruction for the electrical engineer's test of 1952, which is compulsory for all who wish to enter for the examination, is employed for vocational electro-technical instruction.

After passing the test, either an examination certificate is issued entitling the student to carry out assignments covered by the Electrical Engineers' Act, or a temporary certificate is issued that does not grant such entitlement. Examination certificates are issued only when the necessary practical training period has been completed (see Sec. 11 of the Notice) and the student has passed a test in book-keeping approved by the examination committee.

The temporary certificate may be exchanged later for an examination certificate when the above conditions have been met.

The cost of the examination committee's activities are met by the Electricity Council under the Minister of Works.

Under Law No 191 of 4 June 1964 concerning the approval of commercial schools, technical schools and schools for chief engineers and engineers and subsidies, etc for these schools, the State meets in full the expenses associated with training at the electrical engineering schools.

Training of instructors and teachers

The training of teachers at technical schools was commenced before 1890, and in 1891 the State Course for Teachers in Drawing, which included teachers at elementary schools, was established. In 1916, training of teachers at the technical schools was transferred to the State Technical Teachers Course.

The State Teacher Training Scheme was established in 1969 as a State institution under the Directorate of Vocational Training Schemes, Ministry of Education. The Circular of 24 November 1970 sets out the objectives of the State Teacher Training Scheme (SEL) as follows:

- (a) to organize and provide for the training of teachers for teaching institutions under the Directorate of Vocational Training Schemes;
- (b) to hold the prescribed examinations at conclusion of the training referred to under (a);
- (c) to control vocational and instructional further training for teachers at the education institutions set out under (a);
- (d) in cooperation with the Directorate's educational sections, to control the development of new teaching aids and methods and to organize and carry out experimental activities in connexion therewith.

Teachers at educational establishments not falling under the Directorate of Vocational Training Schemes may participate in the established teaching courses in accordance with detailed directions.

SEL was established to coordinate the tasks referred to above which, as already said, had previously been controlled by various departments within the Ministry of Education. It should be noted that courses and examinations for commercial school teachers were held by the Ministry's commercial training section, and that the programmed instruction section had a special assignment in educational research and development. In this connection, the coordination referred to has resulted in the various training systems having acquired a common contact surface which should promote a useful exchange of experience.

In accordance with their nature, SEL's various tasks are divided into four sections:

The section for general educational training schemes providing for the educational part of teachers' training.

The section for vocational and vocational-educational courses which, in association with vocational consultants and other specialists, provides opportunities for further vocational training.

The section for programmed instruction, experimental education and teaching technology carrying out research and development, which is arranged, *inter alia*, by means of courses for teachers. The section also acts as a documentation centre for programmed instruction.

The administration section, which includes course administration and the examination secretariat.

SEL's courses are held in many locations throughout the country, partly as regional courses intended for participants living in the neighbourhood and partly as country-wide courses in which all participants reside at the location of the course.

To achieve close contact with the work at the schools and the training need that motivates this work, SEL has established a provincial section in many towns. The object of establishing SEL's regional sections in the provinces is to secure a better understanding of the schools' requirements and of the assistance that SEL can give, including improved opportunities for meeting some of the needs more quickly and more directly. The intention is in part to be able to provide courses adapted to local conditions and in part to assist in local educational development, for example by participating in the setting-up and running of study group activities.

The work of the regional sections is still in its early stages and is being approached in different ways, partly because of the differences in the regions' needs and resources. For example, sections in densely populated areas can offer a series of courses to meet the special regional requirements, while sections in sparsely populated areas must give more emphasis to the development work that stems from cooperation between teachers from many systems of training, including improvement of common utilization of the total resources available.

Part of SEL's country-wide activities, for example courses in general teacher training subjects such as educational theory and psychology, have been made over to the regional sections. Like most SEL courses, these are open to participants from other systems of training. It has been possible in this way to improve course-coverage throughout the country, and at the same time to make proper use of the funds allotted. In general, the sections' task is to promote cooperation between vocational teachers and teachers in other systems of training with a view to common training courses for which there would otherwise be an insufficient number of participants.

