



Detailed Thematic Analysis: Skills and competences development and innovative pedagogy

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Skills and competences development and innovative pedagogy

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0701 ANTICIPATION OF SKILL NEEDS: GENERAL BACKGROUND

Skills and competences are usually defined as professional skills, knowledge and attitudes acquired through formal education and in-service training which are necessary for the successful career, professional development and personal growth.

The anticipation of skills and human resources needed on the labour market has been organised by the state only in the last 4 to 5 years. The first official long-term employment forecast was prepared in 2003 when the Ministry of Economic Affairs and Communications started preparing annual forecasts. During the last two years the reports have also included the anticipation of skill needs. Each report forecasts the period of 6-7 years and every year the forecast period is extended by one year.

While there is no systematic tradition of forecasting until recently, several studies have been prepared since 1995 which have included analysis on the demand for labour force from the perspective of skill needs (the latest forecast being conducted for timber industry in 2005). See 070103 for detailed information on sectoral research.

070101 Policy development on the anticipation of skill needs

Forecasting labour market demands and anticipating skills needs have been systematically prepared by the state since 2003. The Ministry of Economic Affairs and Communications and its partners prepare the national forecasts on the basis of branches of industry and occupations by aggregated groups (ISCO 88 – International Standard Classification of Occupations). The Ministry of Education and Research takes this document as a basis for creating forecasts of training need in vocational and higher education. In turn these forecasts constitute a basis for determining the national training need by study fields and levels (ISCED 97 – International Standard Classification of Education).

Due to labour market and ministerial pressure, anticipating skill needs has become an essential part in the planning of education, especially taking into account the future needs of the labour market. The Development Plan for Estonian Vocational Education and Training System 2005-2008 (*Eesti kutseharidussüsteemi arengukava 2005-2008*) states that the adequate long-term forecasts of labour market demand as well as strategic research form a basis for determining state-funded student places in formal education.

The strengths of the current system are the use of a common and agreed methodology for anticipation and the emphasis on cooperation between the relevant parties. The Ministry of Economic Affairs and Communications improves their forecasting methods each year and adds new supplementary components to their technique. Additional research studies have contributed to knowledge of future labour market skill needs.

Weaknesses include the lack of a regional and local dimension in forecasts, not taking into account the potential influence of migration and the unsystematic nature of sectoral studies.

The official forecast of labour force demand is prepared as one single package for determining the state-funded student places in the entire national formal education (both vocational and higher) and no particular target groups are specified. On the other hand, the Estonian Labour Market Board prepares its own forecasts by sector and region to define the need for employment training.

070102 Legal, administrative and institutional framework

The legal regulations for labour force forecasts include the Vocational Educational Institutions Act (*Kutseõppeasutuse seadus*) (§ 33¹) and the regulation of the Minister of Education and Research The procedure for determining state-commissioned education provision in the governing area of the Ministry of Education and Research (*Kutseõppe riikliku koolitustellimuse koostamise kord Haridus- ja Teadusministeeriumi valitsemisalas*) (approved on January 3, 2007) which regulates the planning and creation of state-commissioned education provision in vocational education and the respective principles. The new regulation improves the procedure for determining state-commissioned education provision.

The regulation stipulates the competences and activities of different parties for determining the national training needs and also the rules of procedure, the need for specific data (for example the medium-term forecast prepared by the Ministry of Economic Affairs and Communications, information on unemployment and employment, other forecasts and research prepared on the anticipation of skill needs by other research institutions) and the phases for preparing the calculation of state-funded student places.

Institution/organisation	Role/sphere of responsibility
Ministry of Economic Affairs and Communications	Annual forecast of labour force demand by branches of industry and occupations by aggregated groups. Orders additional (sectoral) research on labour force demand.
The Ministry of Education and Research	Collects labour force demand information from all parties and uses it to define state-funded student places
	Participates in ordering research in co-operation with the Ministry of Economic Affairs and Communications

The central organisations of employers (Estonian Chamber of Commerce and Industry, Estonian Employers' Confederation)	Collect information from partner organisations and professional associations on labour market demand (those professions and areas of specialisation most in demand). Participates in determining and approving state-funded student places
Professional associations and professional councils	Provide expert information on the anticipation of skill needs in specific sectors, participate in determining and approving state-funded student places
Central Federation of Trade Unions	Participates in determining and approving state-funded student places
Research institutions, universities	Conduct research on the labour market and labour force demand
The Estonian Labour Market Board	Provide information on people registered as unemployed by education level and area of specialisation

070103 Methods, approaches, practices and tools used

The main method for forecasting labour force demand is the medium-term macroeconomic forecasting (see the last forecast document prepared by the Ministry of Economic Affairs and Communications "Forecast of the Demand for Labour force up to 2012", the methods are described in detail in Annex 5, p. 58).

Forecasts are based on the Estonian Labour Survey (ELS) conducted by Statistics Estonia (*Eesti Statistikaamet*) since 1997 and information gathered by the Estonian Tax and Customs Board (*Maksu-ja Tolliamet*) on the basis of income or social tax declared by employees. Other sources like business statistics and expert opinion of professional associations are taken into account when preparing sectoral forecasts.

Employment forecasts are based on sectoral analyses. These are based on the vision of the confederation of enterprises and the largest companies representing the particular sector. Such analysis enables the presentation of sectoral forecasts for occupation.

Essentially, the forecasting consists of two stages: the forecasting of the creation of new positions; and the forecasts of labour force mobility (in terms of careers and sectors). The forecasting model tries to take as many different labour market factors which affect demand into account.

