KEY COMPETENCES IN VOCATIONAL EDUCATION AND TRAINING

FINLAND

THEMATIC PERSPECTIVES
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The thematic perspectives series complements the general information on vocational education and training (VET) systems provided in 'VET in Europe' reports. The themes presented in the series feature high on the European agenda.
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Introduction

Relevant and up-to-date vocational competences are vital for Finland's economic competitiveness and prosperity. The labour market demands diverse vocational skills, strong competences, and the continued renewal of these skills. The mission of vocational education and training (VET) is to foster the skills required in working life, promote (self-)employment and support lifelong learning. Initial VET provides students with the necessary vocational skills for entry-level jobs. At upper secondary level, VET also supports learners growing as society members and provides the knowledge and skills for further studies. Upper secondary VET qualifications prepare for work. Graduates' acquire a range of (basic) vocational skills and tools for entrepreneurship; all supporting their personal and professional development, and preparing for further studies.

Adjusting to changes in working life requires the employee to possess good lifelong learning skills. A key objective of upper secondary VET is to support completing of young people studies and to provide them with the tools for being good citizens and for lifelong learning.

Among the main objectives of the reforms in upper secondary VET made over the past five years has been to strengthen key skills in lifelong learning. The so called common units were reformed in an effort to provide students with key competences – necessary tools for functioning in working life and society.

VET Act (amended in 2014, in force since 1 August 2015) aims at strengthening the learning-outcome approach of vocational qualification requirements. It expands a modular structure of qualifications that supports the creation of flexible individual learning paths and promotes validation of prior learning. The core subjects have been grouped into:

(a) competence of communication and interactive ability,
(b) mathematical and scientific competences,
(c) skills needed in society and the world of work, and
(d) social and cultural competences.

1. Upper secondary VET qualification and key competences

The decree on the composition of upper secondary VET qualifications (A 801/2014) stipulates that a qualification shall include:

(a) vocational units (135 competence points);
(b) common units (35 competence points);
(c) free-choice units (10 competence points).
Vocational units are based on the labour market needs. They can be assessed separately. A qualification or its competence area (1) should include at least one compulsory and one optional vocational unit. The number of units varies by qualification but there are four common for all VET programmes (Figure 1).

Table 1. **Common units and sections**

<table>
<thead>
<tr>
<th>Unit 1: Communication and interaction competence</th>
<th>Unit 2: Mathematical and natural scientific competence</th>
</tr>
</thead>
<tbody>
<tr>
<td>(3 of 11 competence points are optional)</td>
<td>(3 of 9 competence points are optional)</td>
</tr>
<tr>
<td><strong>Sections (all compulsory):</strong></td>
<td></td>
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<tr>
<td>1. mother tongue</td>
<td>1. mathematics</td>
</tr>
<tr>
<td>2. second national language</td>
<td>2. physics and chemistry</td>
</tr>
<tr>
<td>3. foreign language</td>
<td>3. information and communications technology</td>
</tr>
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<td></td>
<td>and its innovation</td>
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</tbody>
</table>

| Unit 3: Social and labour market competence     | Unit 4: Social and cultural competence              |
| (3 of 8 competence points are optional)         | (at least 1 of 7 competence points is compulsory)  |
| **Sections (all compulsory):**                  | **Sections:**                                       |
| 1. social competences                          | 1. cultural knowledge                              |
| 2. labour market competences                   | 2. art and culture                                 |
| 3. entrepreneurship                            | 3. ethics                                          |
| 4. maintaining work ability, physical and health education | 4. psychology                                      |
|                                                 | 5. environmental competences                        |
|                                                 | 6. additional modules from units 1-3                |

Full qualification requires the completion of all compulsory and optional sections in a common unit (35 competence points). Learners can choose sections of each unit according to their objectives.

The aim of common units is to ensure that all upper secondary VET graduates possess the skills of being a good citizen and lifelong learning competences. These skills are needed for, in particular, further studies or adapting to new careers. Common units were reformed in 2015 to provide all students with better basic knowledge of the labour market and entrepreneurship.

