European Commission

A common European Digital Competence Framework for Citizens

Erasmus+

WHY a European Digital Competence Framework for Citizens?

Digital technologies are key drivers of innovation, growth and job creation in a global economy. Not everybody however, has the knowledge, skills and attitudes to be able to use digital technologies in a critical, collaborative and creative way. This digital competence is becoming a must for employability and active citizenship.

Until now, there was no common understanding of what these skills are and also no scientific base to say which competences should be part of every citizen's digital competence.

To address this problem and to bridge the worlds of education and labour market, the European Commission developed a common European Digital Competence Framework to identify and describe the set of competences that are needed by all citizens today. Participation in the digital domain is no longer a question of "have" or "have not", but rather an issue of competence.

This framework is oriented to all European citizens as users of digital technologies and complements the existing e-Competence Framework oriented specifically to ICT professionals (http://www.ecompetences.eu/).

30% of all Europeans are digitally illiterate (older people, less educated youth, lower income families, migrants, at risk of social exclusion, etc.) and are as such deprived from e-government; e-health, e-banking, etc. services.

WHAT is the European Digital Competence Framework about?

The European Digital Competence Framework for citizens describes 21 competences to use digital technologies in a confident, critical, collaborative and creative way to achieve goals related to work, employability, learning, leisure, inclusion and participation in society.

Digital competence is one of the 8 key competences for Lifelong Learning by the European Union[1]. It is a transversal key competence which, as such, enables us to acquire other key competences (e.g. language, mathematics, learning to learn, cultural awareness). Nowadays, digital presence depends more on knowledge, skills and attitudes than only on access to and use of ICTs.

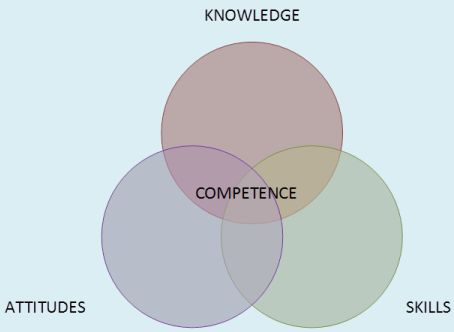


Fig. 1. A competence is comprised of knowledge, skills and attitudes.

The European Digital Competence Framework uses a common language for competences and proficiency levels that can be understood across Europe. An example of such use is an individual online assessment tool of one's own digital competence levels that has been embedded in EUROPASS. This online tool is available free of charge for everyone through an online portal (https://europass.cedefop.europa.eu/en/home).

Having not the necessary digital competences has direct consequences for employability. In the EU 42% of people with no core computer skills are inactive in the labour market.

FOR WHOM -What can the Digital Competence Framework do?

The European Digital Competence Framework (DIGCOMP) can be used in different contexts to support citizens to live and work in an increasing digital society. Therefore, it is an enabler; it is designed to empower users, not to restrict them.

[1] Official Journal L 394 of 30.12.2006

DIGCOMP can help:

- *Citizens* with no or low abilities to use ICT in daily life in order to identify the most essential skills to improve their personal and professional lives. The ability to use ICT effectively is an essential life skill.
- *Jobseekers* to identify the acquired skills and their proficiency level when developing their CV. They can also compare these against job vacancies to identify the skills they are lacking and search for further skills development and learning opportunities.
- Employers to define the set of skills, competences and qualifications their vacancies require when they are developing a job description.
- *Employment services* can use the DIGCOMP to exchange relevant labour market information (CVs and vacancies) in a meaningful way and offer adequate career guidance.
- *Education and training* institutions and lifelong learning organisations to use the framework in curriculum development, learning outcomes and assessment as well as for innovating learning services.

How was the Digital Competence Framework created?

The European Digital Competence Framework was developed through an intensive two year process of collaboration and validation involving more than 120 experts and stakeholders from many different countries. The research was developed by the European Commission Institute for Prospective Technological Studies[2] (JRC IPTS) on behalf of the Directorate General for Education and Culture and the Directorate General for Employment, Social Affairs and Inclusion.

Policy context

The Framework supports key policy objectives of Juncker's Commission and in particular the Political Guidelines on 'A New Boost for Jobs, Growth and Investment' and a 'Connected Digital Single Market' and relies on past Commission initiatives such as "Rethinking Education" and "Opening up Education" as well as the "Grand Coalition for digital Jobs". It benefits an ever growing user community from the EU and across the world. The Digital Competence Framework is also contributing to turn the Youth Guarantee into a reality to ensure that every young person gets help to find either a decent job or the opportunity to find training, experience or learning relevant to getting a job in the future. The European Digital Competence Framework is complementary to other European Commission's initiatives in the area of competence development and building.