Before a teacher can be employed in the apprentice departments of technical colleges, he must have completed apprenticeship training supplemented by further vocational and theoretical training. Teachers then take basic instructional training at SEL, supplemented by short courses.

To be permanently employed as a teacher at the commercial apprenticeship schools, the teacher must have passed an examination as a teacher of vocational subjects in two of the subjects for instruction. However, it is quite normal for teachers who undertake to teach in several subjects to take the examination in several subjects, unless the teacher has further vocational training within the subject area.

Adult education

Workers and salaried employees

The Ministry of Labour is responsible for the organization of:

- (a) training for semi-skilled workers;
- (b) further education for skilled workers and salaried employees;
- (c) special retraining courses for unemployed and for persons whose employment is at risk.

These measures aim to meet the demand on the labour market and to enable individual course participants to employ their newly acquired knowledge immediately on the job, such a course requiring, however, only a brief absence from the place of work.

The training of semi-skilled workers and the further training of skilled workers has been organized within each trade as a series of short courses of such a content that a staged programme of training is provided. The training of semi-

skilled workers is in the nature of basic training with later further training and retraining. The further training of skilled workers is aimed at up-dating and developing the basic training concerned.

These courses are held at schools for semi-skilled workers, technical schools, commercial schools, institutes of technology, private undertakings, etc.

Those over the age of 18 may follow these courses if they are employed or merely seeking employment in the trade concerned.

During such courses, the participants receive financial support corresponding to their unemployment pay. If the former income is greater, this assistance may be increased to 125% of the amount paid in unemployment benefit.

It should also be noted that there are other special arrangements for those actually unemployed and for those who are approaching an unemployment situation, particularly in certain development areas in the provinces.

The persons involved are retrained and equipped to take on work in other undertakings or in spheres of work where there is a shortage of labour.

There is no separate body of law giving an actual right for employees to apply for the above courses whether or not the employer agrees. Employees must therefore agree in advance with the employer to take leave from their place of work during the course, and they cannot expect to be paid by the employer during the course.

Training schemes for semi-skilled workers: Course activities measured in number of student weeks, by trades 1970/71-1974/75

Trade	Basis 1970/71 = 100				
	70/71	71/72	72/73	73/74	74/75
Building and construction	20 936	144.2	132.9	103.5	129.1
Metals industry	17 951	128.4	134.0	133.7	168.9
Road transport	18 846	115.8	108.0	112.6	113.5
Clothing, textiles	5 081	105.1	117.4	120.8	141.6
Meat industry	3 283	135.3	125.8	104.9	146.0
Hotels and catering	2 274	130.2	130.2	141.8	126.3
Others	6 912	113.4	126.1	135.6	189.2
Total	75 283	126.4	124.9	119.5	143.3

Further education: Total of student weeks distributed between the major trades 1970/71-1974/75

Trade	70/71	71/72	72/73	73/74	74/75
Metals	9 528	4 654 (°)	13 551	9 067	14 736
Hairdressing ¹	86	1 502	439 (°)	1 321	1 439
Clerical	4 197	7 774	1 027 (°)	9 127	3 448
Commerce - retail	1 265	1 228	1 051	1 604	2 066
Building	826	1 395	1 196	1 134	909
Horticulture	994	1 169	1 143	917	248
Printing	756	677	890	1 076	924
Meat	782	1 130	546	818	677
Electrical ²	—	—	—	2 722	4 034
Others	3 026	4 299	2 640	3 682	3 936
Total	21 460	23 828	22 483	31 468	32 417

¹ The former error in the student-weeks total arising from the conversion of evening classes into course periods of 40 hours has been corrected.