Free-choice units may include:

(a) vocational units (upper secondary, further education or specialised);
(b) local/regional vocational skills;

(1) A qualification may comprise one or more competence areas, for example VET forestry qualification comprises four competence areas: forestry services, forest machine operation, forest machine installation and forest-based energy production.
(c) common units or subjects of general education;
(d) learning preparing for further studies and professional development;
(e) individual units based on competences acquired through work experience (e.g. vocational skills acquired through on-the-job-learning).

The planning of a qualification-specific unit in provider curriculum is based on vocational skills requirements and competence targets specified in the national criteria for upper secondary VET qualifications, assessment targets and criteria. Each unit must be planned taking account of environment, working methods, tools, knowledge and lifelong learning skills.

2. Key competences for lifelong learning

The Recommendation of the European Parliament and of the Council (2006) on key competences for lifelong learning has been fully taken into consideration in upper secondary VET provision. Key competences have been nationally adapted and included in the units.

Key competences for lifelong learning are needed in continuous learning, in seizing future and new situations as well as in coping with the changing working life environment. They are an important part of vocational skills and reflect an individual’s intellectual flexibility and ability to manage different situations. They support students’ growth into good and balanced individuals and members of society. Key competences are needed in all fields and help learners to keep up with the changes in society and working life as well as to act under changing conditions. They also play a major part in one’s quality of life and development of personality.

The requirements of competence-based qualifications and key competences are common to all vocational fields. The key competences for lifelong learning include cross-curricular themes from basic and general upper-secondary education. The competences are included in the objectives of core subjects and the requirements of vocational qualification modules and their assessment criteria. Key competences for lifelong learning are:
<table>
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<tr>
<th>Category</th>
<th>Description</th>
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<tbody>
<tr>
<td>Learning and problem solving</td>
<td>Learners plan their activities and assess their own competences, solve problems and make decisions and choices regarding their work. They are adaptive, innovative and creative in their work, acquire, assess, analyse and apply data.</td>
</tr>
<tr>
<td>Interaction and cooperation</td>
<td>Learners act appropriately in different interactive situations and express different views clearly, constructively and in a confident way. They work cooperatively with people and as members of a team; they treat all people equally. They observe common rules of behaviour and regulations. They make use of the feedback.</td>
</tr>
<tr>
<td>Professional ethics</td>
<td>Learners observe the value basis of the profession. They are committed to their work and act responsibly following the contracts made and work ethics.</td>
</tr>
<tr>
<td>Health, safety and ability to function</td>
<td>Learners act safely and responsibly at work and leisure as well as in traffic and also lead a healthy life and maintain their ability to function and work. They work ergonomically and take physical exercise needed in the profession and also act in a manner that prevents the dangers and health hazards in the working environment.</td>
</tr>
<tr>
<td>Initiative and entrepreneurship</td>
<td>Learners work towards completing the objectives set. They take initiative and act in a customer-oriented way as employers and/or entrepreneurs. They plan activities and work to reach the objectives set. They act economically and are result-orientated. They set personal goals in line with the overall objectives.</td>
</tr>
<tr>
<td>Sustainable development</td>
<td>Learners act according to ecological, financial, social and cultural principles in the profession. They observe the rules, regulations and contracts of sustainable development prevailing in the sector.</td>
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<tr>
<td>Aesthetics</td>
<td>Learners take into consideration the aesthetic factors in their line of work. They contribute to and maintain the niceness and aesthetics of the working environment.</td>
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<tr>
<td>Communications and media skills</td>
<td>Learners use their language skills in a way that is appropriate, varied and interactive considering the situation. Students observe, interpret and assess different media products critically. They use the media and information technology as well as produces media material.</td>
</tr>
<tr>
<td>Mathematics and natural sciences</td>
<td>Learners use basic mathematics to solve mathematical equations at work and in everyday life. They use, for example, formulas, graphs, patterns and statistics to help solve work related assignments and problems. Students apply at work methods and practices that are based on the laws of physics and chemistry.</td>
</tr>
<tr>
<td>Technology and information technology</td>
<td>Learners make versatile use of technologies used in their profession. They consider the technological benefits, limitations and risks. They make versatile use of computer technology as professionals and citizens.</td>
</tr>
<tr>
<td>Active citizenship and different cultures</td>
<td>Learners participate constructively in the activities and decision-making of the community. They act according to their rights and responsibilities both at work and in everyday life. They observe the acts on equality. They act appropriately and considering the requirements of working life with people from different cultural backgrounds both at home and abroad.</td>
</tr>
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</table>
3. Assessment criteria