In addition to macro-level forecasts prepared by the Ministry of Economic Affairs and Communications, there have also been attempts in 2002 and 2003 to apply the Delphi method for defining the priority fields of study and thereby

the student places which should be financed in higher education. The Centre for Policy Studies PRAXIS conducted the survey Planning of state-commissioned training for specialists with vocational education, applied higher education and academic higher education by applying the European Union Structural Funds (see <http://www.hm.ee/index.php?popup=download&id=3950>) in 2004 to help the Ministry of Education and Research determine which student places should be state-funded. The survey was aimed at creating a forecast model for anticipation of skills needs and to determine the training need in four specific fields of study.

Similar methodology has been applied for specific sectoral studies, for example in the: timber and furniture industry (1999); metal, engineering and appliance industry (2001); information technology and telecommunications (2002); food industry (2003); and, timber sector 2005-2015 (2005). The weaknesses of sectoral studies are mainly related to rapid ageing of the data and lack of clearly defined priorities for choosing the sectors to study.

070104 Building partnerships and raising awareness

State-commissioned education provision is mainly based on labour force forecasts prepared by the Ministry of Economic Affairs and Communications, and in co-operation with social partners such as professional associations, professional councils, central organisations of employers and employees (Estonian Chamber of Commerce and Industry, Estonian Employers' Confederation, Central Federation of Trade Unions, etc.). The preliminary plan is sent for comments and amendments to all social partners mentioned above who send their opinions to the Ministry of Education and Research. The latter adjusts the preliminary plan if needed.

The final agreed plan for state-commissioned education provision by schools and by fields of training (based on ISCED) are sent to the partners again for verification and harmonisation before the Minister approves it. Only after receiving the consent of the different partners is the final state-commissioned education provision approved by the Minister of Education and Research.

The forecasts also serve as instruments for regulating labour-market policy and are useful for career counsellors and teachers who can use them to guide students towards areas of specialisation most in demand on the labour market.

070105 Financing the anticipation of skill needs (incl. statistics)

Forecasts of labour force demand are not generally financed by projects or the private sector as they are part of the annual tasks of the The Ministry of Economic Affairs and Communications. On the other hand, some sectoral studies have been supported by other ministries such as Social Affairs and, Education and Research, e.g., the timber industry survey was commissioned by the Ministry of Education and Research. Other sectoral studies are financed by industry bodies, e.g., the survey on the food industry was commissioned by the Association of Estonian Food Industry. But the main

studies for labour force forecasting and the anticipation of national training needs are commissioned and funded by the state.

It is not possible to identify how much these studies cost.

0702 DEVELOPING QUALIFICATIONS

Qualifications are separated into academic and professional according to a legal regulation from 1998. The Ministry of Education and Research coordinates the preparation and accreditation of both types of qualifications through its agencies: the State Examination and Qualification Centre (Riiklik Eksami-ja Kvalifikatsioonikeskus – REKK) which implements national education policy including the development of curricula for VET institutions; and the Estonian Qualification Authority (Kutsekvalifikatsiooni Sihtasutus) which is responsible for the development and recognition of professional qualifications.

Professional qualifications follow a 5-level structure as follows:

- 1: trainee has acquired professional skills and knowledge mostly through VET. They may need some supervision in the course of the work but are responsible for performing their tasks;
- 2: level 1 plus some proficiency and experience. They can work independently and are responsible for performing their work tasks;
- 3: level 2 plus the ability to communicate their skills and knowledge, organise the allocation of resources as well as the work of other employees;
- 4: level 3 plus the ability to analyse and make decisions;
- 5: level 4 plus richer problems solving skills, the application of scientific theories and definitions, analysis, systematisation, further development and teaching of knowledge obtained; and they have obtained wide professional knowledge and skills.

The graduating certificates of VET institutions attest that a student has successfully passed a formal study programme of the Estonian formal education system (ISCED levels). The student receives a certificate.

The Estonian Qualification Authority: prepares; supplements; and amends professional standards and establishes the basis for their evaluation. It also prepares the methodology for developing and implementing the competence-based qualification system including the assessment process. Bodies responsible for development and recognition of professional qualifications are professional councils. A professional council is a social partnership body for employees, employers and professional associations of a certain field of activity as well as the representatives of the state. The aim of professional councils is to implement and develop the professional qualification system, including the preparation of professional standards according to the demand in the labour market. The professional council is also responsible for approving professional standards and other requirements in certain professions and submitting these regulations to the state register of

professions. The professional council also issues activity licences for the bodies awarding professional qualifications and monitors their activity.

Generally the preparation, amendment, changing and declaration of invalidity of a professional standard is initiated by the professional council of a certain field of activity on the basis of a written proposal. The proposal for preparing a professional standard can also be initiated by all enterprises, institutions, organisations and individuals. The maximum period of validity for a professional standard is 4 years.

Professional standards are used as a basis for preparing the curricula of vocational educational institutions as prescribed in the Vocational Educational Institutions Act (*Kutseõppeasutuse seadus*). A vocational school curriculum is the source document for studies related to the corresponding vocations, professions and occupations, setting out the list of subjects together with the volume and general outline of the subjects, the possibilities of and conditions for choosing subjects, and the requirements for the commencement of studies and graduation from the vocational school including the requirements for the preparation of final papers. A vocational school prepares a curriculum for every vocation, profession and occupation that can be acquired at the school. There are more than 150 school curricula registered at the moment.

The main task of the State Examination and Qualification Centre is to implement national education and language policy, including the preparation and development of national curricula for vocational education i.e. development of qualifications.

National VET curricula are being prepared for 35 occupations/professions by the State Examination and Qualification Centre with the cooperation of social partners. All will be completed by the end of 2008.

Studies are finished on completion of a full study programme, including taking the final examination of state vocational education. It is also possible to finish studies by taking the professional examination organised by the Estonian Qualification Authority. The professional examination is voluntary. The Development Plan for Estonian Vocational Education 2005-2008 includes an objective to merge 80% of final school examinations with professionally accredited examinations by 2008.

