

At the threshold of the 21<sup>st</sup> Century, vocational education and training is confronted with new challenges. Reforms of post-16 years old education are underway in most European countries to meet new challenges and come up with new answers to a society in transition.

A reform of the Danish vocational education and training system will come into force on 1<sup>st</sup>. January 2001. Already now, however, many development projects have been initiated to test and assess most of the new elements at vocational colleges and labour market training centres.

This publication provides an overview of the principles, contents, options and structure in the new VET programmes after the reform. Key words in the reform are transparency, flexibility and social inclusion.

In an international world, it is only natural that the VET Reform 2000 has been very much inspired by innovations from abroad. Inspiration and new ideas have to be sought beyond the confines of individual countries.

The target group for this publication is an international audience who wants to know more about the Danish VET reform: policy makers, civil servants, educational planners and practitioners, researchers, training experts, social partners and companies involved in transnational placements.

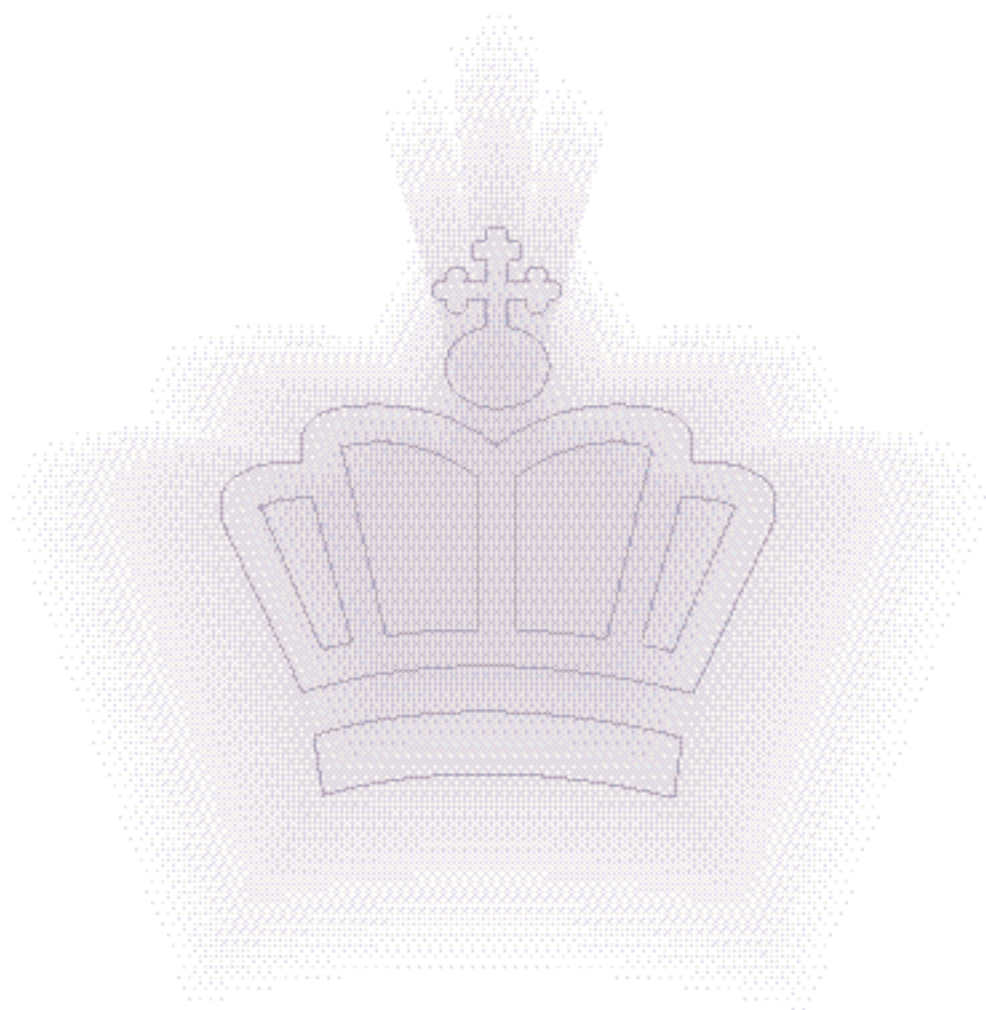


# New Structures in the Danish Vocational Education and Training

National Education Authority



New Structure  
of the Danish  
Vocational  
Education and  
Training System



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National Education Authority  
Danish Ministry of Education  
November 1999