In the key competences for lifelong learning, four skills are to be demonstrated separately for 19 key competences: learning and problem solving, interaction and co-operation, vocational ethics and health, safety and functional capacity. Other key competences for lifelong learning have been included in the competence targets for common unit sections and the required vocational skills and assessment criteria for vocational units.

Four key competences are assessed separately:

(a) learning and problem solving,
(b) interaction and co-operation,
(c) vocational ethics, and
(d) health, safety and functional capacity.

Table 2. Assessment criteria for key competences in VET

<table>
<thead>
<tr>
<th></th>
<th>Assessment criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Satisfactory T1</td>
</tr>
<tr>
<td>Learning and problem-solving</td>
<td>make decisions under guidance</td>
</tr>
<tr>
<td></td>
<td>under guidance, assess their own activities and the progress of their work</td>
</tr>
<tr>
<td>Interaction and cooperation</td>
<td>under guidance, negotiate on cooperation with stakeholders</td>
</tr>
<tr>
<td>Vocational ethics</td>
<td>under guidance, comply with the values of all aspects of sustainable development when planning their enterprising activities</td>
</tr>
</tbody>
</table>
Other key competences are included in the competence targets for common unit sections, the required vocational skills and assessment criteria for vocational units.

4. Monitoring of upper secondary VET qualifications

The national VET qualifications monitoring has evaluated national core curricula in 2013, with particular regard to strengthening key competences for lifelong learning. The monitoring has been agreed by the Ministry of Education and Culture and the Finnish National Board of Education with the aim to determine how education providers and organisers of competence-based qualifications have implemented the reformed criteria, how much progress has been made in this implementation and how the targets of the reform have been achieved. The Finnish National Board of Education follows up the survey, covering provision of both Finnish- and Swedish-language programmes and qualifications. Information has been collected online from all education and competence-based qualifications’ providers. A total of 108 upper secondary VET providers (91.5%) responded to the questionnaire.

The monitoring showed an integration of all key competences for lifelong learning into instruction, vocational skills demonstrations (2) and competence tests; facilitation of competences related to entrepreneurship; integration of the principles of sustainable development (economic, social, cultural and ecological) into VET and competence-based qualifications; and strengthening competences that promote health, safety and functional capacity. According to the education and competence-based qualifications’ providers, the integration of key competences for lifelong learning in instruction, vocational skills demonstrations and competence tests was handled well.

(2) Skills test organised during the in-company training. It shows whether learners have achieved outcomes defined in the national qualification requirements. Skills demonstrations are assessed by experts and teachers.
According to the qualification-specific questionnaire, the key competences for lifelong learning were, in most cases, integrated into both vocational units and core subjects. However, the qualification-specific questionnaire revealed differences in the integration of key competences for lifelong learning into vocational skills demonstrations. In most cases, the providers had integrated learning and problem-solving, interaction and cooperation, and health, safety and functional capacity into the demonstrations. Active citizenship and different cultures were most seldom integrated into the skills demonstrations.

Providers and organisers most commonly felt that they had integrated learning and problem-solving into instruction exceptionally well. Organisers of vocational skills demonstrations most commonly felt that they had succeeded exceptionally well in the integration of interaction and cooperation. According to the providers, the inclusion of key competences for lifelong learning in instruction was hindered by, among others, difficulties in naturally integrating key competences for lifelong learning into instruction situations and student motivation. In vocational skills demonstrations, the inclusion of key competences in lifelong learning was most hindered by the fact that skills could not be naturally displayed in a demonstration, which focuses on the actual performance of a work task.