070201 Policy development on developing qualifications

The qualification system has been radically transformed as part of VET reform since the mid-1990s through the separation of educational system and evaluation of professional competence with the establishment of a 5-level competence-based national framework.

Remarkable amendments are foreseen to be conducted in the Professions Act and its adjacent legislation by the end of 2007. The amendments are a result of analyses conducted on the development of professional standards and the planning of further developments. Estonia considers adopting a 8-level lifelong learning NQF. The legal basis for the education and training

system is currently under review and each sector is considered separately in the course of the thorough amendment process. The intention is to create a new qualification system that would eventually cover a wide range of lifelong learning.

It is part of the development plan of the Ministry of Education and Research (*Tark ja tegus rahvas 2007-2010*). The principles underpinning changes to the qualification structure are:

- to improve the link between labour force needs and education and training provision by introducing work-based training in curricula;
- to encourage initiatives in curricula from a wide range of stakeholders and to ensure that they work together;
- to create more flexible ways to achieve qualifications to build on those already created for providing VET to young people without basic education;
- to support teachers and trainers in teaching new qualifications both through improving their own training and through using more innovative study methods;
- to create separate qualification assessment procedures appropriate to a competence-based qualification system;
- to build on best practice elsewhere.

These principles have been met by a number of reforms including funding increases. Specifically for qualifications, the Development Plan includes a number of measures to achieve these principles:

- National strategic development plans and labour force forecasts prepared by the Ministry of Economic Affairs and Communication will be used to plan state formal education and training provision;
- Short-term labour force forecasts prepared by the Ministry of Social Affairs will be used to plan continuing training needs by the National Labour Market Board, professional associations, county and local governments;
- Examinations held by VET providers will be replaced by standardised vocational examinations in different professions;
- Standardised curricula and professional standards will be developed and their content regularly updated. These will be used to develop provider curricula for their qualification modules and a standardised system of credit points will be developed;

- Vocational training will be offered in general education schools in cooperation with local VET providers and graduates with vocational qualifications will be able to access higher education;
- More flexible training pathways will be introduced (including special programmes for those with special needs). It will be possible to study for partial qualifications (through the introduction of modules and standardised credit points);
- Guidance services will be improved to steer people into vocational training pathways;
- Networks will be established comprising local governments, county governments, counselling centres, VET institutions and other partners to evaluate the education requirements of young people (aged 17-25) and adults with different abilities, and provide them with training opportunities corresponding to their needs.

The Plan is also supported by the Estonian Lifelong Learning Strategy 2005-2008 (*Eesti Elukestva Õppe Strateegia 2005-2008*) and EU Structural Funds have been used to implement qualifications development including: the preparation of modules within national VET curricula and the creation of a system for accrediting prior learning and work experience (*varasema õppe- ja töökogemuse arvestamine - VÕTA*).

By the end of 2006 over 200 professional standards were approved in Estonia (half were updated standards) and VET providers have modified their curricula accordingly. Over 20 000 employees received a qualification according to the new competence-based vocational qualification system.

070202 Legal, administrative and institutional framework

Legal framework

The Professions Act (*Kutseseadus*) defines vocational qualifications according to competence levels required by certain professions. These are defined on the basis of legal, traditional, and/or internationally-recognised requirements. The knowledge, skills and competence profiles required are described in professional standards.

The Standard of Vocational Education regulating the quality assurance measures of vocational education was adopted in 2006. Currently draft legislation is being prepared to describe the learning outcomes (knowledge, skills and competences) of the levels of the new NQF.

Regulated professions and their accreditation include:

- Recognition of professions regulated by the EU General System Directives <https://www.riigiteataja.ee/ert/act.jsp?id=764829>;
- Recognition of Foreign Professional Qualifications Act;

- Sectoral acts regulating the recognition of professions regulated by directives (Health Care Services Organisation Act, Medicinal Products Act, Veterinary Activities Organisation Act, Building Act, Planning Act).

Applicants for professional recognition address the competent authority that compares their professional qualification with that defined in Estonian legislation.

Institutional framework

The development of qualifications involves:

- The Ministry of Education and Research coordinates and performs national monitoring on qualification preparation and development;
- Estonian Qualification Authority (established in 2001) is responsible for the development of an integrated vocational qualifications system. It comprises representatives of the Ministries of Education and Research, and Social Affairs but it is under the governance of the Ministry of Education. It is responsible for ensuring Estonian qualifications are comparable with other countries and recognises qualifications gained elsewhere. It organises the activities of the 16 professional councils and evaluates the professional standards as a mean to develop and improve them. It is responsible for the state register of professions;
- The Chamber of Commerce and Industry, Estonian Employers' Confederation, Central Federation of Trade Unions – participate in professional councils, monitor the expediency of the activities of the Estonian Qualification Authority as members of its Supervisory Board;
- Professional councils (16 professional regional councils) are responsible for preparing, amending, renewing or invalidating professional standards;
- Enterprises, professional associations, VET organisations and individuals can submit a proposal to prepare a particular professional standard. The right to award qualifications (so far given to 83 bodies) is mainly given to professional associations;
- The State Examination and Qualification Centre is responsible for preparing, registering and developing VET curricula.