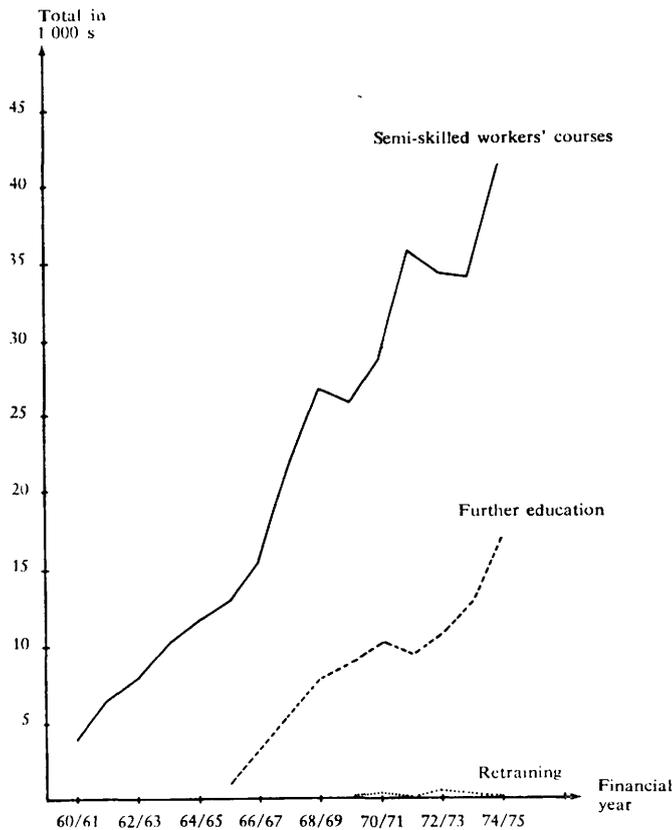
² Registrations unreliable.

³ The electrical trade was until 1973/74 included under metals.

Retraining courses: Retraining distributed by trades, measured in total of student weeks 1970/71-1974/75

Trade	70/71	71/72	72/73	73/74	74/75
Clothing industry	544	352	1 737	2 749	224
Textile industry	215	192	548	72	—
Building and construction	364	153	—	—	—
Fishing industry	—	244	—	—	—
Metals industry	1 659	769	3 090	1 551	1 537
Chemical industry	—	—	48	—	—
Meat industry	—	27	—	—	—
Plastics industry	355	1 166	1 382	160	—
Shoe industry	941	747	48	—	—
Floor covering, etc.	—	—	—	224	—
Timber industry	90	—	279	372	117
Others	—	—	420	—	75
Total	4 168	3 650	7 588	5 128	1 953

Trend in the total of those commencing courses in three labour market training schemes



Apart from these courses for adult employees, which are aimed directly at immediate employment in trade and industry and which are all targeted towards a vocational qualification, there are other adult training schemes under the Ministry of Education which, in accordance with the relevant law, are designated as spare-time adult education.

In principle, these courses provide instruction in all subjects, although the Minister may set limits on the subject area in view of the fields covered by varying legislation.

The participants are required to pay a small sum as a course fee, the courses being otherwise financed by the public, shared between the individual municipalities and the State.

Courses can be set up as day classes or as evening classes, and may be applied for by employed and non-employed, for example housewives and old-age pensioners.

There are also institutions at the country's universities referred to as the people's universities. Instruction is given in association with the universities, and the object is to spread the knowledge of scientific methods and discoveries. Here also instruction is in principle free, the participants merely paying a small sum.

It may be mentioned that, as a special measure under the law relating to spare time, special courses may be set up for handicapped people. In contrast to the other courses under this Law where the number of participants must be at least 12 for a course to be established, a special course for handicapped people must be provided if only two people apply.

Training programmes for special groups of employees

1. Unemployed

A special problem associated with the rising unemployment of recent years has been the growing difficulties experienced by the very young in finding employment as apprentices, in training positions or by direct employment in trade and industry.

To redress this problem, the State initiated in Spring 1975 a special action programme against unemployment, including special measures against unemployment among young people.

An example of this is the opportunity provided for assistance payments when participating in many courses of up to six months duration provided such courses are not a stage in long-term training nor courses providing proper qualifications.

When participating in these courses, adults receiving unemployment benefits may retain their rights to the benefit if they continue to be actually looking for work under the rules applicable to this category, for example willingness to discontinue the course if there is an offer of employment, continue to have their unemployment cards stamped, etc.

2. Migrant workers

There are at present no proper training programmes under State arrangements for migrant workers. Some years ago when the number of foreign workers was considerably higher, individual large private undertakings often had arrangements for this group of employee in the form of organized language courses and courses of a more general informative nature.

