Co-funded by the
Erasmus+ Programme
of the European Union

DISCVET_ DEVELOPMENT OF THE DIGITAL SOVEREIGNTY COMPETENCES OF VET TEACHERS AND TRAINERS

DiSCVET

IO1: DIGITAL SOVEREIGNTY COMPETENCES FRAMEWORK

BBB Bundesverband der Träger beruflicher Bildung (Bildungsverband) e. V.
Germany

MUNDUS Bulgaria
Bulgaria

Greece

VERNIAN rti
Cyprus

Slovenia

BK·CON
Germany

petit pas aps
Italy

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1. Definitions

In this document we shall adopt the following definitions:

- ***EQF (European Qualifications Framework)[1],*** Learning outcomes-based classification system for all types of qualifications, which aims to help in comparing national qualifications systems, frameworks and their levels to make qualifications more understandable and portable across different countries and systems in Europe,
- ***Knowledge[2]*** means the outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study. In the context of the European Qualifications Framework, knowledge is described as theoretical and/or factual;
- ***Skills[3]*** means the ability to apply knowledge and use know-how to complete tasks and solve problems. In the context of the European Qualifications Framework, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments);
- ***Competence[4]*** means the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development. In the context of the European Qualifications Framework, competence is described in terms of responsibility and autonomy.
- ***Key competences[5]***, Those which all individuals need for personal fulfilment and development, employability, social inclusion, sustainable lifestyle, successful life in peaceful societies, health-conscious life management and active citizenship. They are developed in a lifelong learning perspective, from early childhood throughout adult life, and through formal, non-formal and informal learning in all contexts, including family, school, workplace, neighbourhood and other
- ***Qualification[6]*** means a formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards;

[1] https://europa.eu/europass/en/european-qualifications-framework-eqf
[2] https://www.cedefop.europa.eu/files/4117_en.pdf
[3] *ESCOpedia*: https://ec.europa.eu/esco/portal/escopedia/Skill
[4] Based on EQF - ESCOpedia: https://ec.europa.eu/esco/portal/escopedia/Competence
[5] Council Recommendation, 2018/C 189/01 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018H0604(01)&from=EN
[6] *ESCOpedia*: https://ec.europa.eu/esco/portal/escopedia/Qualification#:~:text=As%20defined%20in%20the%20European,learning%20outcomes%20to%20given%20standards.

- A ***learning outcome***[7] is a statement of what a learner knows, understands and is able to do on completion of a learning process, which is defined in terms of knowledge, skills and competence.
- ***Digital education***[8]***,*** Denotes two aspects: 1) the **development of digital competences** relevant to learners and teachers, and 2) the **pedagogical use of digital technologies** to support, improve and transform learning and teaching.
- ***Digital literacy***[9]***,*** pertains to, among other, the ability to articulate and search for data online, analyse them and critically evaluate as well as to manage, organise and store data and information.
- ***E-learning***[10]***,*** referring to learning supported by information and communication technologies.

[7] EQF Recommendation: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008:111:0001:0007:EN:PDF
[8] Digital Education action Plan 2021-2027
[9] Cedefop's Glossary p.59
[10] https://www.cedefop.europa.eu/files/4117_en.pdf

2. Introduction

Part of project **Development of the Digital Sovereignty Competences of VET teachers and trainers (DiSCVET)** (project number 2020-1-DE02-KA226-VET-008261), funded by Erasmus Plus under the Vocational education and training sector, is the preparation of intellectual output with topic ´**VET teachers/trainers Digital Sovereignty Competences Framework**´. Partner countries for the project are Germany, Greece, Italy, Cyprus, Slovenia and Bulgaria.

The closure of VET schools due to the pandemic and the absence of thousands of learners from their regular classes required a rapid transition to e-learning to maintain the continuity of education. Yet the challenges to implementing e-learning across the education system were numerous, including lack of a digital infrastructure for this unprecedented transformation and teachers' lack of knowledge, skills and competencies for advancing e-learning.

The current document describes the transfer of Competences from several different competence framework structures, resulting to a selection of the features and practical functionalities that are most suitable for the formulation of a Digital Sovereignty Framework. There are numerous frameworks available across Europe and globally describing competences, each created and driven by different reasons and designed to address different specific issues. For the purpose of our project, we considered five systems, each of them being somehow related to our goals. It will draw heavily from e-CF and the DigComp Framework, as it looks to align itself with the DigComp2 Framework (which will also support long-term exploitation and sustainability), as an additional, target group specific competence framework. The framework will be designed in an accessible way for the specific stakeholders the consortium intends to both pilot it with and also to maximize exploitation, leading to longer term impact and the sustainability of the competence frameworks.

The result is a summarized and analyzed report in relation to the main Digital Competences Frameworks.

Within this context, in the following chapters, the discussed topics are:

- The approach of the e-competence Framework (e-cf).
- The approach of the DigiComp Framework 2 (DigiComp2).
- Which of the identified Digital Sovereignty and cyber security skills are a compulsory element for VET teacher/trainers to perform effectively in the e-learning environment within the Covid19 pandemic?
- Which level of possession per skill / competence are needed in order to provide a learning experience that is equivalent to the in-class training?

3. The European e-Competence Framework (e-CF) – version 3

The European e-Competence Framework (e-CF) version 3.0 provides a reference of 40 competences as required and applied at the Information and Communication Technology (ICT) workplace, using a common language for competences, skills and capability levels that can be understood across Europe. As the first sector-specific implementation of the European Qualifications Framework (EQF), the e-CF was created for application by ICT service, user and supply companies, for managers and human resource (HR) departments, for education institutions and training bodies including higher education, for market watchers and policy makers, and other organisations in public and private sectors.

The e-CF was designed for any person or organisation dealing with IT skills and competence planning, creation and/ or development. It was initially developed by the European IT business community, but it also addresses the needs of IT educational institutions and other European stakeholders.

The definitions of competences and levels are mainly generics, and for example do not deal with technical tools, but the ability to perform working issues. It does not matter if a software is used or not, what is important for example for a VET teacher is to design an on line training programme, to develop online training material for the organization, supporting and enhancing upskilling of learners.