5. Vocational competences in the assessment of learning outcomes

Since 2006, the assessment of learning outcomes in upper secondary VET has been based on vocational skills demonstrations. Before April 2014, a unit of the Finnish National Board of Education was responsible for the assessment, when the Finnish Education Evaluation Centre took over. The assessment has covered approximately 75% of VET learners.

The assessment is formative in nature, with an emphasis placed on the active participation and interactivity of education providers. Data on the activities of educational institutions is gathered without any nationally standardised tests. The formative nature of assessment can also be seen in the self-assessment conducted by education providers and feedback reports submitted to them, based on which the providers can compare their own outcomes with national outcomes. Providers also receive a feedback report based on the assessment conducted.

The assessment of learning outcomes is based on vocational skills demonstrations, and therefore focuses on vocational competence. The competence requirements and assessment criteria set for VET in the qualification requirements serve as the basis for assessment. Consequently, qualification requirements play a key role as a basis for assessment. In assessment, attention is given to whether students have achieved the outcomes specified in national qualification requirements as measured by vocational
skills demonstrations. In addition to targets related to vocational competence, the general targets concerning vocational skills demonstration targets are specified in legislation and form the basis for assessment. The most important of these are related to ensuring the quality of VET, its working life orientation and standardisation of student assessment.

6. Social and communicative competencies in upper secondary VET

The SOVITELLEN report (Social and communicative competencies in VET) evaluated the social and communicative competences provided at upper secondary VET level which are required in working life. The evaluation data provided information on social skills, communicative competences, learning-to-learn skills, and competencies related to entrepreneurship. The evaluation focused on upper secondary VET aimed at both youths and adults, including apprenticeship training and special needs education. The objective of the evaluation was to promote the development of curricular and pedagogical practices related to these competences and, in general, to better take these aspects into account in upper secondary VET.

The apprenticeship training outcomes showed a poorer performance than those of others in all competence areas. This poorer performance can be attributed to several factors:

(a) learning occurs primarily on the job;
(b) educational institutions mainly provide strictly theoretical instruction;
(c) social and communicative competence targets have not been personalised;
(d) the student is assumed to already possess these competences when employed.

The problem is that, in many cases, the responsibility for social and communicative competences is shifted to working life. This is evident in apprenticeship training.

The evaluation has focused on social and communicative competences required in working life, thus emphasising their importance as part of vocational studies. In addition to vocational studies, the competences in question are also part of common core studies. Although integration into vocational competences is emphasised in some qualifications, social and communicative competences and their development are included in written and realised curricula more into common core studies than vocational studies. This tends to support the concept of professionalism, in which professional skills and lifelong learning skills are separate from one another.

On-the-job learning, vocational skills demonstrations and competence-based qualifications have played a key role in the development of working life relationships. Social and communicative competences are central in connection with on-the-job
learning and vocational skills demonstrations, where particular emphasis is given to guidance and feedback.

In self-evaluations, many providers and qualifications list activities related to social and communicative competences as a key area of development. One of the most important issues raised was how social and communicative competences are, as a rule, learned and how they are taught. A crucial question was also whether they should be taught separately or integrated into vocational studies and working life contexts. Teaching social and communicative competences separately from other studies raises their profile, but it does not guarantee their translation into a working life context. Correspondingly, the integration aspect promotes this translation to working life, even if it might blur the understanding of their targets, content and competences. The integration aspect requires that both teachers and working place instructors and trainers possess a deep understanding and the pedagogical skills needed for integration.

Qualification-specific groups had various ideas of how to include entrepreneurship in upper secondary VET. Entrepreneurship was seen as being primarily a competence area. While it was considered a key competence area, the opinion was that learners were too young and inexperienced to study entrepreneurship. There was a particular desire to clarify the principles and goals related to entrepreneurship and develop operational approaches. Studies in entrepreneurship were thought to be better suited to adult education in the form of further and continuing education.