At present, the number of foreign workers is too low and their distribution over the country too great to initiate a wholly State-organized training programme.

3. Handicapped workers

Handicapped students participate to a wide extent in general elementary school education, but special consideration is given to this group in the form of special lessons to assist in the disciplines that are particularly difficult for the individual handicapped student.

As far as is possible, handicapped students keep pace with the other students throughout their schooling.

As concerns the training of handicapped people after the elementary school, the object here also is to integrate this group into normal training schemes. That is, it is not in itself an aim to provide special training systems for the handicapped; on the contrary, the aim is to include the handicapped in as broad a field of training as possible.

The Experimental Committee for the Vocational Basic Training Schemes (the new schemes to replace the apprentice training schemes) have prepared a report entitled

Proposals for the adoption of handicapped people into the vocational basic training schemes'.

The Law relating to these training schemes states that they are open to all who have completed the 9th form at the elementary school. The individual schemes within this system are to be absorbed into a larger vocational area and so organized that the student chooses progressively a training in accordance with his ability and interests. The schemes are so constructed that they can be left at a suitable stage with a certain degree of vocational ability, and so that interrupted training can be resumed later at the level reached by the student before the interruption. This modular structure also facilitates alterations in training.

The first year of this system—the basic year—does not give a vocational qualification but includes basic information on and an introduction to the vocational field, which as we have said consists of a number of training schemes.

A vocational training system constructed upon these principles makes it possible to create a system that gives handicapped people an opportunity to test their own talents, training desires and possible skills.

To ensure that the handicapped are absorbed into a main vocational area on an equal footing with other young people, and to assist in making it possible for the handicapped to leave the training scheme with a degree of qualification, it is necessary to provide certain measures of assistance.

Such assistance in the form of particularly thorough information will be essential for young handicapped people before they are accepted into the training system. For example, information must be provided on all training schemes on offer that might be relevant to the individual, not only within the training system but also outside the system.

It should be noted here that at the schools for semi-skilled workers it is possible to establish special courses for those among the handicapped, mainly the mentally handicapped, who cannot or do not wish to undergo basic vocational training. Such courses consist of a very broadly structured introductory course followed by a vocational course within the subjects already taught but specially adapted to this group of (mentally) handicapped students.

Another example of special assistance for this group before training commences is the scope for exempting them from any rules concerning the school's limits of range, so that they can be accepted at the school that in its physical and training circumstances is most suitable for the individual.

During training itself, special assistance from all pupils is of course also necessary to support the handicapped during daily lessons.

It should be noted here that it is essential for the handicapped to be continuously advised in their progressive choice of a trade (see the structuring of the system's first year) so that they can make their choices on a realistic basis.

A special problem for this group is the practical training which forms a substantial part of the education after the end of the basic year. It may be necessary to provide the practical periods at the schools or at special institutions, instead of in trade and industry.

The report emphasizes that a substantial reason for integrating the handicapped into general education is that the social development of the handicapped can be better advanced by close association with a normal vocational environment.

The greatest problem in integrating the handicapped is perhaps that no common guidelines on training methods can be drafted for this group.

A precondition for successful integration of this group is distinct and individual assistance for each student.

It is realized that there is a limit to integration of the handicapped, depending upon the degree of handicap—especially in the case of the seriously physically handicapped. This may mean that a number of specially suitable schools must be established throughout the country for some of the seriously handicapped. For these students, a special rehabilitation plan must be prepared in each individual case.

New vocational fields

1. EDP training schemes

Under the direction of the Ministry of Education, EDP training schemes are available to meet the user requirement and the need for specialists.

User training schemes are available in the form of evening classes. These are constructed upon six modules, each of 60 hours, in the following disciplines: systems description, systems analysis and systems construction. The scheme's structure makes it possible to supplement the training by modules from other vocational areas, such as accountancy, organization, financing, auditing, etc.

As intermediate training, a one-year EDP assistant's scheme has been established on a full-time basis for matriculated students, and a two year EDP assistant's scheme for students who have completed the basic year of vocational training and others of a corresponding level.

In both versions, the schemes are structured upon modules and occupy about 1 300 and about 2 600 hours respectively, divided between one-quarter on the commercial trades such as accountancy, management economics, organization and mathematics and three-quarters on computer disciplines, including two or three programming languages, operational systems, datamatics, systems planning and design.