New Structure of the Danish Vocational Education and  
Training System

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## Preface

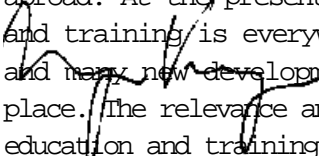
On April 21 1999 the Danish Parliament passed the new Vocational Education Training Act (No. 234) which will come into force on January 1 2001. The new law is an important policy instrument for achieving innovation. Other important aims of the new law are to enhance the quality of vocational education, to cultivate talent and to encourage companies and colleges to organise interactive learning activities.


The reform marks an innovation of the technical VET courses, in particular, but also implies considerable changes in the commercial VET programmes which were reformed in 1996.

Many development projects have already been initiated during the summer of 1999 to support the implementation of the new reform. Thus, what is described here is a reform under continuous development. But, however, the outlines of the reform are now quite clear.

I am absolutely convinced that this reform will improve the transparency and at the same time enhance the flexibility and consequently the breadth and elasticity of the Danish vocational education and training system. Social inclusion is an important value behind this reform.

The aim of publishing this brochure is to provide general information to interested parties from abroad. At the present time vocational education and training is everywhere undergoing changes and many new developments are currently taking place. The relevance and quality of vocational education and training will undoubtedly be





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enhanced by learning from each other across national borders.

Minister of Education  
November 1999

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## The Danish system of vocational education and training

Denmark is a small country with a surface area of 43,000 square kilometres (excluding Greenland and the Faroe Islands). With a total population of 5.2 million inhabitants, the country is densely populated. The major part of the population lives in towns or cities, only 15 % live in rural areas. In contrast to many other countries, Denmark's population is homogeneous; only 4.5 % of the population has a foreign background, many of them come from one of the other Nordic countries.

The Danish system of vocational education and training (VET) is a centralised system. All standards are laid down by the Ministry of Education in the form of regulations. These regulations are prepared by the social partners, then approved by the Ministry of Education. There is no regional level within the VET system, only the national and local level.

There are 115 vocational colleges (technical and commercial) in the Danish VET system for which the Ministry of Education is responsible.

The Danish vocational education and training system is more than 450 years old and can be described as a cultural bridgehead between the European (German) dual apprenticeship systems and the school-based models of the Nordic countries. The system is a further development of the apprenticeship principle, and there is more theo-



retical teaching (more time spent in school) in the Danish VET system than in German VET programmes, and conversely far more practical in-company training than in the Swedish system, for example, where this makes up 15% of the training period, compared with 60-75% in Denmark.

The VET system features three main characteristics:

- Σ It is based on alternating periods of school education and practical training in a company. In general, vocational training does not take any longer than four years. Students normally attend vocational college for a maximum of 80 weeks. A young person spends two thirds of his/her training period in one or more company/ies which have been approved by the Trade Committee responsible as training companies (appr. 20% of all companies are approved as training enterprises). Before the practical training starts, the student has to sign an apprenticeship contract with the respective company.
- Σ The training does not only convey vocational and technical skills within a strictly professional context, but also inter-professional and general knowledge. General education accounts for appr. 33% of the training period while a number of optional disciplines make up about one sixth. Moreover, the system is sufficiently flexible to provide various access opportunities and allows for changing from one level of education to another.
- Σ The social partners are able to influence the system to a large extent as they are represented at the national and individual college level.