The e-CF framework is the most popular competence framework in Europe as big effort from European Commission DG Industry supported its design, implementation and testing through several projects. As a consequence of its development, some organizations developed different online tools (e-Competence Quality Self-Assessment Tool; CEPIS; European e-Competence Framework), mainly focused on the self-assessment of ICT user competences and skills. Nevertheless, these online tools do not offer any link to training institutions that recommend training paths for the identified gaps between the candidate's profile and the target professional profile he/she chose. The connection to competence certifications is also missed as well as the correspondence to other frameworks or references, excepting the EQF[11].

[11] Fernandez-Sanz, Luis & Gómez, Josefa & Castillo Martínez, Ana. (2018). Analysis of the European ICT Competence Frameworks. 10.4018/978-1-5225-5297-0.ch012.
Available here:
https://www.researchgate.net/publication/323167135_Analysis_of_the_European_ICT_Competence_Frameworks/citation/download

In the e-CF terms are quite generic to be used in all professions. It has to be done using generic descriptions related to cultural functions, so from a role profile to another we can use the same descriptor (for the levels for example) if a more specific descriptor does not give an added value. The level required by job market can be different even though the descriptors are similar. The e-Cult role profiles adapted the e-Competences Framework to the specific field of e-Culture.

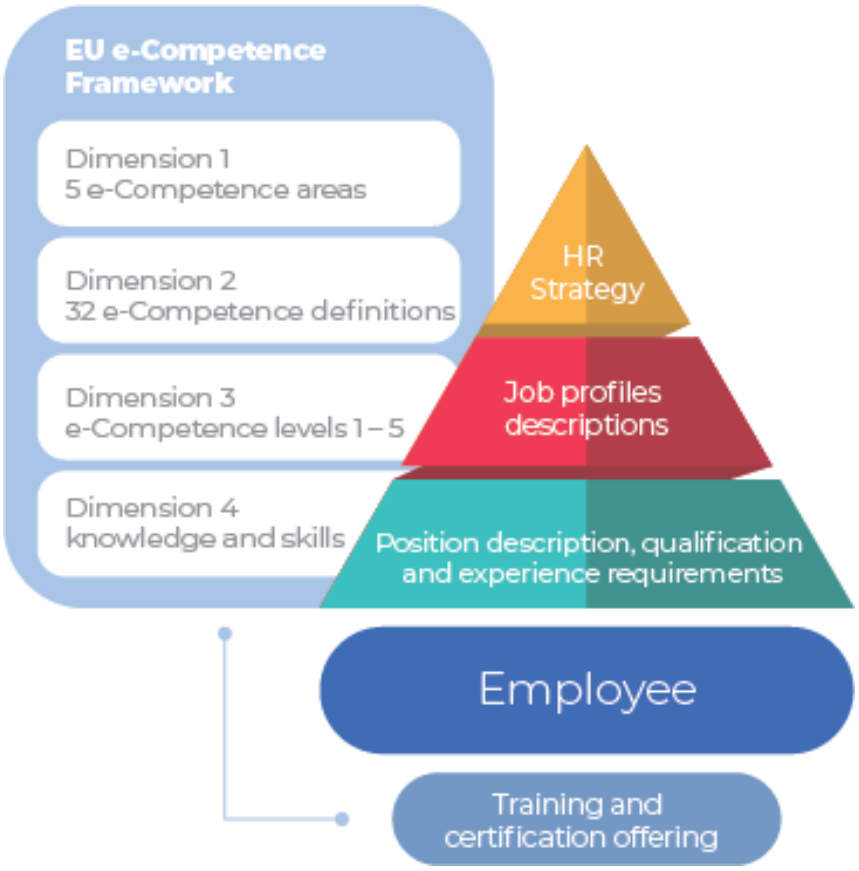
e-Competence Level	EQF Level
5	8
4	7
3	6
2	5 and 4
1	3

The e-CF has 5 levels directly related to the 8 levels of the EQF. The levels 1 and 2 of the EQF are not appropriated in the ICT field as they represent very basic Knowledge Skills and Competences, also EQF level 4 and 5 are implemented in the same e - CF level 2.

In 2016, the e-CF 3.0 became a European standard and was published officially as the European Norm EN 16234. Its last version, EN16234-1:2019 “e-Competence Framework (e-CF)” can be purchased and applied by organizations.

3.1. The four dimensions of the e-CF

The European e-Competence Framework (e-CF) is structured from four dimensions.

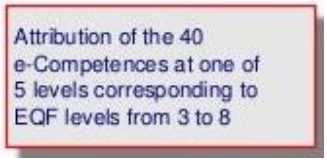


These dimensions reflect different levels of business and human resource planning and are specified as follows:

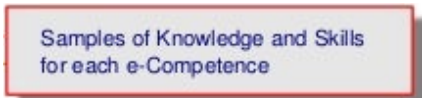
- **Dimension 1:** reflects *five e-Competence areas*, derived from ICT business processes **PLAN – BUILD – RUN – ENABLE – MANAGE.**

- **Dimension 2:** defines a set of e-Competences for each area (*40 competences in total)*. It includes: i) the Competence title, ii) a General description, iii) Requirements per e-CF level, iv) Knowledge examples and v) Skills examples

- **Dimension 3**: lists proficiency levels for each e-Competence. The levels provide statements of typical expectations of achievements and abilities associated with qualifications. These derive from the European Qualification Framework. Levels escalate from Level 1 to Level 5, which are related to EQF leve ls 3 to 8. This aims at offering a more concrete description of each of the e-Competences composing the Role Profile.



- **Dimension 4:** contains additional skills, including “soft skills” which qualify the e-Competences of dimension 2. These additional skills are divided in three categories: technical, behavioral, managerial skills. Each e-Competence is coupled with one or more additional skills. Crosses are used to mark the additional skills that correspond to each e-Competence. This demonstrates that each e-Competence can be fully deployed, only if it is accompanied by additional skills.



