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Table of contents

Introduction

The acquisition of all eight key competences is promoted at national level by the National Education Law (No 1/2011) that states that the competences are outcomes of primary and secondary education (Article 68). Key competences represent 'a combination of knowledge, skills, and attitudes that are considered necessary for personal fulfilment and development, active citizenship, social inclusion and employment' ([1]).

According to the National Education Law, the national assessment is oriented towards transdisciplinary testing of some competences: (a) communication in the mother tongue and in the foreign language at the end of 6th grade (age 12-13); (b) mathematics and sciences at the end of 6th grade (age 12-13); (c) mathematics and sciences at the end of 8th grade (age: 14-15); and (d) social and civic competences during the 8th grade (age: 14-15). Key competences have been approached in the national school curricula, including VET since 2004.

The European approach to key competences was integrated in the national curricula in Romania since 2008/09. The national school (core) curricula for all training pathways and profiles of secondary school, including technological schools promotes the European framework of key competences. Some examples are included in Annex 1.

In order to support policy implementation on key competences, guidelines for curriculum design and actualisation have been offered for public consultation ([2]).

The development of ICT competences is enforced by the National Strategy on the Digital Agenda for Romania 2020. ICT in education, health, culture and e-inclusion are action domains within the strategy. Provision of ICT infrastructure in schools (including VET) and the development of digital skills of the students and teachers are the main measures ([3]).

([1]) Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning (2006/962/EC), Official Journal of the European Union, L 394, 30.12.2006 on key competences for lifelong learning (OJ L 394, 30.12.2006).

([2]) http://www.ise.ro/minutele-atelierelor-de-consultare-document-de-politici-educationale-in-domeniul-curriculumului

([3]) The Ministry for Informational Society, National Strategy on the Digital Agenda for Romania 2020, 2015. https://ec.europa.eu/epale/ro/resource-centre/content/strategia-nationala-privind-agenda-digitala-pentru-romania

A strategy for the development of the small and medium size enterprises Horizon 2020 (859/2014) ([4]) supports and promotes entrepreneurship by developing entrepreneurship education at all levels.

Key competences are not explicitly included in national qualifications framework's level descriptors but are addressed through learning outcomes descriptors; they have since long been part of VET curricula as subject areas and cross-curricula objectives/learning outcomes. Key competences are also reflected in major policy initiatives (national lifelong learning strategy 2015-20 ([5]), national strategy combatting early leaving from education 2015 ([6])) and second chance programmes. The VET strategy 2016-20 (2016) focuses on creativity, entrepreneurship and career management skills development.

Lifelong learning centres (founded according to the National Education Law) offer adults the possibility to update key competences, guidance and counselling and validation of non-formal and informal learning.

The renewal of VET curricula (with the ESF support) has focused on integrating the EU-key competences and other transversal competences.

Key competences may be partly assessed through centralised school leaving exams (baccalaureate) including VET; this approach is implemented since long time with the aim to ensure quality and equal assessment standards. It covers mother tongue (for all graduates), foreign languages and maths, depending on the domain and qualification. Key competences are also assessed through international assessment programmes (PISA). Another assessment is ensured through the qualification certification exams organised for EQF level 3 and 4 qualifications in initial VET.

Traditionally, one to two foreign languages have been mandatory in VET, varying by study field; levels to be achieved are based on the Common European Framework of Reference for Languages.

Training firms, as a method to promote entrepreneurship and other transversal skills (team work, problem solving, etc.) are compulsory for service training programmes in upper secondary technological schools (commerce and tourism programmes since 2005) and optional for other initial VET programmes. They are included in initial VET curricula. In 2015, ESF supported about 4 000 training firms that were registered at the Romanian training firms centre.