	Coordination of qualification development	Proposing, preparing and approving professional standard	Preparing procedure to award qualifications	Curricula preparation, registration and assessment	Development of work-place practice
Ministry of Education and Research	X	X	X	X	X
Estonian Qualification Authority	Development of qualification system				
Social partners	Monitoring activities of the Estonian Qualification Authority				
16 Professional councils		X	X		
Enterprises, institutions, organisations, individuals		X			X
Professional associations		X	X		X
State Examination and Qualification Centre				X	X
Ministry of Economic Affairs and Communications	Monitoring activities of the Estonian Qualification Authority	X (not involved in preparation)			X
Ministry of Social Affairs	Monitoring activities of the Estonian Qualification Authority	X (not involved in preparation)		X (curricula for employment training)	

070203 Methods, approaches, practices and tools

In 2004 the State Examination and Qualification Centre initiated the preparation of national curricula for vocational education. By the end of 2006 the first 5 national curricula had been approved (all 35 should be complete by the end of 2008). The preparation of the national curricula is coordinated by the State Examination and Qualification Centre.

To prepare a new professional standard (or amend/cancel an existing one), a written proposal must be submitted to the relevant professional council within the Estonian Qualifications Authority. The proposal must explain the need for a new/amended/cancelled standard. They tend to be submitted by professional associations, state authorities, enterprises, educational institutions, legal and natural persons (statutes of professional council, procedure for preparing and approving professional standards). The council considers all proposals and decides whether or not to approve it and who will be responsible for elaborating it further (working group, enterprise, professional association, etc.). On the basis of a new/changed standard VET

school curricula and national VET curricula are proposed which describe the knowledge, skills and competences required for working in the area of specialisation. The professional standards are approved by the professional councils and entered into the Estonian register of professions. They are valid for a 4 year period.

Professional standards form the basis of curricula development. Curricula define the objectives of training and the methods and courses prescribed to achieve those objectives. Curricula are set by VET institutions after consultation with representatives of professional associations, employers, trainers, public authorities and students (who are also consulted on curricula change). A school prepares a curriculum for each area of specialisation taught in the school. The curriculum takes into account the requirements of the Vocational education standard and the respective national curriculum and also defines the list of elective courses. In practice, reviews are undertaken every 2 or 3 years due to changes in professional standards.

Curricula are presented to the Ministry of Education and Research for expert opinion and registration (Vocational education standard, statutes of the State Examination and Qualification Centre). Each curriculum is analysed to define the chances of acquiring the necessary skills and competences upon completion, the need for acquiring new qualifications (as additional area of specialisation or as an entirely new curriculum), the efficiency of the pedagogical methods used and the need to amend methods. These activities are also supported by the feedback system established in almost all VET institutions which seeks to gather the opinions and evaluations of the students. After the review the Ministry has the right to present recommendations for amending the curriculum or for changing the teaching staff. In larger VET institutions these activities are often divided between the director of development and the director of training. In smaller VET institutions this responsibility is mainly performed by one of the members of the school's management board.

The Ministry of Economic Affairs and Communications presents their forecast of the demand for labour force to the Ministry of Education and Research who will determine the state-commissioned education provision on the basis of the forecast and the proposals of schools, professional councils and local governments.

The preparation of new professional standards and new curricula has been project-based through sectoral initiatives (for example in tourism), and/or regional demand (for example creating laboratory assistants for the chemical industry situated in Ida-Viru county), or through VET providers themselves introducing new areas of specialisation. Professional associations have been particularly active and have made numerous proposals in social work, childminding, sports training, etc. They have also created standards in very specific professions which are not efficient to be developed through state-financed study programs at national level. In these cases the relevant professional council within the Estonian Qualification Authority gives the right

to award such qualifications to the awarding bodies although no formal study program is available.

The Estonian Qualification Authority has prepared a new model of professional standard and had piloted it in several sectors. The new standards are based on descriptions of the knowledge, skills and competences required for working in specific areas of specialisation. Compared to previous standards, their structure is more transparent and clear for employers, employees, students and trainers. The new model has been used for preparing the professional standards for vocational teachers, accountants, mechanics, furniture maker, etc.

070204 Building partnerships and raising awareness

Building partnerships

Building partnerships and ensuring cooperation has been at the heart of many of the qualifications reforms. This is reflected at central, regional and local levels.

At the national level, social partners are involved with the Ministries and the national agencies (Estonian Qualification Authority and the State Examination and Qualification Centre) in preparing professional standards and national curricula. Sectoral organisations and professional associations form the professional councils and participate in the working groups created by the State Examination and Qualification Authority. The cooperation enables them to submit proposals for the development of qualifications and assess their implementation.

Similarly at the local level VET schools cooperate with local enterprises to develop locally appropriate curricula and specialisations (enterprise representatives are part of VET school boards). As work-place practice is an integral part of training, it is in the interest of both parties to participate.

The state, social partners and schools participate in international councils, co-operation groups and networks which enable the exchange of best practices and the development of new curricula.

Raising awareness

Information on new qualifications is disseminated in various ways e.g. through workshops, information seminars, printed media, internet, etc. This information is required by guidance specialists in schools and employment offices as well as by enterprises, professional associations, local governments and policy-makers.

070205 Financing the development of new qualifications

All central organisations involved in developing and assessing qualifications are state funded, this includes the Estonian Qualification Authority and the State Examination and Qualification Centre.

Professional standards and curricula are prepared in co-operation with experts who receive remuneration from the state budget. The bodies

awarding professional qualifications receive remuneration from the state budget or from the examination fee paid by the applicant or the employer. National regulations provide for state remuneration of the different parties involved in developing qualifications in order to ensure their participation. Funding statistics are not available as costs are included in the budgets of different institutions.

0703 INNOVATIVE PEDAGOGIES: GENERAL BACKGROUND

There is no national definition for what constitutes innovative pedagogy. Usually it signifies a learning procedure which is designed to find an individual approach. This kind of learning procedure is often related to the use of information technology or virtual environment as a teaching aid. Other methods which simulate real working environments are also considered innovative (e.g. pilot training in aviation, medical nurse training, etc.).