This extended role is rather unique in a pan-European context. The Danish model features elements of cooperation which could also be interesting for other countries. Many protagonists are involved in the VET system – companies, the social partners, the government, colleges and teachers – and share a joint responsibility and cooperate in order to ensure continuous innovation of the system. The national and local procedures ensure consensus-building among the protagonists. At the same time, the structure is extremely dynamic as many reforms over the past 20 years have demonstrated.

## Also a broad youth education – developing the learner's personality

The Danish VET system provides a broad-based education, not only covering vocational skills and knowledge, but also offering good opportunities for personal development of the students. This becomes evident from the objectives laid down in the Act on Vocational Education and Training:

- Σ to motivate young people to learn and to ensure that all young persons who would like to undergo vocational training get a chance to do so and that they also have the opportunity of selecting a suitable option from a wide range of training schemes;
- Σ to provide young people with education and training opportunities which form the basis for their future professional career and contribute to their personal

development and to their understanding of society and its development;

Σ to satisfy the needs of the labour market for vocational and general skills and the competence necessary to contribute to the development of trade and industry including commercial and economic structures, labour market conditions, workplace organisation and technology;

Σ to provide young people seeking further education and training with a basis to do so.

Central regulation is confined to objectives and other content-driven framework conditions in important general areas. This provides maximum freedom to innovate, and dynamism at the local level. It allows for rapid innovations to be made in training courses, a more effective adaptation to the needs of the students and is generally resulting in more efficiency. Renewal and educational innovation therefore represent the cornerstones of the educational system. By decentralising a substantial part of the curricular development, local educational development work becomes a responsibility of the college - the colleges are encouraged to take on responsibility of educational innovations.

The underlying educational approach is shifting towards new types of education and training. It is aimed at problem-solving techniques, modern work organisation, self-assessment of students' work etc. General skills, group work and autonomous work for which the student is responsible are provided by "open learning centres" and are designed to prepare young people for individual requirements of further training.

Students and adolescents participating in vocational education and training are assessed on the basis of their qualifications and individual skills obtained. Given the appropriate qualifications, they may skip education and training modules so that students with comparable educational levels can join the same class.

## VET Reform 2000 – Why a new structure?

The Danish VET system is permanently undergoing changes. The new reform aims at achieving a number of central objectives. Since 1993 it has been the primary objective of Danish educational policy to give all young people a broad-based youth education after compulsory schooling. The reform seeks to support this objective by creating dynamic and attractive education programmes which are more transparent, flexible and open to the students' backgrounds and wishes.

A challenge for the education system has been the high dropout rates. This challenge has to a great extent been met: the dropout rate has been reduced by 50% in the 1990s. However, a certain price has had to be paid for such a positive result: young people clearly spend too much time in the youth education system due to many changes of mind and double education tendencies.

Another priority is to improve the responsiveness of the system to the new qualification needs of the labour market. The labour market requires skilled workers at the right level of competence and with the right sort of training. The focus of the late 1990s is to grant more freedom to the individual learner. The VET reform provides for a system that offers students of all different types specific, individualised training. Thus, the main objective of the reform is to strike a new balance between the two aspects: employability by provi-

ding higher general personal and vocational skills required by the business community and by establishing more flexible pathways to learning for the individual student.