7. Examples of field-specific learning outcomes assessments

The assessment of learning outcomes in the field of construction focused on key competences for lifelong learning in vocational skills' demonstrations. The assessments conducted by education providers varied significantly. As stated in the qualification requirements, vocational skills demonstrations in the field of construction place a special emphasis on health and safety as well as on learning and problem-solving. Other areas, such as interaction and co-operation as well as vocational ethics and sustainable development, were not emphasised in vocational skills demonstrations at all.

Key competences and their assessment were integrated, particularly in core subjects. A content analysis of qualification requirements also showed that assessments in vocational units were primarily conducted for competences in health, occupational safety and functional capacity (occupational safety) as well as, to a certain extent, learning and problem-solving.
According to their grades, students had a strong command of key competences for lifelong learning, even if the assessment focused primarily on health and occupational safety. The field of construction has a large number of occupational safety regulations, and the importance of their study is effectively communicated in the education. Conversely, vocational ethics and interaction and co-operation were given very little emphasis in vocational skills demonstrations. In the view of the assessment group, far too little emphasis was given to sustainable development, initiative and entrepreneurship in vocational skills demonstrations in the field of construction.

Assessment of learning outcomes in forestry showed that various areas of lifelong learning, with particular regard to competences in health, safety and ability to function, interaction and co-operation, sustainable development, technology and information technology, and initiative and entrepreneurship, were given a rather broad emphasis. Conversely, other areas, such as aesthetics, active citizenship, communications and media skills, were given very little emphasis in vocational skills demonstrations.

Learning outcome assessments for both the Vocational Qualification in Food Production and Vocational Qualification in Surface Treatment Technology showed that students had a strong command of key competences for lifelong learning.

8. Example of a VET programme at upper secondary level that ensures acquisition of a key competence

8.1. Entrepreneurship as a key competence in upper secondary VET

The aim of strengthening key competences for lifelong learning is to give attention to entrepreneurship and to promote ecologically, socially, economically and culturally sustainable development. The importance of entrepreneurship in upper secondary VET is emphasised in the 2015 criteria. As stated in the education ministry’s 2011-16 development plan ‘measures will be taken at all levels to increase education on the rights and duties of the citizen, the employee and the entrepreneur’. All qualifications will include vocational skill requirements related to competences and skills in entrepreneurship, which will be included either in unit targets or as a separate unit. At least five credits for competence in entrepreneurship will be included in each upper secondary VET qualification in a manner that is natural for the qualification in question. Competence in entrepreneurship can be more broadly included in a qualification as either compulsory or optional unit, provided that it is justified in terms of meeting the needs of working life.

In vocational units, entrepreneurship can be an optional unit called ‘Planning of entrepreneurial activities’ or an optional unit called ‘Working in an enterprise’.
Entrepreneurship can also be studied as a theme inside of field-specific vocational module as well as it can be part of vocational skills requirements or assessment criteria.

Entrepreneurship is also one of the key competences for lifelong learning; ‘initiative and entrepreneurship’, which is integrated into (one of the four) common unit sections: ‘entrepreneurship and business’.

The aim is to promote learners’ achievement of set targets through their efforts as well as take initiative and act in a customer-oriented manner as an employee and/or entrepreneur. Learners plan their activities and work toward achieving set targets. They work economically and productively, manage themselves, and know how to self-asses own work according to own-defined objectives.

8.2. Communication in a foreign language

Another example of acquiring key competences in lifelong learning in Finnish upper secondary VET is communication in a foreign language. As mentioned earlier in this article, foreign language studies are included in common units, in the communication and interaction section, which consists of a foreign language as well as mother tongue and the second national language.

The competence targets for a foreign language and competence assessment are specified according to whether the language selected by the student is a foreign language starting in grades 1-6 of basic education, or a foreign language starting in grades 7-9 of basic education.

The learning outcome for a foreign language starting in grades 1-6 of basic education is that the students, upon graduation, will be able to communicate and interact to the extent that they can practise a profession and know how to use the foreign language necessary when performing tasks in their own field. Another target is that the students will be able to gather information from a variety of sources in a foreign language and are capable of functioning in a multilingual and multicultural environment. The competence targets for a foreign language starting in grades 7-9 of basic education are somewhat narrower than those set for a foreign language starting in grades 1-6 of basic education.