Another group of innovative pedagogical methods comprises training built on different networks in Estonia or in the international context. Several vocational educational institutions bring their teachers together and join efforts to find the best solution for training students. It is also common to send students to work-place practice in other countries upon completion of their studies (e.g. welding practice in Finland).

Apprenticeship is perceived as an innovative training method which has recently gained popularity. Apprenticeship signifies that students spend most of their time performing their vocational tasks and in addition pass certain theoretical courses. It means learning practical skills in a work environment and acquiring theoretical knowledge in VET institutions.

070301 Policy development on innovative pedagogies

The Estonian VET system has been reformed since the mid-1990s. The vision of development was clearly defined by the government in the following documents: Conceptual bases of vocational education (*Kutsehariduse kontseptuaalsed lähtekohad*) (1998); Action Plan for Developing Estonian VET System in 2001–2004 (*Tegevuskava kutseharidussüsteemi arendamiseks Eestis aastatel 2001-2004*) (2001); Action Plan for Developing Estonian VET System in 2005–2008 (*Eesti kutseharidussüsteemi arengukava aastateks 2005 – 2008*) (2005).

These documents include a focus on: student-centred education; supporting the use of virtual learning methods; applying the principles of lifelong learning (especially the development of adult education and the respective methods); supporting self-learning techniques, etc. The main objective of the development plan is to raise the popularity of vocational education (especially among basic school graduates), to meet more adequately the needs of the labour market and to support different methods and study forms for acquiring professional qualifications (see 0702).

To make the learning system more flexible, a modular study system was created (this is especially important for adult learners who wish to raise their qualification or to participate in CVET). The professional qualification system being implemented promotes training based on skills/competences. This approach enables people to sit for qualification examinations without passing the formal study route. It also allows people to study for partial qualifications. In preparing curricula, study methods are inherent to vocational content.

The Estonian Lifelong Learning Strategy 2005-2008 accentuates the need to develop various training possibilities and methods for adult learners in particular, but also for several minority groups. Attention is paid not only to potential administrative solutions, but also to the creation of new modern learning environments. As one of the outcomes the Tiger Leap (*Tiigrihüpe*) project has expanded to develop and modernise the electronic learning environment for VET. The e-Vocational school programme has trained teachers to use information technology for teaching.

The implementation of modern pedagogical methods and the development of curricula are viewed as important to attract young people (who tend to opt for academic education) into vocational training. The institutions have difficulty to find their teaching staff as the salary level of teachers in both general and vocational education remains under the average salary on national level. As a result, staff are often older and less willing to change their pedagogical approach. Further, the qualification requirements for VET teachers (*Pedagoogide kvalifikatsiooninõuded*) (regulation nr. 65 of the Minister of Education and Research on August 26, 2002) valid until 31.08.2007 allows for minimum pedagogical training which is not sufficient for applying innovative pedagogical methods. In addition, VET has been relatively under-funded since 1990 and providers do not have the equipment to introduce more innovative teaching methods.

Nevertheless, several political decisions and solutions have promoted the implementation of modern innovative pedagogical methods including:

- introduction of apprenticeship forces VET institutions to find more individual approaches especially for acquiring theoretical knowledge by applying various network-based methods, participation-based learning, and different computer-based learning methods;
- vocational education has been recognised as a priority post EU membership and access to several funding possibilities has rapidly improved the material-technical resources of VET institutions, including the number of computers per school (in recent years many computer classes have been established in VET institutions);
- in the last two years the minimum salary of teachers has increased more quickly than average wages building a basis for recruiting younger and more competent teachers in the near future;
- the Ministry of Education and Research pays more attention to the qualification of VET teaching staff (The Vocational Teacher's Standard adopted in 2006, increased state-commissioned education provision - including training for teachers who already work).
- Several state-financed projects for different VET target groups have been supported by the Ministries. One outcome of these initiatives is the implementation of modern pedagogical methods or creating prerequisites for implementing such methods. Projects aimed at developing information technology resources and teaching certain groups of students to use the software (for example national minorities, new immigrants or youth) requires appropriately trained teachers.

Policies on training provision have driven improvements in teacher training initiatives.

070302 Legal, administrative and institutional framework

In Estonia, VET providers can choose their own study methods and no legislation exists at national level.

One particular national project, the Tiger Leap Foundation is state-financed and has been established to implement information and communication technology (ICT) in the education sphere, including vocational education. Ministries (including the Ministry of Education and Research who governs most of the educational institutions) provide funds for such projects. Each year a part of investment from the state budget are used for developing the use of ICT in VET institutions.

VET schools are responsible for developing curricula and implementing innovative pedagogical methods. The curricula prepared or amended by the school must be presented to the Ministry of Education and Research for registration and entering into the Estonian education information system (*Eesti hariduse infosüsteem - EHIS*). This material is one of the bases for issuing training licences to schools.

070303 Innovative pedagogies in VET

The use of innovative pedagogical methods is entrenched in VET, especially the use of e-learning methods at higher VET levels although there are no national studies to confirm this.

The implementation of innovative teaching methods (especially e-learning) has improved the possibility for distant learning and raised its popularity. Similarly, modern study methods and technology have influenced the popularity of some curricula (for example the mechatronics in Võru County Vocational Training Centre).

The conversion to competence-based curricula development has motivated schools to strengthen their contacts with employers and graduates to be aware of the essential competences required on the labour market. VET institutions can no longer rely only on the competence of their teaching staff when preparing curricula. Similarly, technology is advancing so quickly, that VET providers often rely on local enterprises to provide training with the latest technology.

Several learning possibilities based on e-learning (e-counselling, various learning environments with corresponding learning materials) enable working people to participate in training and to raise, or gain a new qualification.