([4]) http://www.dreptonline.ro/legislatie/hg_859_2014_strategia_dezvoltarea_sectorului_intreprinderilor_mici_mijlocii_imbunatatirea_mediului_afaceri_Romania_Orizont_2020.php

([5]) http://www.edu.ro/index.php/articles/23305

([6]) http://www.edu.ro/index.php/articles/23306

Junior achievement companies exist as extra-curricular or integrated activities in social sciences. VET teacher training programmes provided especially through SOPHRD projects (2008-13) focused on learning outcomes, with specific provision on entrepreneurship, ICT and competence evaluation. Learning materials and guidelines were developed to support them. An ESF-funded project was implemented in the initial VET with the aim to develop a collaborative network of 96 (out of approximately 1300) secondary VET schools for best practices exchange. Career management skills are an important part of initial and continuing VET. Since 2012, a cooperation project (between the Romanian Ministry of Education and the Zurich Pedagogic University) is implemented in 137 schools (including upper and post-secondary VET) to improve teacher competences of training students career management skills and creativity.

The counselling and guidance curricula for public VET schools (grades 9, 10 and 11) integrate career management skills and highlight the role of counselling and guidance in preparing VET students for the labour market ([7]).

Work-based learning and business experience is a crucial part of VET. While more VET schools provide work experience in cooperation with the industry, key competences are part of their training programmes. Second chance education also addresses basic skills' deficit.

1. Key competence: communication in mother tongue

The acquisition of the key competence at upper secondary VET is promoted at national/regional level	Yes
How is it promoted?	
• national/regional policy document(s)	No
• national/regional law(s), regulation(s)	Communication in mother tongue is mentioned as key competence in the National education law No 1/2011. Article 68 states that 'the national curriculum for primary and lower secondary education is based on eight domains of key competences which determine student education profile. […] High-school is based on developing and diversifying the key competences and forming the specific competences based on pathway, profile, specialisation or qualification'.
• national/regional curricula, standards and qualifications	Communication in the mother tongue is a general subject included in the curriculum for all education and training

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([7]) Education Ministry order No 4437/2014. More information in Romanian: http://programe.ise.ro/Portals/1/Curriculum/2014-progr/2014-10/Programa_Consiliere%20si%20orientare.pdf

	pathways (Romanian language and literature) with 3-4 hours per week. In a specialised curriculum for VET qualifications, communication in the mother tongue is approached in the professional context (communication and numeracy) and is provided, for example, through the module professional communication in the 9th grade of economic high-school in the school-based curriculum.
• training VET teachers trainers	4% VET teachers were trained in the ESF project POSDRU to expand the modern interactive method of training firms in 2010-13. The training firm activities require the use of elementary communications competences (greetings, request/exchange of personal date, introducing oneself, etc.), social competences and professional language specific to the field. Currently, the method expanded to approx. 4 500 training firms, created in service colleges, but also in extracurricular activities supported through projects.
• centralised assessment of the key competence in VET	Romanian language and literature is part of the national examination (baccalaureate). Communication and numeracy competence in profile qualifications is assessed through the qualification certification examination.
• other instruments (e.g. ways of working, teaching/learning methods)	For service qualifications, the method training firm is integrated in three modules: in 11th grade (operational planning, business marketing and human resources) and in another three modules in 12th grade (business negotiation, business financing and competitive environment). The SOPHRD project has developed a training firm guide for VET teachers http://firmaexercitiu.tvet.ro/index.php/achizitii
The progress of improving key competence levels/learning outcomes among upper secondary VET students is monitored	Yes, the competence for reading and lecture
How is it monitored?	
• through international or national statistical data	No
• survey(s)	PISA surveys 2006, 2009, 2012, 2015
• benchmark(s)	No
• other instrument(s)	No
Key competence level improved among upper secondary VET students since (+/-) 2010	Yes, the share of 15 years old learners (including VET) with low reading and speaking skills decreased from 40.4% in 2009 to 37.3% in 2012 [a]

(*)   *Education and training monitor*, 2014. http://ec.europa.eu/education/library/publications/monitor14_en.pdf

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

VET standards in the study field 'services' promote professional communication in the mother tongue competence. Students learn how to:

(a) make convincing and interesting presentations on professional topics for different target groups; organise information logically and concisely;

(b) moderate debates and meetings (prepare a debate and / or meetings on a specific theme, participate in a discussion and/ or meeting on a specific theme, express opinions and ideas with mutual respect, brief presentation of the content, conclusions, decisions and actions);

(c) prepare documents on professional topics, write clearly and accurately, check against criteria).