3.2. Application of e-CF

For each of the 5 Areas, the following competences have been identified, categorized according to a relevant EQF Level:

Dimension 1 5 e-CF areas (A - E)	Dimension 2 40 e-Competences identified	Dimension 3 e-Competence proficiency levels e-1 to e-5, related to EQF levels 3-8				
		e-1	e-2	e-3	e-4	e-5
A. PLAN	A.1. IS and Business Strategy Alignment				■	■
	A.2. Service Level Management			■	■	
	A.3. Business Plan Development			■	■	■
	A.4. Product / Service Planning		■	■	■	
	A.5. Architecture Design			■	■	■
	A.6. Application Design	■	■	■		
	A.7. Technology Trend Monitoring				■	■
	A.8. Sustainable Development			■	■	
	A.9. Innovating				■	■
B. BUILD	B.1. Application Development	■	■	■		
	B.2. Component Integration		■	■	■	
	B.3. Testing	■	■	■	■	
	B.4. Solution Deployment	■	■	■		
	B.5. Documentation Production	■	■	■		
	B.6. Systems Engineering			■	■	
C. RUN	C.1. User Support	■	■	■		
	C.2. Change Support		■	■		
	C.3. Service Delivery	■	■	■		
	C.4. Problem Management		■	■	■	
D. ENABLE	D.1. Information Security Strategy Development				■	■
	D.2. ICT Quality Strategy Development				■	■
	D.3. Education and Training Provision		■	■		
	D.4. Purchasing		■	■	■	
	D.5. Sales Proposal Development		■	■		
	D.6. Channel Management			■	■	
	D.7. Sales Management			■	■	■
	D.8. Contract Management		■	■	■	
	D.9. Personnel Development		■	■	■	
	D.10. Information and Knowledge Management			■	■	■
	D.11. Needs Identification			■	■	■
	D.12. Digital Marketing		■	■	■	
E. MANAGE	E.1. Forecast Development			■	■	
	E.2. Project and Portfolio Management		■	■	■	■
	E.3. Risk Management		■	■	■	
	E.4. Relationship Management			■	■	
	E.5. Process Improvement			■	■	
	E.6. ICT Quality Management		■	■	■	
	E.7. Business Change Management			■	■	■
	E.8. Information Security Management		■	■	■	
	E.9. IS Governance				■	■

Within this context, from the e-CF structure, in order to increase digital sovereignty of VET teachers, we are taking into consideration the following competence areas:

- D10: Information and Knowledge Management, which covers:
  i. The identification of information and knowledge relevant to the organisation and develops processes and structures to manage it
  ii. The creation of information structures that enable the exploitation, optimisating and sharing of information.
  iii. The understanding of appropriate tools to be deployed to create, extract, maintain, renew and propagate business knowledge in order to capitalise from the information asset.
- E3: Risk Management, which covers:
  i. The implementation of risk management across information systems through the application of the enterprise defined risk management policy and procedure.

ii. The assessment of risks to the organisation's business, including web, cloud and mobile resources.

iii. The design and maintenance of documents potential risk and containment plans.

- E8: Information Security Management, which covers:
  i. The management of information and systems security policy accounting for technical, human, organisational and other relevant threats, in line with the IT and business strategy and reflecting the risk culture of the organisation.
  ii. The deployment and management of the operational and specialist (for e.g. forensics, threat intelligence and intrusion detection) resources needed to ensure the capacity to manage security incidents, and makes recommendations for the continuous improvement of security policy and strategy.

4. DigiComp2: The European Digital Competence Framework

The European Digital Competence Framework, was first published in 2013 by the European Commission. Also known as DigComp, offers a tool to improve citizen's digital competence. that support digital competence building, and plan education and training initiatives to improve the digital competence of specific target groups. DigComp also provides a common language on how to identify and describe the key areas of digital competence and thus offers a common reference at European level. From 2013 up until now, DigComp has been used for multiple purposes, particularly in the context of employment, education and training, and lifelong learning.

Today, being digitally competent means that people need to have competences in all areas of DigComp. It contributes to the development of the DESI – Digital Economy & Society Index and to the National Digital Competences Initiative – INCoDe.2030.

The formulation of DigComp2 incorporates 4 dimensions as shown in the image aside:

It is ***organized in 5 areas*** and comprises a total of ***21 competences. Eight proficiency levels*** were defined for each competence, following *Bloom's taxonomy* and inspired by the structure and vocabulary of the *European Qualification Framework* - EQF: Level 1 and 2 (Basic), Level 3 and 4 (Intermediate), Level 5 and 6 (Advanced) and finally Level 7 and 8 (Highly Specialized). Each level represents a step up in citizens' acquisition of the competence according to its cognitive challenge, the complexity of the tasks they can handle and their autonomy in completing the task.

Source 1: Schooleducationgateway.eu

The main applications of DigComp2 are linked to:

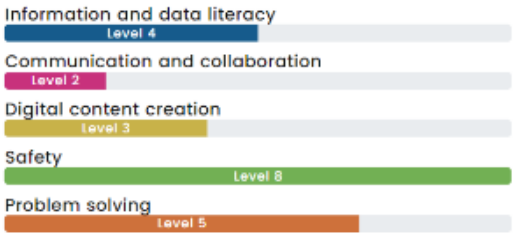
- **Competence assessment:** DigComp is used to assess digital competence levels, strengths and weaknesses of an individual or target population
- **The Training trainers and end-user learning:** DigComp is used to design training measures for the trainers who must develop digital competence.
- **Recognition and certification:** DigComp is used to assess, recognise and possibly certify learning achievements and enhanced competence.

4.1. The five areas of DigComp2

According to the European Commission who has enabled the design and adoption of DigComp 2.0[12] it identifies the key *components* of digital competence in ***5 areas*** which can be summarised as below[13]:

1) ***Information and data literacy:*** To articulate information needs, to locate and retrieve digital data, information and content. To judge the relevance of the source and its content. To store, manage, and organise digital data, information and content.
2) ***Communication and collaboration:*** To interact, communicate and collaborate through digital technologies while being aware of cultural and generational diversity. To participate in society through public and private digital services and participatory citizenship. To manage one's digital identity and reputation.
3) ***Digital content creation:*** To create and edit digital content To improve and integrate information and content into an existing body of knowledge while understanding how copyright and licences are to be applied. To know how to give understandable instructions for a computer system.
4) ***Safety:*** To protect devices, content, personal data and privacy in digital environments. To protect physical and psychological health, and to be aware of digital technologies for social well-being and social inclusion. To be aware of the environmental impact of digital technologies and their use.
5) ***Problem solving:*** To identify needs and problems, and to resolve conceptual problems and problem situations in digital environments. To use digital tools to innovate processes and products. To keep up-to-date with the digital evolution.