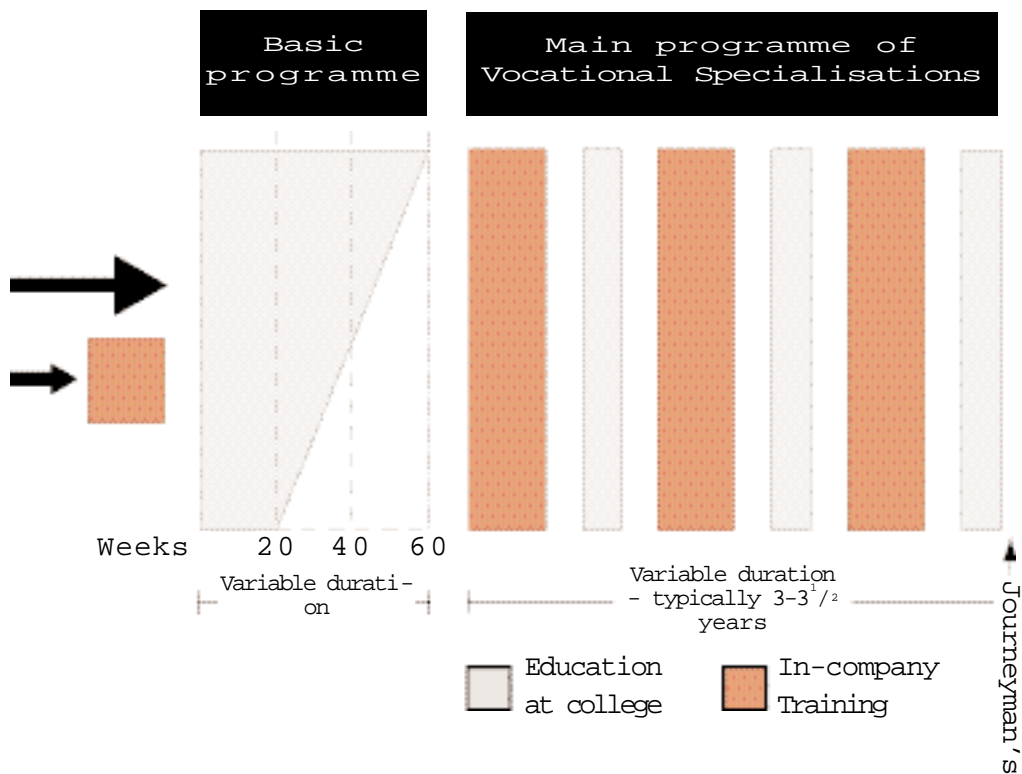
Moreover, despite efforts undertaken by the Danish government, vocational education and training does not enjoy the same level of esteem as other systems of higher secondary education. Many pupils, and their parents in particular, still regard the general upper secondary education as a tried, tested and attractive educational option which they prefer once compulsory education has been completed at the age of 16. A specific focus in the reform is thus to combine the easy transition from education to work with the option to qualify for admission to higher education thus making the VET choice more attractive.

Today many young people have a critical attitude to school and education. They are more individualistic and are used to making rapid shifts and to having easy access to many sources of information. The ambition of the reform is to meet these requirements. To open up wider possibilities for the individual to compose his own education, the curriculum will have a modular structure in order to allow the student to plan his or her personal study routes through the programme. So the new VET reform is also a major step towards a pedagogical innovation with a view to changing the education system to support lifelong learning.

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## The new principles behind the “VET Reform 2000”

The reform changes the structure, contents and learning environment in vocational education and training. Keywords are transparency, flexibility,



widening and broadening and social inclusion. The two main principles are a simpler structure and greater flexibility within the programmes.

The reform launches the following new elements:

Σ Fewer and broader admission channels into VET



courses

- Σ Modular curriculum
- Σ Optional "double qualification" as well as "partial qualification" in the structure
- Σ Interdisciplinary learning
- Σ Tutor support to students offered individual pathways to learning
- Σ Personal education plan for students
- Σ Students have "log-books" and individual study portfolios
- Σ Teacher team organisation in schools
- Σ Development and innovation of school learning environments
- Σ Work-based learning

A paradigmatic shift is currently taking place in the Danish VET system: from qualifications to competences and from teaching to learning. The Danish VET system is qualification (curriculum)-based but the development of personal competences as a pedagogically innovative challenge within the structure is a high priority. Learners increasingly take responsibility for their own learning and with the "VET Refom 2000" initiative, individuality and flexibility will be enhanced. A changed balance between the system and the individual will hereby be created.



## Access to and structure of VET programmes

In Denmark education is compulsory for children between the ages of 7 and 16. Tenth grade is optional; approximately 60 per cent of a youth cohort avail themselves of this opportunity. 99 per cent of a cohort completes compulsory education after 9 or 10 years. Currently, 95 per cent make use of the wide range of offers within the post-16 years old system.