The competences are offered in VET programmes at NQF level 4 (for example, in tourism: administrator, economist, contract specialist; in hotel services: commerce, gastronomy, event organiser) but also in service programmes that comprise the training firm method (integrating entrepreneurship, communication in mother tongue and foreign languages, digital skills and transversal skills).

2. Key competence: communication in foreign languages

The acquisition of the key competence at upper secondary VET is promoted at national/regional level	Yes
How is it promoted?	
• national/regional policy document(s)	No
• national/regional law(s), regulation(s)	Communication in foreign languages is mentioned as key competence in the National Education Law No 1/2011. Article 68 states that 'the national curriculum for primary and lower secondary education is based on eight domains of key competences which determine student education profile. […] High-school is based on developing and diversifying the key competences and forming the specific competences based on pathway, profile, specialisation or qualification'.
• national/regional curricula, standards and qualifications	Communication in foreign languages is included in the national curriculum. One or two foreign languages are studied 1-2 hours per week. The national curriculum is based on CERF. Communication in foreign languages is also a key competence in the training standards for VET qualifications.
• training VET teachers trainers	No
• centralised assessment of the key competence in VET	Communication in foreign languages is assessed through the centralised compulsory competence examination of the baccalaureate.
• other instruments (e.g. ways of working, teaching/learning methods)	No
The progress of improving key competence levels/learning outcomes among upper secondary VET students is monitored	No

How is it monitored?	
• through international or national statistical data	No
• survey(s)	No
• benchmark(s)	No
• other instrument(s)	No
Key competence level improved among upper secondary VET students since (+/-) 2010	No data

3. Key competence: competences in maths, science and technology

The acquisition of the key competence at upper secondary VET is promoted at national/regional level	Yes
How is it promoted?	
• national/regional policy document(s)	No
• national/regional law(s), regulation(s)	Mathematics, sciences and technologies are mentioned as key competences in the National education law No 1/2011. Article 68 states that 'the national curriculum for primary and lower secondary education is based on eight domains of key competences which determine student education profile. […] High-school is based on developing and diversifying the key competences and forming the specific competences based on pathway, profile, specialisation or qualification'.
• national/regional curricula, standards and qualifications	Mathematics and sciences (physics, chemistry and biology) are part of the national curriculum in upper secondary VET. The technologies are part of the specialised curriculum in upper secondary VET in the school-based curriculum but also in work-based learning (training in companies).
• training VET teachers trainers	Initial and continuing VET teacher training has been updated in the last five years with the use of ESF. The SOPHRD teachers training project in the field of professional competence evaluation offered learner competence evaluation training to 4% VET teachers. Four new teacher training programmes were developed: evaluator of professional competences, trainer for professional competence evaluation, developer of evaluation tools and programmes, and trainer for internal and external monitoring of evaluation. The programmes are provided to VET and science (physics, chemistry) teachers in 'teacher houses' (education providers involved in continuous teacher training) after the end of the project. The teachers/ trainers introduce more practical approach in training, focus on competences and develop evaluation instruments.

• centralised assessment of the key competence in VET	Mathematics in upper secondary VET is assessed through the compulsory national examination included in the baccalaureate. Tests in sciences are optional. Technologies are assessed through the qualification certification examination based on training standards specific to VET qualifications.
• other instruments (e.g. ways of working, teaching/learning methods)	Practical training methods are promoted through the training courses, using student-centred learning.
The progress of improving key competence levels/learning outcomes among upper secondary VET students is monitored	Yes
How is it monitored?	
• through international or national statistical data	No
• survey(s)	PISA surveys 2006, 2009, 2012, 2015
• benchmark(s)	No
• other instrument(s)	No
Key competence level improved among upper secondary VET students since (+/-) 2010	Yes. Achievements in mathematics and sciences of 15 years old learners (including VET) are monitored through PISA (2006, 2009 and 2012). The share of learners with low achievements in maths decreased from 52.7% in 2006 to 40.8% in 2012; in sciences –from 46.9% in 2006 to 37.3% in 2012 (*).