Each of the areas has been aligned to an EQF level, indicating the learning outcomes relevant to the qualifications at that level in any qualification system. Within this context, as presented in the image aside,



Source 2: http://www.digcomptest.eu/index.php?pg=quadro

1) ***Information and data literacy,*** *is aligned to level 4*
2) ***Communication and collaboration*** *is aligned to level 2*
3) ***Digital content creation,*** *is aligned to is aligned to level 3*
4) ***Safety,*** *is aligned to level 8*

[12] Vuorikari R, Punie Y, Carretero Gomez S and Van Den Brande G. DigComp 2.0: The Digital Competence Framework for Citizens. Update Phase 1: the Conceptual Reference Model. EUR 27948 EN. Luxembourg (Luxembourg): Publications Office of the European Union; 2016. JRC101254

[13] https://ec.europa.eu/jrc/en/digcomp/digital-competence-framework

5) Problem solving, *is aligned to level 5*

Within the above mention context, the DigiComp Reference Model includes the following Competences for each of the 4 Competence Areas[14]:

1. Information and data literacy

1.1. *Browsing, searching and filtering data, information and digital content,* described as the ability to:

i. articulate information needs
ii. search for data, information and content in digital environments,
iii. access them and to navigate between them.
iv. create and update personal search strategies

1.2. *Evaluating data, information and digital content,* described as the ability to:

i. analyse, compare and critically evaluate the credibility and reliability of sources of data, information and digital content.
ii. analyse, interpret and critically evaluate the data, information and digital content

1.3. *Managing data, information and digital content,* described as the ability to:

i. organise, store and retrieve data, information and content in digital environments.
ii. organise and process them in a structured environment.

2. *Communication and collaboration:*

2.1. Interacting through digital technologies, described as the ability to:

i. interact through a variety of digital technologies and
ii. understand appropriate digital communication means for a given context.

2.2. Sharing through digital technologies, described as the ability to:

i. share data, information and digital content with others through appropriate digital technologies.
ii. act as an intermediary,
iii. know about referencing and attribution practices.

2.3. Engaging in citizenship through digital technologies, described as the ability to:

i. participate in society through the use of public and private digital services
ii. seek opportunities for self-empowerment and for participatory citizenship through appropriate digital technologies.

2.4. Collaborating through digital technologies, described as the ability to:

i. use digital tools and technologies for collaborative processes, and for co-construction and co-creation of resources and knowledge.

2.5. Netiquette, described as the ability to:

[14] For further information: https://ec.europa.eu/jrc/en/digcomp/digital-competence-framework

i. be aware of behavioural norms and know-how while using digital technologies and interacting in digital environments
ii. adapt communication strategies to the specific audience
iii. be aware of cultural and generational diversity in digital environments.

2.6. *Managing digital identity,* described as the ability to:

i. create and manage one or multiple digital identities,
ii. be able to protect one's own reputation,
iii. deal with the data that one produces through several digital tools, environments and services.

3. Digital content creation

3.1. *Developing digital content,* described as the ability to:

i. Create and edit digital content in different formats,
ii. express oneself through digital means.

3.2. *Integrating and re-elaborating digital content,* described as the ability to:

i. modify, refine, improve and integrate information and content into an existing body of knowledge
ii. create new, original and relevant content and knowledge.

3.3. *Copyright and licences*, described as the ability to:

i. understand how copyright and licences apply to data, information and digital content.

3.4. *Programming*, described as the ability to:

i. plan and develop a sequence of understandable instructions for a computing system
ii. solve a given problem or perform a specific task.

4. Safety

4.1. *Protecting devices,* described as the ability to:

i. protect devices and digital content,
ii. understand risks and threats in digital environments.
iii. know about safety and security measures
iv. have due regard to reliability and privacy.

4.2. *Protecting personal data and privacy,* described as the ability to:

i. protect personal data and privacy in digital environments
ii. understand how to use and share personally identifiable information while being able to protect oneself and others from damages
iii. understand that digital services use a “Privacy policy”
iv. inform how personal data is used.

4.3. *Protecting health and well-being,* described as the ability to:

i. be able to avoid health-risks and threats to physical and psychological well-being while using digital technologies
ii. be able to protect oneself and others from possible dangers in digital environments (e.g. cyber bullying).
iii. be aware of digital technologies for social well-being and social inclusion.

4.4. *Protecting the environment,* described as the ability to:

i. be aware of the environmental impact of digital technologies and their use.

5. Problem solving

5.1. *Solving technical problems,* described as the ability to:

i. identify technical problems when operating devices and using digital environments
ii. solve them (from trouble-shooting to solving more complex problems).

5.2. *Identifying needs and technological responses,* described as the ability to:

i. assess needs and to identify, evaluate, select and use digital tools and possible technological responses to solve them
ii. adjust and customise digital environments to personal needs (e.g. accessibility).

5.3. *Creatively using digital technologies,* described as the ability to:

i. use digital tools and technologies to create knowledge and to innovate processes and products
ii. engage individually and collectively in cognitive processing to understand and resolve conceptual problems and problem situations in digital environments.

5.4. *Identifying digital competence gaps,* described as the ability to:

i. understand where one's own digital competence needs to be improved or updated
ii. be able to support others with their digital competence development
iii. seek opportunities for self-development and to keep up-to-date with the digital evolution.