07030301 e-learning in VET (incl. statistics)

E-learning is coordinated by the Estonian e-Learning Development Centre which administrates two consortiums: Estonian e-University and Estonian e-VET consortium (<http://www.e-vet.ee>) which consists of 27 VET schools and 7 applied higher education institutions.

The objective of the e-VET consortium is to achieve high quality, sustainable e-learning development and an implementation system for e-VET schools and applied higher education institutions. To create this system, the following activities are ongoing:

- creation of e-learning content;
- developing a training system and training teachers/instructors;
- implementing the e-learning support system;
- creating and sustaining thematic networks;
- research in the field of e-learning;
- assuring effective and user-friendly e-learning infrastructure.

The Estonian e-VET consortium has a central server to support two e-learning environments: IVA and Moodle. A video conference system that covers all Estonian educational institutions has been created. Virtual learning portal with databases of courses and learning objects repository are being developed.

To ensure the quality of the learning process the following activities and documentation are provided:

- Instructional materials: “The quality of e-courses”; “Design of e-courses”; “Using different technologies in educational context”; “Tutoring in web-based learning” and “Educational technology competences for teaching staff”.
- Activities: coordinating e-learning support system (educational technologists); public presentation of developed e-courses; adopting e-courses for disabled learners and annually announcing the selection of the best e-courses.

Promoting e-learning promotes:

- Improvement in the quality of learning through co-operation between providers and teaching staff and the integration of different subjects and forms of learning;
- more efficient and available learning, thereby promoting the maximum realisation of the abilities of all people;
- learner-focused and motivating learning methods where the learner has a more important role in designing their learning process;
- change in the content of work for teaching staff as the learning process becomes more individually tailored.

E-learning provides VET schools with possibilities to go international in their activities. New technologies and e-learning methods improve learner motivation and give people with different learning styles the opportunity to choose the way they want to learn. E-learning allows teachers to do more practical work in the classroom and students can acquire the theoretical part online.

[07030302 Barriers to implementation](#)

The main obstacles, weaknesses and threats to implementing e-learning are:

- it is not a priority for the Ministry of Education and Research;

- it is not a priority for management boards of VET institutions;
- lack of motivation to make teaching staff implement e-learning (and a lack of teaching competence);
- material-technical resources of educational institutions are insufficient;
- learners' insufficient preparation or low motivation for using modern learning environment;
- insufficient choice of interactive study materials (if a certain area of specialisation is only taught in one school in the country, it is not expedient to spend large amounts of money on purchasing modern equipment);
- lack of funding for e-learning projects and uncoordinated activities in the EU project implementation units;
- internal competition in the Estonian education system;
- restrictions and prejudices associated with copyrights.

To implement e-learning in a successful way, the following factors are important:

- cooperation between the Ministry of Education and Research and management boards of higher education institutions and vocational schools;
- raising awareness of school management boards;
- developing pedagogy and didactics for e-learning and providing corresponding training for teaching staff;

070304 Building partnerships and raising awareness

Building partnerships

According to the acts related to the teachers' profession (framework Requirements for Teacher Training, the regulation of the Minister of Education and Research on the qualification requirements for teachers, the professional standard of vocational teacher) all VET teachers must pass pedagogical training which can take place in Tartu University, Tallinn University of Technology or Tallinn University. In this sense there is cooperation between universities and VET institutions to find the best methodological solutions and pedagogical approaches to raise the professional level of VET teachers. In many cases VET institutions co-operate with local general education institutions by sharing the premises, teaching staff as well as teaching aids. As for provision of practical training, the sectoral cooperation with enterprises helps teachers to keep up-to-date with latest developments. Enterprises also support VET institutions to organise practical training.

As well as work-place practice, VET institutions also co-operate through international networks. This enables VET institutions to make their curricula more orientated to learning outcome and gives teaching staff the possibility to acquire new pedagogical methods and skills.

Leonardo da Vinci projects are an example of successful exchange of experience and adaptation of study materials. The development of curricula involves more and more teachers, employers and specialists who can raise their knowledge on the nature of curriculum as well as its preparation and

implementation and as a result the links between the needs of the labour market and the training processes are reinforced.

In developing curricula and qualifications, a variety of stakeholders and experts are involved (see 07020304) within the professional councils of the State Examination and Qualification Centre. In their proposals, assessment and recommendations, they include types of study materials, teacher training (and retraining) and other pedagogically related issues.

Raising awareness

Activities to raise awareness about innovative pedagogies comprise seminars, discussion forums, newsletters and special information sheets. The end-users of this information are guidance and counselling professionals, policy makers, social partners, state and local authorities. The media in all its forms is also involved in raising the awareness.

070305 Financing innovative pedagogies (incl. statistics)

Most funding for VET is provided by the state: this applies to both IVET and CVET (3% of the salary fund of teachers is foreseen for in-service training). There are also some municipal or private VET institutions which receive funding from local governments to the contribution of the state for state-commissioned education provision. Private VET institutions are funded by the tuition fees paid by students.

Continuing education is financed according to: projects; by the State (for example in-service training for teachers, retraining of unemployed); and private resources.

These financial resources are also used for the development of curricula and the organisation of teacher training in schools.

State financing for innovative pedagogies through the e-Vocational School project (implementing body: Estonian Information Technology Foundation) was 0.06 million euros (0.98 million kroons) in 2005 and 0.08 million euros (1.2 million kroons) in 2006. All in all, the state-financing for the information and communication technology of state VET institutions was 0.8 million euros (12.8 million kroons) in 2005 and 0.7 million euros (12.2 million kroons) in 2006.