Within the communication and interaction section, the student may choose to complete more extensive optional language studies to learn how to communicate in a foreign language in working life situations as well as know how to act in a foreign language in a variety of interaction situations. The aim of optional language studies is also to learn how to write field-related texts in a foreign language as well as identify the meaning of a language and culture. In addition, the students will also learn how to further develop language learning strategies and their own learning methods.
8.3. **Digital competences**

Information and communication skills have been included in the mathematics and natural sciences section of the unit. This unit includes information and communication technology and its use as well as mathematics, physics and chemistry.

The primary aim is to learn how to make diverse use of the technologies relevant to their profession. They take the benefits, limitations and risk of technology into consideration in their work. They learn how to make diverse use of information technology in their profession and as citizens.

A compulsory competence target in information and communication technology is that the students know how to use the most common information and communication technology applications and make proper use of operating instructions and guides for these technologies. The students will also know how to protect their online identity and privacy. Furthermore, the students will learn how to act in accordance with copyright, data security and privacy guidelines and regulations as well as be familiar with various file storage and transmission methods.

The optional unit competence targets in information and communication technology are that the students will be able to familiarise themselves with various information technology applications, which can be used in their own vocational field, and know how to solve problems associated with the most common information and communication technology applications. The students will also learn how to adopt new information and communication technology devices and applications as well as work in digital media in order to develop and share their own competence. The aim is also for the students to know how to use digital materials in describing their own vocational growth and marketing their competence and vocational skill.

9. **Identification and recognition of prior learning**

Education providers and learners work together to draft an individual study plan, which is based on learner individual targets and choices. The individual study plan is updated throughout the learning process. The aim of the individual study plan is to support the student's own planning and self-guidance as well as commit and motivate learners for the entire duration of studies. The importance of the individual study plan is in providing guidance for the learning process, which is why it should serve as a functional tool for both students and teachers. It is used to monitor learning progress and learning assessment.

The individual study plan is an official document, which specifies the following:

(a) the student's individual choices, learning outcomes and study skills;
(b) acquisition methods and timing of competence;
(c) identification and recognition of prior learning and subsequent study progress;
(d) on-the-job learning, on-the-job learning places and times;
(e) learning methods, learning progress and learning assessment;
(f) competence assessment, including vocational skills demonstrations.

EU lifelong learning policies, which place an emphasis on the importance of identifying non-formal and informal learning, have been taken into consideration in the upper secondary VET qualification requirements.

Some of the vocational skills required in the upper secondary VET qualification are acquired outside the educational institution. On-the-job learning involves learning at workplace, in a real work environment. The qualification includes at least 30 competence points in on-the-job learning.

Prior learning does not mean that competence should have been acquired before graduating but rather that competence can be acquired during studies.

Conclusions

The criteria for upper secondary VET qualifications and national core curricula for preparatory instruction were reformed in 2008-10. The key objectives of the criteria reform were working life orientation, freedom of choice, flexibility and strengthening key competences for lifelong learning. In addition, the Finnish National Board of Education reformed the criteria for all upper secondary VET qualifications in 2014.

Key changes in the qualification criteria are related to strengthening the competence-based approach, freedom of choice and flexibility in providing education. All upper secondary VET qualifications and their units are based on competences. The major change is that the scope of qualifications and units in upper secondary VET now depends on the scope of competences as measured in competence points. Credits and a time-based approach have been eliminated, and competence has been brought to the forefront.

The 2014 reform changed also the common units in an effort to meet future competence needs. Their relative share has increased. Common units are extensive competence entities: competence of communication and interactive ability, mathematical and scientific competences, skills needed in society and the world of work, and social and cultural competences. The competence targets for all common unit sections have been examined. The outcomes set for equality, knowledge of working life rules, maintenance of working ability, information and communication technology skills and communication skills have been validated.

One of the primary aims of the upper secondary VET qualification reforms was to strengthen key competences for lifelong learning. Based on monitoring the composition of qualifications and the assessment of learning outcomes, this aim has been achieved.
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