(*) *Education and training monitor*, 2014. http://ec.europa.eu/education/library/publications/monitor14_en.pdf

4. Key competence: digital competence

The title(s) in the national context	Digital competence for using information technology as instrument for learning and knowledge
The acquisition of the key competence at upper secondary VET is promoted at national/regional level	Yes
How is it promoted?	
• national/regional policy document(s)	The National Strategy for the Digital Agenda for Romania 2020 refers to education.
• national/regional law(s), regulation(s)	Digital competence for using information technology as instrument for learning and knowledge are mentioned as key competence in the National education law No 1/2011. Article 68 states that 'the national curriculum for primary and lower secondary education is based on eight domains of key competences which determine student education profile. […] High-school is based on developing and diversifying the key competences and forming the specific competences based on pathway, profile, specialisation or qualification'. The Law of National Education also complements the digital strategy (2020) with specific measures, for example, provision of equipment to schools, inclusion ICT in the curriculum at

	national level and introduction of digital competence as compulsory examination in the baccalaureate exam.
	To ensure transparency and comparability of digital competence levels acquired by pupils in Romania and certified through the National baccalaureate exam, the Ministry of Education decided to allow the examination/evaluation to be based on European recognised levels included in the European Computer Driving Licence.
• national/regional curricula, standards and qualifications	Information and communication technology (ICT) is a compulsory part of the national curriculum in upper secondary VET. It is provided through stand-alone subjects or integrated modules. ICT is also part of the specialised curriculum in upper secondary VET.
• training VET teachers trainers	ESF project 'Vocational and technical training in the field of ICT' has developed qualifications (training standards), curriculum, teaching materials and evaluation guidelines for a number of professional qualifications in the field (EQF levels 3, 4 and 5) and introduced contents from Cisco Networking Academy (NetAcad) in continuous teacher training.
• centralised assessment of the key competence in VET	Digital competence is assessed in the compulsory examination included in the baccalaureate. Professional digital competences are assessed through the qualification certification examination based on training standards.
• other instruments (e.g. ways of working, teaching/learning methods)	The 'Vocational and technical training in the field of ICT' project developed 84 teaching materials for teachers, 84 learning materials for students and 168 assessment instruments for eight VET qualifications at upper secondary level.
	The curriculum and the developed materials included contents from Cisco Networking Academy (NetAcad). All the materials are promoting student centred learning and practical evaluation through examples.
The progress of improving key competence levels/learning outcomes among upper secondary VET students is monitored	No
How is it monitored?	
• through international or national statistical data	No
• survey(s)	No
• benchmark(s)	No
• other instrument(s)	No
Key competence level improved among upper secondary VET students since (+/-) 2010	No data

5. Key competence: learning to learn

The acquisition of the key competence at upper secondary VET is promoted at national/regional level	Yes
How is it promoted?	
• national/regional policy document(s)	No
• national/regional law(s), regulation(s)	Article 68 of the National education law No 1/2011 promotes learning to learn as a key competence in all education programmes, including VET.
• national/regional curricula, standards and qualifications	The key competence learning to learn is promoted in the curricula of the disciplines included in the curricular areas 'person and society', 'guidance and counselling' and 'language and communication'. For example, the curriculum of the following disciplines taught in the technological high-schools refers to the learning to learn competence: • logic, argumentation and communication: school curriculum for the 9th grade, technological high-school, approved through the order of the Education Ministry No 5099/09.09.2009; • religion: school curriculum for the 9-12th grades, technological high-school, approved through the order of the Education Ministry No 5230 /01.09.2008. The learning to learn competence is promoted also in the curricula of counselling and guidance for vocational schools, grades 9, 10 and 11, approved by the Education Ministry's order No 4437/2014.
• training VET teachers trainers	No
• centralised assessment of the key competence in VET	No
• other instruments (e.g. ways of working, teaching/learning methods)	No
The progress of improving key competence levels/learning outcomes among upper secondary VET students is monitored	No
How is it monitored?	
• through international or national statistical data	No
• survey(s)	No
• benchmark(s)	No
• other instrument(s)	No
Key competence level improved among upper secondary VET students since (+/-) 2010	No data