4.2. Selection of DigComp2 Competences for the Sovereignty Framework

Within this context, from the DigComp2 structure, in order to increase digital sovereignty of VET teachers, we are taking into consideration the following competence areas:

4. Safety

4.1 Protecting personal data and privacy, including the ability to :

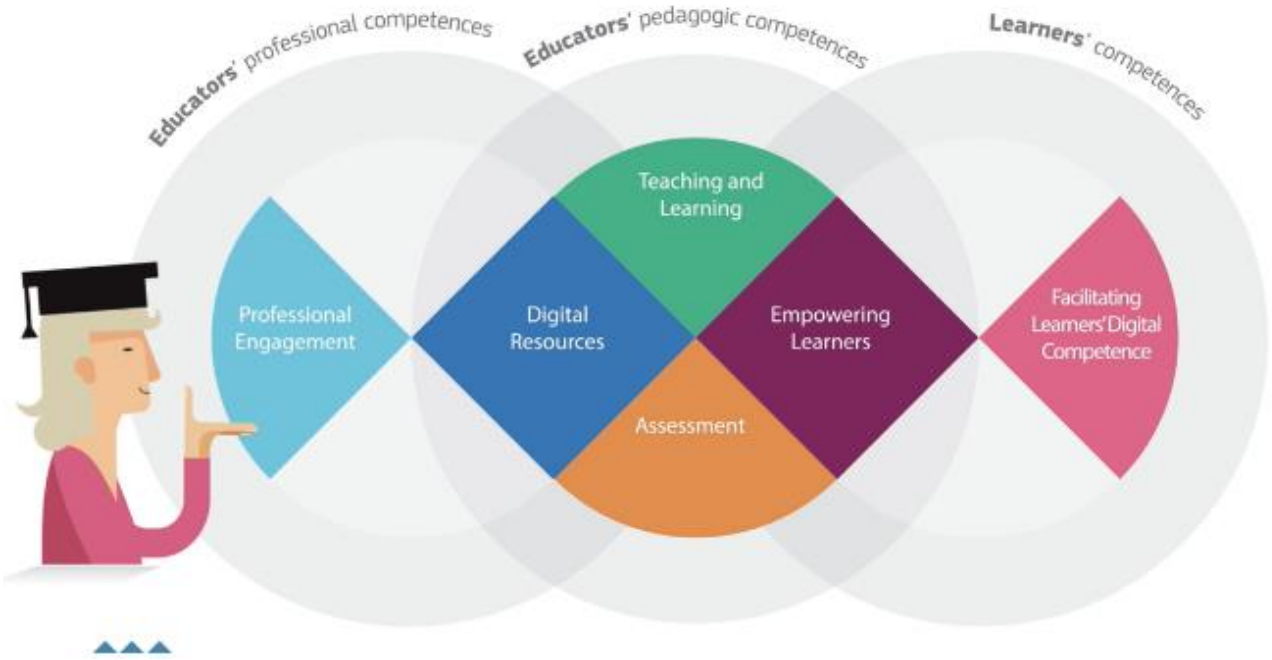
i. protect personal data and privacy in digital environments
ii. understand how to use and share personally identifiable information while being able to protect oneself and others from damages
iii. understand that digital services use a "Privacy policy"
iv. inform how personal data is used.

5. DigCompEdu: adapting DigComp to the VET Environment

DigCompEdu[15] describes the DigComp competences with a focus on supporting and encouraging the use of digital tools in education, as a means of improvement and innovation.

The European Framework for the Digital Competence of Educators (DigCompEdu) is a scientifically sound framework describing what it means for educators to be digitally competent. It provides a general reference frame to support the development of educator-specific digital competences in Europe. DigCompEdu is directed towards educators at all levels of education, from early childhood to higher and adult education, including general and vocational education and training, special needs education, and non-formal learning contexts.

DigCompEdu is structured on 6 different competence areas[16], namely:



Source 3: European Framework for the Digital Competence of Educators, European Commission, p.19

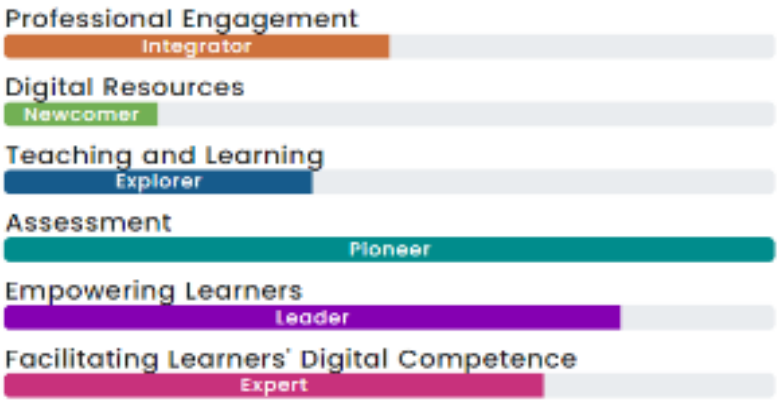
- ***Area 1*** *focuses on the professional environment,* is directed at the broader professional environment, i.e. educators' use of digital technologies in professional interactions with colleagues, learners, parents and other interested parties, for their own individual professional development and for the collective good of the organisation.

[15] Punie, Y., editor(s), Redecker, C., European Framework for the Digital Competence of Educators: DigCompEdu , EUR 28775 EN, Publications Office of the European Union, Luxembourg, 2017, ISBN 978-92-79-73718-3 (print),978-92-79-73494-6 (pdf), doi:10.2760/178382 (print),10.2760/159770 (online), JRC107466

[16] https://ec.europa.eu/jrc/sites/default/files/digcompedu_leaflet_en-2017-11-14.pdf

- ***Area 2*** *on sourcing, creating and sharing digital resources*; looks at the competences needed to effectively and responsibly use, create and share digital resources for learning
- ***Area 3*** *on managing and orchestrating the use of digital tools in teaching and learning*, is dedicated to managing and orchestrating the use of digital technologies in teaching and learning
- ***Area 4*** *on digital tools and strategies to enhance assessment*, addresses the use of digital strategies to enhance assessment
- ***Area 5*** *on the use of digital tools to empower learners*, focuses on the potential of digital technologies for learner-centred teaching and learning strategies
- **Area 6** *on facilitating learners' digital competence*, details the specific pedagogic competences required to facilitate students' digital competence. For each competence, a title and a short description are provided, which serve as the main point of reference

It is organized in six areas, with *22 competences,* and proposes a progression model with *six increasingly complex levels of proficiency* to help educators assess and develop their own digital competence[17]. Proficiency levels follow the Common European Framework of Reference for Languages (CEFR), namely:



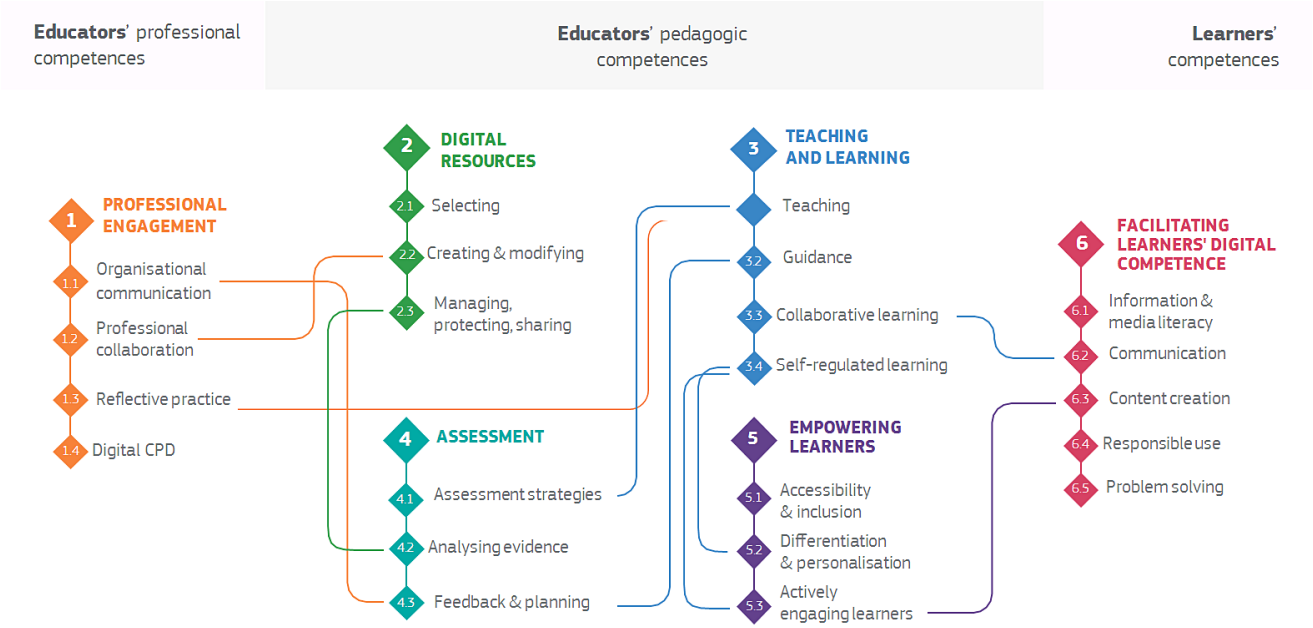
Source 4: http://www.digcomptest.eu/index.php?pg=quadro

- ***A1 - Newcomer,*** who has had very little contact with digital tools and need guidance to expand their repertoire
- ***A2 - Explorer,*** who has started using digital tools without, however, following a comprehensive or consistent approach. Explorers need insight and inspiration to expand their competences
- ***B1 - Integrator,*** who uses and experiments with digital tools for a range of purposes, trying to understand which digital strategies work best in which contexts.
- ***B2 - Expert,*** who uses a range of digital tools confidently, creatively and critically to enhance their professional activities. They continuously expand their repertoire of practices
- ***C1 - Leader,*** who relies on a broad repertoire of flexible, comprehensive and effective digital strategies. They are a source of inspiration for others.
- ***C2 – Pioneer,*** who questions the adequacy of contemporary digital and pedagogical practices, of which they themselves are experts. They lead innovation and are a role model for younger teachers.

[17] For more information: https://ec.europa.eu/jrc/digcompedu and Christine.Redecker@ec.europa.eu

5.1. Competence areas of DigCompEdu

The Overall DigComp Framework is presented in the image below identifying the Key Competences per Area and are being further explained in the following section:



Source 5: European Framework for the Digital Competence of Educators, European Commission, p.16

Within the above mention context, the DigiCompEdu Reference Model includes the following Competences for each of the 6 Competence Areas[18]:

1 Professional Engagement

1.1 *Organisational communication,* including the ability to:

i. use digital technologies to enhance organisational communication with learners, parents and third parties.

ii. contribute to collaboratively developing and improving organisational communication strategies.

1.2 *Professional collaboration*, including the ability to:

i. use digital technologies to engage in collaboration with other educators, sharing and exchanging knowledge and experiences and collaboratively innovating pedagogic practices.

1.3 *Reflective practice*, including the ability to:

i. individually and collectively reflect on, critically assess and actively develop one's own digital pedagogical practice and that of one's educational community.

[18] For further information: https://publications.jrc.ec.europa.eu/repository/handle/JRC107466

1.4 *Digital Continuous Professional Development (CPD),* including the ability to:

i. use digital sources and resources for continuous professional development.

2 Digital Resources

2.1 *Selecting digital resources,* including the ability to:

i. identify, assess and select digital resources for teaching and learning.

ii. consider the specific learning objective, context, pedagogical approach, and learner group, when selecting digital resources and planning their use.

2.2 *Creating and modifying digital resources,* including the ability to:

i. modify and build on existing openly-licensed resources and other resources where this is permitted.

ii. create or co-create new digital educational resources.

iii. consider the specific learning objective, context, pedagogical approach, and learner group, when designing digital resources and planning their use.

2.3 *Managing, protecting and sharing digital resources* , including the ability to:

i. organise digital content and make it available to learners, parents and other educators.

ii. effectively protect sensitive digital content.

iii. respect and correctly apply privacy and copyright rules.

iv. understand the use and creation of open licenses and open educational resources, including their proper attribution.

3 Teaching and Learning

3.1 *Teaching,* including the ability to:

i. plan for and implement digital devices and resources in the teaching process, so as to enhance the effectiveness of teaching interventions.

ii. appropriately manage and orchestrate digital teaching interventions.

iii. experiment with and develop new formats and pedagogical methods for instruction.

3.2 *Guidance,* including the ability to:

i. use digital technologies and services to enhance the interaction with learners, individually and collectively, within and outside the learning session.

ii. use digital technologies to offer timely and targeted guidance and assistance.

iii. experiment with and develop new forms and formats for offering guidance and support.

3.3 *Collaborative learning,* including the ability to:

i. use digital technologies to foster and enhance learner collaboration.

ii. enable learners to use digital technologies as part of collaborative assignments, as a means of enhancing communication, collaboration and collaborative knowledge creation.

3.4 *Self-regulated learning,* including the ability to:

i. *Use digital technologies to support self-regulated learning processes*, i.e. to enable learners to plan, monitor and reflect on their own learning, provide evidence of progress, share insights and come up with creative solutions.