Discussions are now in progress with a view to providing this training in the form of part-time evening classes over two or three years, depending upon the student's qualifications.

From 1 September 1976, a new and shorter EDP further training scheme will be commenced in Denmark, the 'datanom' training scheme. This course is also structured on six discipline areas: operation of EDP systems and five modules of programming.

Each module covers about 80 hours, and in principle the choice between the modules is open. The title of 'data-nom' is achieved after conclusion of six modules corresponding to six months' full-time study. Training will initially be provided at evening classes only, and the admission requirements are at the EDP assistant's level.

2. Oil-drilling technology

The preparatory course in oil-drilling technology is an example of a training programme in a new trade. The course is of seven weeks, and its purpose is to teach participants the terminology and working methods employed on an oil rig. In addition, participants will acquire knowledge of the main principles of rotation drilling, the structure and method of operation of an oil rig, work distribution and methods.

Participants will also be instructed and trained in the use of the units used in oil drilling technology, together with a brush-up in languages by the use of trade terms. Finally instruction is given in the safety regulations usually employed on an oil rig.

Instruction is provided in the form of lectures, discussions, examinations, films and slides. Training aids consists of compendiums in Danish and course booklets in English.

Apart from this course, there are a number of courses for engineer officers. These are intended for chief engineers, but are also very suitable for rig crews.

3. Tourism

In recent years, tourism training has been commenced as a subject. Training extends over 120 hours and is mainly intended for those who have been employed for any period in the tourist and travel agency trade. The courses are, in addition, intended for those in trades such as camping, hotels and, to some extent, commerce.

Training is divided between two disciplines: tourism and tourist technology, of which the former covers the theory of the trade and the latter the practice of the trade.

It is intended at a later date to arrange for these subjects to form part of the vocational basic training schemes, after conclusion of a basic year within a somewhat wider area of tourism.

Reforms

It was indicated in early sections that a new training system was initiated on an experimental basis in 1972: the vocational basic training schemes (efg). The experimental law is to be revised in the present session of the Danish

Parliament under one of its provisions—i.e. it is to be decided whether these training schemes are to continue as permanent training schemes.

A report on this has just been submitted on the basis of experience to date within the vocational areas in which the experiments have taken place. The report proposes that the experimental status should be abolished, so giving the training schemes the status of permanent schemes.

As we have said, the experiment has been based mainly upon the traditional apprenticeship areas, but a few subjects outside the apprenticeship areas and a few completely new subjects have been included in the experiment. The report proposes that the apprentice training schemes should be completely wound up, and that training in this field should be carried out entirely under the efg schemes. It is also proposed that other training schemes should be brought within the efg Act, i.e. that all such training schemes should be so structured that the first year (basic year) consists of orientation and vocational guidance as an introduction to the main area concerned.

The subsequent years of training (two to three) will then concentrate on the trade chosen. It is also intended that common subjects of a general nature should be included in all training schemes, such as social studies, foreign languages, mathematics, etc.

Among such training schemes of previously widely differing content and duration the following may be referred to as examples: training for technicians, training within the kitchen and canteen field, sociology, training for male nurses, training for tourism, training for riding instructors, etc.

The purpose of a training system structured in this manner is to provide students with genuinely improved opportunities for choosing a trade, to facilitate changes in training and finally to give greater flexibility if it is decided later to change the choice of trade, which is now often necessary in the modern, rapidly changing, dynamic society.

It should be noted in this connection that it is hoped that the proposed very broad training system will be attractive to the group of young people that does not pursue education after completing compulsory schooling. This group—referred to as the remainder group—has proved to be fairly constant in size over the last 25 years in spite of a tremendous increase in the intake to the higher secondary schools and further higher education. This means that the present system has not been able to attract this group, but has merely diverted into the various training schemes those young people who would in any case have received training of one kind or another.

However, the preparatory work on the report has had the result that, because of the late submission of the report, it has not been possible to debate it during this session of the Danish Parliament. Consequently, the efg training schemes will presumably continue as experimental schemes for another year.

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