6. Key competence: interpersonal, intercultural and social competences, and civic competence

The title(s) in the national context (if different)	Social and civic competence
The acquisition of the key competence at upper secondary VET is promoted at national/regional level	Yes
How is it promoted?	
• national/regional policy document(s)	No
• national/regional law(s), regulation(s)	Social and civic competence is mentioned as key competence in the National education law No 1/2011 Article 68 states that 'the national curriculum for primary and lower secondary education is based on eight domains of key competences which determine student education profile. […] High-school is based on developing and diversifying the key competences and forming the specific competences based on pathway, profile, specialisation or qualification'.
• national/regional curricula, standards and qualifications	The social and civic competences are promoted in the curricula of the disciplines included in the curricular area person and society. For example, the curriculum of the following disciplines taught in the technological high-schools refers to the social and civic competences: • history: school curriculum for the 11th, 12th and 10th grade, technological high school, Education Ministry order No 5099/ 09.09.2009 • logic, argumentation and communication: school curriculum for the 9th grade, technological high school, Education Ministry order No 5099/09.09.2009 • religion: school curriculum for the 9-12th grades, technological high school, Education Ministry order No 5230 /01.09.2008; the education is school based.
• training VET teachers trainers	No
• centralised assessment of the key competence in VET	No
• other instruments (e.g. ways of working, teaching/learning methods)	No
The progress of improving key competence levels/learning outcomes among upper secondary VET students is monitored	No
How is it monitored?	
• through international or national statistical data	No
• survey(s)	No
• benchmark(s)	No

• other instrument(s)	No
Key competence level improved among upper secondary VET students since (+/-) 2010	No data

An example of a VET programme at upper secondary level that ensures acquisition of the key competence

In 2012, the Education Ministry in partnership with the Pedagogic University from Zurich are implementing a project for students in secondary education. The Jobs (Job Orientation in Businesses and Schools) opens world of work to learners through teaching and learning.

The project combines two elements: integration in the labour market and schooling. It intends to develop the instruments, competences and measures to develop a better system to prepare Romanian students in compulsory education, lower and upper secondary schools, to become acquainted with the real working world. At the same time, they learn to recognise their own strengths and competences. By visiting businesses, administrations and public institutions they see what skilled workers and graduates do. It is then up to the students to collect information about job offers nearby and the requirements for different kinds of occupations. The project is also a good practice for students to learn how to present themselves successfully to potential employers.

In order to achieve this goal, a new cross-curricular approach, adequate teaching and learning methods, seven booklets and a toolbox for students were introduced. The project provides corresponding support for teachers in terms of training, coaching and continuous information exchange via a distance-learning platform. The teachers involved not only teach the subject, but also actively support and advise the students in performing the tasks defined by the project.

By end-2015, 133 schools (gymnasiums and VET schools/ colleges) were involved in the project, about 450 teachers were trained and 4000 students developed these (interpersonal, intercultural, social, civic and entrepreneurship) competences.