4 Assessment

4.1 *Assessment strategies,* including the ability to:

i. use digital technologies for formative and summative assessment.
ii. enhance the diversity and suitability of assessment formats and approaches.

4.2 *Analysing evidence*, including the ability to:

i. generate, select, critically analyse and interpret digital evidence on learner activity, performance and progress, in order to inform teaching and learning.

4.3 *Feedback and planning,* including the ability to:

i. use digital technologies to provide targeted and timely feedback to learners.
ii. adapt teaching strategies and to provide targeted support, based on the evidence generated by the digital technologies used.
iii. enable learners and parents to understand the evidence provided by digital technologies and use it for decision-making.

5 Empowering Learners

5.1 *Accessibility and inclusion,* including the ability to:

i. ensure accessibility to learning resources and activities, for all learners, including those with special needs.
ii. consider and respond to learners' (digital) expectations, abilities, uses and misconceptions, as well as contextual, physical or cognitive constraints to their use of digital technologies.

5.2 *Differentiation and personalization,* including the ability to:

i. use digital technologies to address learners' diverse learning needs, by allowing learners to advance at different levels and speeds, and to follow individual learning pathways and objectives.

5.3 *Actively engaging learners,* including the ability to:

i. use digital technologies to foster learners' active and creative engagement with a subject matter.
ii. use digital technologies within pedagogic strategies that foster learners' transversal skills, deep thinking and creative expression.
iii. open up learning to new, real-world contexts, which involve learners themselves in hands-on activities, scientific investigation or complex problem solving, or in other ways increase learners' active involvement in complex subject matters.

6 Facilitating Learners' Digital Competence

6.1 *Information and media literacy,* including the ability to:

i. incorporate learning activities, assignments and assessments which require learners to articulate information needs;
ii. find information and resources in digital environments;
iii. organise, process, analyse and interpret information;
iv. compare and critically evaluate the credibility and reliability of information and its sources.

6.2 *Digital communication & collaboration,* including the ability to:

i. incorporate learning activities, assignments and assessments which require learners to effectively and responsibly use digital technologies for communication, collaboration and civic participation.

6.3 *Digital content creation,* including the ability to:

i. incorporate learning activities, assignments and assessments which require learners to express themselves through digital means, and to modify and create digital content in different formats
ii. teach learners how copyright and licenses apply to digital content, how to reference sources and attribute licenses.

6.4 *Responsible,* including the ability to:

i. take measures to ensure learners' physical, psychological and social wellbeing while using digital technologies.
ii. empower learners to manage risks and use digital technologies safely and responsibly.

6.5 *Digital problem solving,* including the ability to:

i. incorporate learning activities, assignments and assessments which require learners to identify and solve technical problems, or to transfer technological knowledge creatively to new situations.

5.2. Selection of DigCompEdu Competences for the Sovereignty Framework

Within this context, from the DigCompEdu structure, in order to increase digital sovereignty of VET teachers, we are taking into consideration the following competence areas:

2 Digital Resources

2.1 *Managing, protecting and sharing digital resources* , including the ability to:

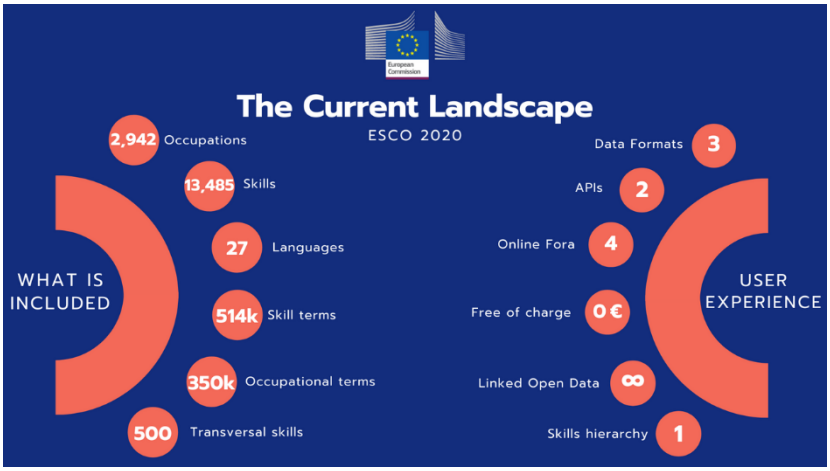
i. organise digital content and make it available to learners, parents and other educators.
ii. effectively protect sensitive digital content.
iii. respect and correctly apply privacy and copyright rules.
iii. understand the use and creation of open licenses and open educational resources, including their proper attribution.

6. Applying Competences for the Sovereignty Framework for VET Teachers and Trainers

6.1. Selection of relevant Professions according to ESCO

To apply the selected sovereignty related competences to the VET sector, namely to VET Teachers and Trainers we have selected the relevant professions according to ESCO.

ESCO [19] works as a dictionary, describing, identifying and classifying professional occupations and skills relevant for the EU labour market and education and training. Those concepts and the relationships between them can be understood by electronic systems, which allows different online platforms to use ESCO for services like matching jobseekers to jobs on the basis of their skills, suggesting trainings to people who want to reskill or upskill etc. ESCO provides descriptions of 2942 occupations and 13.485 skills linked to these occupations, translated into 27 languages. The aim of ESCO is to support job mobility across Europe and therefore a more integrated and efficient labour market, by offering a "common language" on occupations and skills that can be used by different stakeholders on employment and education and training topics.



Source 6: European Commission, Online ESCO Directory

Within this context, we have identified and will apply the Sovereignty Competences to the following professions:

1. Vocational Teacher

ESCO Code	2320.1
Description	Vocational teachers instruct students in their specialised field of study, which is predominantly practical in nature. They provide theoretical instruction in service of the practical skills and techniques that the students must subsequently master in the specialised vocation of their choice and aid in the development of the according attitudes and values. Vocational teachers monitor the students progress, assist individually when necessary, and evaluate their knowledge and performance on the subject through assignments, tests and examinations.