The Danish post-16 year old education system is based on three traditions which can still be recognised: the Latin school from which the different forms of the Gymnasium were derived, the old principles of master-apprentice training on which the dual system is based, and a large number of so-called free schools which also provide a practically oriented training.

Access to VET courses is open to all those who have completed compulsory education.

After the reform the VET courses will consist of two parts - initial basic programme and the main programme of vocational specialisations. (see diagram 1 below)

The initial basic programme is college-based and is completed with the issuing of a certificate documenting the subjects and levels which the student has achieved; this certificate forms the

basis for entering the main programme.

The main programme of vocational specialisations (85 programmes), which starts with an on-the-job training placement, is alternance-based and comprises education and training in colleges and companies. It is required that the student has signed an apprenticeship contract with a company (or with the college) before starting on the main programme. After signing the training contract the employer pays wages to the apprentice, also during the periods at college. The wages a company pays during attendance at college are reimbursed from the Employers' Reimbursement Fund (AER) for apprentices' wages. Most students choose to start their education in college before concluding an apprenticeship contract. These students may obtain support through the Danish State Education Grant Scheme during the basic programme phase.

Diagram 1: The structure of VET programmes after the reform

**Admission channels into the system**  
There will be fewer, yet wider access channels into the vocational education system. The new structure offers only 7 access routes (compared with 90 access routes before) to the VET courses - 6 into the technical vocational courses and 1 into the commercial vocational courses. Each of the access channels paves the way to a foundation course covering interrelated vocational programmes. The following access channels have been created:

- Σ Technology and communication
- Σ Building and construction
- Σ Crafts and engineering trades
- Σ Food production and catering
- Σ Mechanical engineering, transport and logistics
- Σ Service industries
- Σ The commercial field - trade, office and finance.

Each access channel opens up to a number of main specialisation programmes which correspond to the 85 VET courses offered in the existing VET system. A completed basic programme gives access to one or more VET programmes.

#### The basic training phase

The system gives the student a high level of flexibility and variation of duration. Those who have made a clear choice can progress directly and swiftly through the initial basic phase. Students who have not made up their minds are given time and challenges to support their selection of programme, to develop themselves as individuals and to expand their competencies. Thus, the flexible basic programme may vary from 10 to 60 weeks. All students must be offered the opportunity to be able to select supplementary vocational or further study oriented competence elements. VET colleges are required to cooperate to ensure the students access to all basic programmes in all parts of the country.

The obligatory part of the basic programme con-

sists of basic subjects and area subjects supplemented by educational and occupational guidance and counselling. In addition to this, optional subjects and introductory and guidance teaching are also offered. The composition of the final programme depends on the student's own choice and the requirements set to be able to start a given specialisation programme. The contents of the individual student's actual study programme has to be formulated in the student's personal education plan.

A student, who has completed a full basic programme to prepare for a specific VET main programme and who wants to achieve the right to start on another programme within the same group of interrelated programmes, has an assured right to take only the relevant area subjects lasting 5 weeks in a concentrated sequence so that the loss of time is minimised.

The transition from basic programme to the main VET programme  
The basic programme is completed with the issuing of a certificate which specifies the subjects studied and educational levels attained as well as a list of the main programmes the student is qualified for. The particular requirements needed to start on a main programme is defined in the regulations of each individual VET specialisation programme. In some programmes specific demands are set concerning the examination results and the levels to be achieved.

Restricted admission to some programmes may be established in accordance with employment prospects in the sector.

During the basic programme the student continuously receives guidance and counselling i.a. on the final choice of education. Special emphasis will be put on the student's interests, capacities and motivation in relation to the demands of given occupations. This is expected to lead to more realistic educational choices.

#### The main VET specialisation programmes

The students will be trained to achieve at least the same levels of competence required by the labour market as already covered by the existing VET system. Consequently, the main programmes will follow the established principles, although with a more flexible approach in the field of specialisation.