0704 INNOVATION IN TEACHER TRAINING

There are 3 types of teachers in VET:

- **vocational teachers** (*kutseõpetaja*) at VET institutions who teach theoretical subjects and supervise practical training;
- **general subject teachers** (*üldaineõpetaja*) at VET institutions who teach languages, history, math and other general subjects;
- **workplace supervisors** (*ettevõttepraktika juhendaja*) at companies, who supervise VET institutions' students practical training in companies.

Public universities which provide teacher training will convert to competence-based curricula in spring 2008. Several amendments have been made to IVET teacher training curricula to prepare them for these changes. The program councils of teacher training curricula have analysed and specified the skills, competences and knowledge that vocational teachers will need.

The new professional standards for vocational teachers were approved at the end of 2006. The standards define different requirements according to different qualification levels. The competence descriptions give specific instructions for teachers both in IVET and CVET.

As VET has been a priority area since Estonia joined EU in 2004, EU Structural Funds have been available for VET development. Several projects have been initiated through the European Social Fund (ESF) to raise the qualification and professional skills of vocational teachers and involve them in various networks. The Action Plan for developing the Estonian VET system in 2005-2008 sets, among others, the following objectives:

- creating a training system for work-place supervisors in enterprises (requirements for education and work-experience for those who supervise VET students);
- preparing and adopting the professional standard for vocational teachers and the new qualification requirements;
- creating and implementing a flexible training and in-service training system for vocational teachers to raise their qualification levels;
- motivating teachers and specialists to work in the VET system by applying flexible qualification requirements and competitive salaries.

The Government's European Union Policy for 2004-2006 (*Vabariigi Valitsuse Euroopa Liidu poliitika 2004-2006*) points out that the definition of the roles and competences of teachers as well as the modernisation and the purposeful development of teacher training (especially for vocational teachers) are national priorities.

The Estonian National Development Plan for the Implementation of the EU Structural Funds (single programme document 2004-2006) (*Eesti riiklik arengukava Euroopa Liidu struktuurifondide kasutuselevõtuks (ühtne programmdokument 2004-2006)*) was created to use resources from EU Structural Funds. The plan contains a detailed overview of the fields of activity

which need support and allow funds to be allocated on that basis (including for the teacher training system). Since 2004 Estonia has received support from the Structural Funds to develop human resources (94% of all the funds received have been divided between regions and respective objectives: 12,3% were allocated for developing the policies and systems related to education, training and labour market).

The development plan foresees the following activities related to vocational teachers:

- development and implementation of formal education and in-service training of teachers in VET institutions and universities, including staff exchange with foreign universities and research institutions, training of trainers and work-place supervisors;
- development of curricula, including the acquisition of new learning material related to the training programmes funded by the European Social Fund (ESF), the use of innovative learning and teaching methods in vocational and higher education, training the teaching staff;
- creating a database for gathering information on the study possibilities of adult learners;
- creating a system for accrediting prior learning and work experience (*varasema õppe- ja töökogemuse arvestamine - VÕTA*);
- development and implementation of professional qualification system;
- training students and teachers to use information and digital technology.

Some activities have already achieved their objectives, some are currently in process and others will take some time to implement.

The budget for the measure 1.1 “Educational system supporting the flexibility and employability of the labour force and providing opportunities of lifelong learning for all” for the first programming period (2004-2008) is 53,621,020 EUR (838,988,796 kroons), the part funded from the European Social Fund is 40,215,765 EUR (629,241, 597 kroons).

These policy aims and objectives complement what has been happening in the training of VET teachers and trainers. General subject teachers can become VET teachers through an in-service training option. Courses are often web-based (for example the learning environment IVA in Tallinn University and Web-CT in Tartu University). Most teacher training methods include some delivery through digital means.

All teacher training comprises several methods: group work; team work; and practical tasks. Classroom activities include modern electronic teaching aids (projectors, touchscreens, etc.). Students are encouraged to include play elements and drama as part of their teaching methods. At the same time, various distant learning forms and methods are used and guided self-learning is promoted. The study process places the main focus on the students and feedback is regularly collected to improve content and delivery.

The implementation of modern innovative learning methods changes the role of teachers and many of them spend less contact hours with students and more time communicating with them via computers. They must know how to work with different databases to provide students with the latest information and working methods at the same time, they must provide a more personal service and encourage teamworking. The teacher is not always the direct mediator of knowledge and skills, but also acts as an organiser of the study process. This conversion requires the teacher to have more skills and training related to management.

0705 INNOVATION IN ASSESSMENT

The assessment of qualifications in VET institutions has shifted towards module-based education where the output (the competences acquired) and its assessment, is more important than previously. Vocational qualification examinations exist for most areas of specialisation and the majority of students are expected to take them upon graduation. The examination comprises a theoretical and practical part of the studies, providing an objective assessment on the actual skills of the student.

During the learning process, several assessment methods are applied in addition to regular evaluation of the students, for example, self-assessment which is particularly important for practical work. In this case, the student first assesses his or her performance and then the other students in the group as well as the teacher point out the strengths and weaknesses. The portfolio-based self-assessment is often used for evaluating work-place practice. Group evaluation is common for group work and several tests and interactive programs are applied for direct feedback on the student's performance.

In terms of organising assessment, several VET institutions have made study results available to students via school intranets. The difference assessing IVET or CVET students is the name and nature of the certificate issued. In IVET, graduates receive a document certifying education, but in CVET, graduates receive a certificate attesting the studies.

070501 Innovation in evaluation and quality monitoring

VET institutions apply several mechanisms for quality monitoring which include teaching methods:

- since September 2006 principles of quality management in the Estonian vocational education system must be applied (see bibliography for the regulation and instructions prepared by the Ministry of Education and Research);
- VET institutions conduct regular studies among students and graduates to reveal their opinion on the study process, the content of studies and its quality, the chances for employment and additional skills needed on the labour market;
- programme councils mediate regular communication between VET institutions and employers for the latest information on changes required in students' qualification (in the valid curricula) and on the need for preparing new areas of specialisation;
- study programmes are based on learning outcomes – this means that if the required outcome (the qualification of a student) is changed, it brings changes to curricula and teaching methods.