7. Key competence: entrepreneurship

The acquisition of the key competence at upper secondary VET is promoted at national/regional level	Yes
How is it promoted?	
• national/regional policy document(s)	VET strategy (2016) promotes entrepreneurship. SME development strategy refers to promoting entrepreneurship in education and training.
• national/regional law(s), regulation(s)	Entrepreneurial competences are mentioned as key competence in the National education law no.1/2011. Article 68 states that 'the national curriculum for primary and lower secondary education is based on eight domains of key competences which determine student education profile. […] High-school is based on developing and diversifying the key competences and forming the specific competences based on pathway, profile, specialisation or qualification'.
• national/regional curricula, standards and qualifications	Entrepreneurship is mentioned as a key competence in all initial VET standards since 2006. The standards include transversal/ key competences as problem solving, team work, etc. It is promoted as a stand-alone or integrated competence.
• training VET teachers trainers	4% teachers were trained in the ESF project supporting interactive method of training firms. Currently, the method expanded to approx. 4 500 training firms, created in 2015 included in curriculum but also as extra curriculum activities supported through projects.
• centralised assessment of the key competence in VET	The key competence is assessed together with other learning outcomes in the certification exams.
• other instruments (e.g. ways of working, teaching/learning methods)	Training standards for the qualifications in the services profile comprise the training firm method in three modules: in the 11th grade (operational planning, business marketing and human resources) and in another three modules in the 12th grade (business negotiation, business financing and competitive environment). The SOPHRD project has developed a training firm guide for VET teachers http://firmaexercitiu.tvet.ro/index.php/achizitii
The progress of improving key competence levels/learning outcomes among upper secondary VET students is monitored	No
How is it monitored?	
• through international or national statistical data	No
• survey(s)	No
• benchmark(s)	No
• other instrument(s)	No
Key competence level improved among upper secondary VET students since (+/-) 2010	No data

8. Key competence: cultural expression

The title(s) in the national context (if different)	Awareness and cultural expression
The acquisition of the key competence at upper secondary VET is promoted at national/regional level	Yes
How is it promoted?	
• national/regional policy document(s)	No
• national/regional law(s), regulation(s)	Awareness and cultural expression is mentioned as key competence in the National education law no.1/2011. Article 68 states that 'the national curriculum for primary and lower secondary education is based on eight domains of key competences which determine student education profile. […] High-school is based on developing and diversifying the key competences and forming the specific competences based on pathway, profile, specialisation or qualification'.
• national/regional curricula, standards and qualifications	The disciplines from the curricular area arts are not included in the framework-curriculum of the technological high schools. However, the curriculum of the some disciplines taught in the technological high schools refer to the key competence awareness and cultural expression: • Romanian language and literature: school curriculum for the 9-10th grades, technological high school, Education Ministry's order No 5099/09.09.2009; • religion: school curriculum for the 9-12th grades, technological high school, Education Ministry's order No 5230 /01.09.2008. From 2017/17, the revised training standards for initial VET programmes integrate cultural expression in specialised competences in the school-based curricula.
• training VET teachers trainers	No
• centralised assessment of the key competence in VET	No
• other instruments (e.g. ways of working, teaching/learning methods)	No
The progress of improving key competence levels/learning outcomes among upper secondary VET students is monitored	No
How is it monitored?	
• through international or national statistical data	No
• survey(s)	No
• benchmark(s)	No
• other instrument(s)	No
Key competence level improved among upper secondary VET students since (+/-) 2010	No data

Conclusions

The national school curriculum (including VET) is currently under revision. According to the National education law (no.1/2011) that defines outcomes of primary and secondary education, the entire process of teaching, learning and evaluation should integrate key competences. Challenges are related to initial and continuous training of teachers, so they can help pupils acquire the eight key competences and teach using interactive student-centred methods (role plays, problem-solving, analysis of a situation and informed-decision making, reflexive thinking and finding solutions to self-improving performance).

In the last five years an important progress was made in promoting key competences in VET. The National education law no.1/2011 promotes this. Amendments of the law are envisaged to allow increasing the VET quality and relevance. ESF projects revise the curriculum (based on the training standards revision) and train VET teachers who put in place the new curriculum.

The main developments concerning the integration of key competences in the curriculum for secondary VET refer to 1) an aggregated approach of key competences with general/ specialised professional competences, 2) a modular approach (for entrepreneurship education, guidance and counselling, etc.), and 3) an integrated approach of the key competences evaluation in professional context.

The main challenges to develop further the key competences in VET are:

(a) appropriate initial and continuous teacher training for ensuring key competences teaching and learning;
(b) well-designed learning materials
(c) development of evaluation tools;
(d) ensuring continuous development of key competences in parallel with developing work based learning.