The Danish VET system is organised as a dual system. Through the dual system, students are always in touch and familiar with typical changes of technology, machines, material, workplace organisation and job functions that occur in the labour market. Training and career paths are therefore matched in an optimum way. A documentation of qualifications and skills in the form of diploma/apprenticeship certificates is important on the Danish labour market. Companies within a certain industry need such documentation when making decisions on new recruitments as it would be very time-consuming and labour-intensive to assess the vocational qualifications and skills beforehand.

The obligatory college part of the alternance-based programmes has a maximum duration of 60

weeks (1½/years). The VET college curriculum is structured around basic subjects, area subjects, special subjects and optional subjects. The overall balance between these subject categories has not been changed.

A complete main specialisation programme normally has a duration of not more than 3½/years. The main VET programme starts with a practical training period in a company followed by periods at college and in the company. The students themselves have the responsibility of finding a company and concluding an apprenticeship contract, however with support and guidance from the college.

An innovation is the provision of special subjects which will now be offered in a more flexible way. The student and the training company may choose courses/modules from a joint catalogue designed by the vocational education and training system and the adult labour market training system. This is an important innovation to the training provision structure in Denmark. Normally new qualification needs are first tackled in the continuing training system; however, today's students and apprentices will now be introduced to this system as part of their ordinary VET programme. In the perspective of the need for lifelong learning this may be one of the most valuable elements of the reform.

The main programme is finalised by a "journeyman's test" or a similar examination testing the vocational skills, knowledge and attitudes and is - as in the existing system - monitored by the social partners. The qualifications obtained from vo-



cational education and training are recognised nationally and recognised by enterprises and employees alike, as their own representatives participate in the development and implementation of the curricula, and monitor the examination results. This interaction between government authorities and social partners creates a very effective infrastructure which ensures transparency and comparability.

## The curriculum

### Actors in the field

In Denmark there is a systematic cooperation between local businesses, education institutions, associations, local authorities and state supervisory bodies. The outstanding features of Danish vocational education include the state's unobtrusive control function, cooperation between employers and employees and the extensive autonomy of the individual vocational colleges with regard to syllabus and budget administration. The Danish Ministry of Education has a restricted role which consists of controlling by means of objectives and framework governance. The cooperation between employers and employees in bodies where they are equally represented at all levels is exemplary.

Sectoral Trade Committees, where both parties are equally represented, decide on vocational training qualifications and stipulate the training conditions. A college board of governors comprising representatives from the social partners and local authorities appoints the head of the vocational school, monitors his/her work and approves the budget. This leads to an ongoing adaptation to the current requirements of companies. Local vocational training committees advise the vocational college and establish links with the regional job market. Competition in terms of the quality of supply is thus stimulated through budgeting and educational planning autonomy in vocational col-

leges, and as a result vocational colleges in Denmark have developed into technical and skill-acquiring centres which can offer services to the regional industry.

#### Curriculum design principles

The structure of the Danish system of vocational education and training with its two levels is rather simple. Educational policy objectives and frameworks are formulated at central level, while the decentralised level plans the content and types of education with a high degree of freedom with regard to teaching methods.

The social partners are responsible for innovation in respect of VET main specialisation courses (and further training). They have the leading responsibility for all issues of vocational education and training. Continuing vocational training is the area where new training needs are normally identified first and it serves as a catalyst for the formulation of new VET training courses.

The need for new or modified training programmes is identified by the Trade Committees. If they conclude that there is a need for change, they have to underpin recommendations with qualitative and quantitative data, e.g. on employment opportunities and availability of practical training placements in companies. If the Committee finds that changes are needed, a group (technical/professional) is established which has the task of formulating the job profile the training course is aimed at. Normally, representatives of leading enterprises and vocational teachers are involved in projects of this type. Often, external experts are consulted. The second step is the

formulation of educational requirements.

The decision-making process can be described as follows: An executive order (a ministerial regulation) must be issued for every training course which lays down provisions on purpose, structure, aims of the course's content in relation to the classroom and practical on-the-job training etc. These orders contain all specific provisions relating to the individual course. They form a basis for the college planning and organisation of teaching and allow the individual college considerable freedom. Once the VET Council (EUR) has commented on the proposal for a new training order, it is submitted to the Minister of Education for consideration.