The mechanisms apply to both IVET and CVET (also for employment training) as their application is institution-centred. There is also a quality award system which enables schools to compete for the best VET institution award. To win, they have to present a thorough report of their activities to the relevant commission who evaluates quality and announces the winner.

0706 INNOVATION IN GUIDANCE AND COUNSELLING

There are three qualification standards for career practitioners in Estonia: career counsellor, career information specialist and career co-ordinator at school (including VET institutions and higher education institutions). The latest standard for career counsellors dates from 2001, the other two are newer (until then, there were no official and nationally agreed minimal qualification requirements). The majority of guidance practitioners have a background in youth work, teacher training, social work or psychology.

Until December 2005, there were no official and nationally agreed minimal qualification requirements for guidance practitioners. The recently approved qualification standards might also take some time to implement. The majority of guidance practitioners working in the education sector have a background in youth work, teacher training, social work or psychology.

Until accredited basic training was available in career guidance, the most urgent training needs were met by various courses. For example, twice a year, the National Resource Centre for Guidance (Estonian NRCG) organises a three-day information and training seminar aimed at both education and labour sector counsellors. They serve as a meeting point to enhance co-operation and information flow between the two. Topics have included enhancement of practitioners' information retrieval skills, trends in economy and employment, solution oriented counselling, crises psychology, etc.

Between November 2005 and June 2006, three universities piloted a joint 9 credit (according to the ECTS) training programme in guidance within the framework of the EU Structural Funds project - The Development of the Guidance System in Estonia. It will be followed by three separate specialisation courses (worth 2 credits) for career counsellors, career information specialists and career co-ordinators at schools leading to the (voluntary) professional examinations to acquire one of the three qualifications. The pilot course was designed for 55 practicing specialists from both sectors.

During 2004 – 2006 Estonian NRCG participated in an international project called "The Establishment of National Guidance Forums in Six Member States MEDSUI – Malta, Estonia, Denmark, Slovenia, United Kingdom and Ireland" to form a European network and develop strategic national plans in guidance. For Estonia, this meant preparing the ground to create an assembly of representatives from all stakeholders and policy makers in order to engage them in a co-ordinated development of lifelong guidance in the future. Feedback collected to the draft strategic plan, prepared by an inter-ministerial working group led by the NRCG, was very supportive of the initiative, and the extended group of all interested parties met for the first time in September 2006. The official launch of the Estonian Guidance Policy Forum is foreseen in early 2007.

The recent survey of guidance in Estonia (see summary at <http://www.innove.ee/en/?p=2&op=page&pID=135>) pointed out that at state level, the formulation of development areas and overall goals, as well as the distribution of resources, is a prerequisite for creating a more effective network of guidance services. The establishment of a guidance forum with representation from all stakeholders and a clear-cut action plan for the next few years should address these needs in a direct and immediate way.

One of the specific objectives of the project is to elaborate sample materials for the delivery of career education in general education and VET institutions in order to improve the quality of career education and to reduce the number of drop-outs.

Although career planning is a compulsory cross-curriculum topic in the national curriculum, not all teachers have the knowledge and skills necessary to deliver such services. This is, in part, due to the lack of teacher training. This has prompted the development of a model careers education syllabus and relevant study and instruction materials. In cooperation with 21 pilot schools (including 7 vocational schools), the project team intends to develop a model action plan for career education that would help schools to plan and carry out various activities, divide roles within the school, etc. The pilot schools will test the materials to see how well they can be integrated in the study process. Piloting includes teaching career planning as a cross-curriculum topic, as an individual subject/course and in extracurricular activities using a relevant model action plan.

0707 THE EUROPEAN AND INTERNATIONAL DIMENSION

Many schools are involved in international co-operation with partner schools in other EU countries. Schools co-operate through Leonardo da Vinci projects, INTERREG projects and other international development and exchange projects. Professional associations co-operate through international umbrella organisations and respective confederations in different countries. This cooperation can be relevant to exchanging information and practice on new and innovative pedagogies.

EU policies for raising the level of vocational skills and knowledge and recognition of qualifications have a strong impact on national policy. The principles of the Helsinki communiqué are appropriate to national policy challenges. Policy developments include converting from a 5-level competence-based professional qualification system to the 8-level framework described in the European Qualification Framework which unites both educational and professional qualifications. The conversion is expected to take place between 2008 and 2012, and the respective legal instruments will be introduced by the end of the 2007.

Estonia welcomes the introduction of the European vocational educational credit transfer system as it meets development needs and several activities are already in progress (structuring new national curricula according to the descriptions of competences, preparation of the conception for partial qualifications, implementation of the system for accrediting former learning and work experience (*VÕTA*)).

070701 Europeanisation of VET curricula

According to regulations related to VET standards, the curricula of VET institutions are comprised of a general part (with general and specific modules) stipulated by the national curricula and the modules of elective subjects. General subject modules studies define the set of knowledge and skills required in various areas of specialisation, for example environmental safety, basic economics, applied foreign language, computer studies, basic labour legislation. European and international dimensions are included in vocational studies depending on the field. Students are guided to use the internet for searching and using new information concerning their area of specialisation.

Topics of European citizenship, multiculturalism, tolerance and social inclusion are included in general subjects taught in VET institutions. Topics of innovation and technological progress constitute an integral part of the process and content of vocational studies – it is included in the learning methodology (e-learning methods, teaching aid) as well as through creation of additional areas of specialisation (for example mechatronics).

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