[19] More information at: https://ec.europa.eu/esco/portal/howtouse/21da6a9a-02d1-4533-8057-dea0a824a17a

Tasks	Tasks performed usually include: developing curricula and planning course content and methods of instruction; determining training needs of students or workers and liaising with individuals, industry and other education sectors to ensure provision of relevant education and training programmes; presenting lectures and conducting discussions to increase students' knowledge and competence; instructing and monitoring students in the use of tools, equipment and materials and the prevention of injury and damage; observing and evaluating students' work to determine progress, provide feedback and make suggestions for improvement; administering oral, written or performance tests to measure progress, evaluate training effectiveness and assess competency; preparing reports and maintaining records such as student grades, attendance rolls and training activity details; supervising independent or group projects, field placements, laboratory work or other training; providing individualized instruction and tutorial or remedial instruction; conducting on-the-job training sessions to teach and demonstrate principles, techniques, procedures or methods of designated subjects.	
Alternative Labels / Terms	• vocational college lecturer • vocational university teacher • technical institute teacher • vocational lecturer • vocational educator • vocational instructor • vocational college teacher	• vocational university tutor • vocational tutor • career and technology teacher • vocational teaching assistant • vocational education teacher • technological institute teacher
More Info:	European Commission > ESCO > Occupations > vocational teacher	

2. Further education teacher

ESCO Code	2359.7
Description	Further education teachers organise and teach programmes designed specifically for adult learners. They impart a wide spectrum of subjects, ranging from academic areas such as mathematics and history, to trainings for personalitiy development, technical expertise or practical courses like languages and ICT. They teach and support adults aspiring to broaden their knowledge and their personal and professional skills and/or to achieve further qualifications. Further education teachers consider the previous knowledge and the work and life experience of the learners. They individualize their teaching and involve the students in the planning and executing of their learning activities. Further education teachers design reasonable assignments and examinations suitable to their adult learners.
Tasks	(a) assessing students' level of ability and determining learning needs; (b) planning, preparing and delivering programmes of study, lessons and workshops for individual students and groups; (c) preparing and presenting material on the theory of the subject area being studied; (d) instructing and demonstrating practical aspects of the subject area being studied; (e) assigning exercises and work relevant to students' level of ability, interests and aptitude; (f) assessing students and offering advice, criticism and encouragement; (g) revising curricula, course content, course materials and methods of instruction;

	(h) preparing students for examinations and assessments; (i) counselling students regarding educational issues such as course and programme selection, class scheduling, school adjustment, truancy, study habits and career planning; (j) counselling students to help them understand and overcome personal, social or behavioural problems affecting their education; (k) preparing students for later educational experiences by encouraging them to explore learning opportunities and to persevere with challenging tasks.	
Alternative Labels / Terms	• further education practitioner • teacher of further education • practitioner in further education • tutor of further education	• continuing education teacher • sixth form tutor • sixth form teacher • further education lecturer
More info:	European Commission > ESCO > Occupations > further education teacher	

3. Education Methods Specialist

ESCO Code	2351
Description	Education methods specialists conduct research and develop or advise on teaching methods, courses and aids. They review and examine teachers' work, the functioning of educational institutions and the results achieved and recommend changes and improvements.
Tasks	(a) researching into current developments in curricula, teaching methods and other educational practices, and advising on necessary changes and possible improvements; (b) evaluating and advising on contents of courses and methods of examination; (c) researching into audiovisual and other teaching aids and advising on, planning and organizing their introduction in educational establishments; (d) documenting subjects and courses developed, and evaluating new courses; (e) providing ongoing professional development, training and consultative services to teachers; (f) organizing and conducting workshops and conferences to train teachers in new programmes and methods; (g) developing the structure, content and objectives of new educational courses and programmes; (h) visiting schools periodically and conferring with administrative and teaching staff on questions relating to curricula, teaching methods, equipment and other matters; (i) visiting classrooms to observe teaching techniques and to evaluate teachers' performance and scholastic results obtained; (j) preparing reports and making recommendations to educational authorities concerning possible changes and improvements in curricula, teaching methods, and other matters
Alternative Labels / Terms	n/a
More info:	European Commission > ESCO > Occupations > curriculum administrator

7. Aligning Sovereignty Competences to ESCO Professions related to VET Teachers and Trainers

Based on the above analysis, the Digital Sovereignty Competence Framework is applicable in all three Professions related to VET Teachers / Trainers. After reviewing the 3 Digital Competence Frameworks (e-cg, DigComp and DigCompEdu) the applicable competences for the proposed Sovereignty Competence Framework are being summarized below:

Competence Area	Digital Sovereignty Competences covered	Alignment to existing Competence Framework	ESCO Code		
			2320.1	2359.7	2351
D10: Information and Knowledge Management	i. The identification of information and knowledge relevant to the organisation and develops processes and structures to manage it ii. The creation of information structures that enable the exploitation, optimisating and sharing of information. iii. The understanding of appropriate tools to be deployed to create, extract, maintain, renew and propagate business knowledge in order to capitalise from the information asset.	e-CF	X	X	
E3: Risk Management	i. The implementation of risk management across information systems through the application of the enterprise defined risk management policy and procedure. ii. The assessment of risks to the organisation's business, including web, cloud and mobile resources. iii. The design and maintenance of documents potential risk and containment plans	e-CF	X	X	
E8: Information Security Management	i. The management of information and systems security policy accounting for technical, human, organisational and other relevant threats, in line with the IT and business strategy and reflecting the risk culture of the organisation. ii. The deployment and management of the operational and specialist (for e.g. forensics, threat intelligence and intrusion detection) resources needed to ensure the capacity to manage security incidents, and makes recommendations	e-CF			X

Competence Area	Digital Sovereignty Competences covered	Alignment to existing Competence Framework	ESCO Code		
			2320.1	2359.7	2351
	for the continuous improvement of security policy and strategy.				
4.1 Protecting personal data and privacy	i. protect personal data and privacy in digital environments ii. understand how to use and share personally identifiable information while being able to protect oneself and others from damages iii. understand that digital services use a "Privacy policy" iv. inform how personal data is used.	DigComp2			
2.1 Managing, protecting and sharing digital resources	i. organise digital content and make it available to learners, parents and other educators. ii. effectively protect sensitive digital content. iii. respect and correctly apply privacy and copyright rules. iv. understand the use and creation of open licenses and open educational resources, including their proper attribution.	DigCompEdu	X	X	X