When the executive order has been approved by the Ministry of Education, it is submitted to the vocational colleges. On a local level, the colleges decide to what extent the particular course will actually be offered by the individual school.

#### Curriculum delivery

The VET reform is very much a pedagogical reform. Many recent development projects have documented the importance of finding new ways to organise learning environments in vocational colleges. The students must be more active in their own learning processes. This implies radical changes also for traditional teaching and the role of the VET teachers.

Vocational education and training is a complex sector. As a simple example we can take the organising principles of the curriculum. It is possible to have a course based, subject based or modular approach to the organisation of the curriculum. The "VET Reform 2000" has the ambi-

on to enhance individual learning pathways, flexibility and, possibly, the links between initial and continuing training. The use of modular approaches are especially supportive to this. Modularised structures will be created which may combine the effort to individualisation with systemic coherence. Modularisation allows for the accreditation of smaller, well-defined sequences of a programme, thus enabling students to change track. The VET colleges will offer modules in a catalogue or a matrix so that students have the option, in principle, to compose their study menu as they see fit during their foundation programme.

The reform supports the aim of creating new pedagogical environments which promote self-directed learning based on the needs, capacities and goals of the individual learner. Open pathways to learning in vocational education and training must be enhanced in the coming years. Two new essential instruments will be implemented to support this pedagogic effort to focus on the student's learning at college and in the company: the introduction of the student's personal education plan and the student's portfolio (or "log-book").

#### The personal education plan

Students who want to follow a VET programme must follow a track or path which, in principle, is individual and therefore has to be planned, argued and agreed upon, and so has to be written down in a personal education plan. The path starts with a foundation course and is followed by a main (principal) course of vocational specialisation.

Under the new reform all VET students will have their own education plan, the aim of which is to balance the wishes, interests and talents of students with the actual learning sequences all through the education, including the practical training periods. The individual education plan is a tool for the student to make rational use of the flexible provision structure in VET programmes, as well as to formulate and to keep the attention of the student on his or her vocational and personal qualifications and goals. The drafting of the personal education plan is carried out between the individual student and the college - underlining the fact that the student is responsible for composing his own education plan within the overall requirements fixed in the regulation of the specific course. The formulation of the personal education plan offers a new learning experience which, on the one hand, contributes to meet the individual learning needs of the student and, on the other hand, to develop the personal competencies of students.

The personal education plan shall contain information on the student's choice of supplementary teaching during the whole education. For students without an apprenticeship contract, initiatives to be undertaken to get a training contract with a company must also be drafted in advance. The education plan should not contain pieces of information of a personal nature.

The initiative to formulate (and to keep updated) the personal education plans is taken by the college, typically by the so-called contact teacher. At the start of a programme all learning sequences are stipulated but may of course be revised and supplemented during the course.

For students having signed a training contract

the training company is required to take part in the formulation/revision of the education plan with a view to ensuring that the alternating learning in college and in company forms a continuum which upgrades the learning perspectives.

The personal education plan shall be accessible and open to the school and to the company, which has signed an apprenticeship contract with the student.

The educational portfolio (or "log-book")

The modernised Danish version of the old apprenticeship system implies that the apprentices in all programmes are alternating between periods in a company and periods at college. The effects and results of an alternating programme are very much dependent not only on the quality of the different parts but also on how these parts interact. It must be an important and integral part of the curriculum that the student learns how to handle the situation and is empowered to learn how to be his own learning agent. The introduction of the personal log-book is here a new pedagogical tool which may contribute to improve the positive "resonance" in the alternating course plan.

While the personal education plan contains intended learning pathways, the educational portfolio binds together and documents the actual study sequences and learning outcomes. The portfolio must contain the personal education plan, VET college recommendations and VET college examination documents as well as a description of the qualifications and competencies achieved by the