Framework structure

The Digital Competence Framework contains 21 competences structured according to 5 competence areas as shown in Table 1. The areas of digital competence are the following:

1. Information:	Identify, locate, retrieve, store, organise and analyse digital information, judging its relevance and purpose.
2. Communication:	Communicate in digital environments, share resources through online tools, link with others and collaborate through digital tools, interact with and participate in communities and networks, cross-cultural awareness.
3. Content-creation:	Create and edit new content (from word processing to images and video); integrate and re-elaborate previous knowledge and content; produce creative expressions, media outputs and programming; deal with and apply intellectual property rights and licences.
4. Safety:	Personal protection, data protection, digital identity protection, security measures, safe and sustainable use.
5. Problem-solving:	Identify digital needs and resources, make informed decisions as to which are the most appropriate digital tools according to the purpose or need, solve conceptual problems through digital means, creatively use technologies, solve technical problems, update one's own and others' competences.

[2] https://ec.europa.eu/jrc/en/institutes/ipts and for the final report see: https://ec.europa.eu/jrc/sites/default/files/lb-na-26035-enn.pdf

In the framework, each of the competences has three proficiency levels, namely "Basic user", "Intermediate User" and "Proficiency User". Further work is being developed to extend the proficiency levels.

Dimension 1 **Competence areas (5)**	***Dimension 2*** **Competences (21)**	***Dimension 3*** **Proficiency levels**
1. Information	1.1 Browsing, searching, & filtering information	A B C
	1.2 Evaluating Information	A B C
	1.3 Storing and retrieving information	A B C
2. Communication	2.1 Interacting through technologies	A B C
	2.2 Sharing information and content	A B C
	2.3 Engaging in online citizenship	A B C
	2.4 Collaborating through digital channels	A B C
	2.5 Netiquette	A B C
	2.6 Managing digital identity	A B C
3. Content creation	3.1 Developing content	A B C
	3.2 Integrating and re-elaborating	A B C
	3.3 Copyright and Licences	A B C
	3.4 Programming	A B C
4. Safety	4.1 Protecting devices	A B C
	4.2 Protecting data and digital identity	A B C
	4.3 Protecting health	A B C
	4.4 Protecting the environment	A B C
5. Problem solving	5.1 Solving technical problems	A B C
	5.2 Expressing needs & identifying technological responses	A B C
	5.3 Innovating, creating and solving using digital tools	A B C
	5.4 Identifying digital competence gaps	A B C

Examples of competences

Each of the 21 competences is presented in the same format including a short definition of the competence, descriptors for three proficiency levels (in version 1.0), examples of the knowledge, skills and attitudes related to the competence, and two examples of how the competence could be applied to specific purposes, i.e. learning and employment.

Dimension 1 Name of area	**Problem solving**		
Dimension 2 Competence title and description	5.3 Innovating and creatively using technology To innovate with technology, to actively participate in collaborative digital and multimedia production, to express oneself creatively through digital media and technologies, to create knowledge and solve conceptual problems with the support of digital tools		
Dimension 3 Proficiency levels	**A – Basic User**	**B- Intermediate User**	**C- Proficiency user**
	I know that technologies and digital tools can be used for creative purposes and I can make some creative use of technologies.	I can use technologies for creative outputs and I can use technologies to solve problems (i.e. visualizing a problem). I collaborate with others in the creation of innovative and creative outputs, but I don't take the initiative.	I can solve conceptual problems taking advantage of technologies and digital tools, I can contribute to the knowledge creation through technological means, I can take part in innovative actions through the use of technologies. I proactively collaborate with others to produce creative and innovative outputs.
Dimension 4			
Knowledge examples	Uses a widely diverse and well-balanced mix of digital and non-digital technologies for different problems and will dynamically change options over time Can solve a theoretical problem, of individual or collective interest, through or with the support of digital tools Knows how to find the relevant knowledge for the solution of theoretical problems Understands how meaning is produced through multimedia and technologies		
Skills examples	Knows how to explore the web, the market, or his/her online network when searching for solutions Is capable of exploiting technological potentials in order to represent and solve problems Knows how to solve problems individually and collectively (peer-problem solving) Is able to build meaningful knowledge through interaction with digitally available resources Is able to use a variety of media to express oneself creatively (text, images, audio, and movie)		
Attitude examples	Is willing to explore alternative solutions that are offered by technologies Is pro-active in looking for solutions Is pro-active in collaborative problem solving Is open to revise his/her values and attitudes according to the situation Sees the potential of technologies and media for self-expression and knowledge creation Values the added value of new media for cognitive and creative processes Is critical about knowledge production and consumption with media and technologies		
Dimension 5 Application to purpose			
Learning	I can use my smart phone for taking pictures for the school project and I propose a creative artefact despite using basic digital means.	I can use the appropriate digital tools to enhance my school assignments and to better understand and represent a conceptual problem (e.g. mind mapping).	I use several tools for representing concepts when I structure my assignment. I create wikis to collaborate with school mates on the assignment. I can think of several original technological-based initiatives
Employment	I can use simple software provided in my company in ways that were not necessarily those that the software was created for.	I can use project management software to plan, organize, and manage resource pools. I can use software and applications that help me visualize or organize a complex task and therefore see it in a different way.	I know that technologies can help me understand better how to organize staff, resources, financial issues and actions in my team and I use a variety of specialized software to help me predict the future needs of my project and team.

Assessment and validation of digital competences - Self-assessment tool

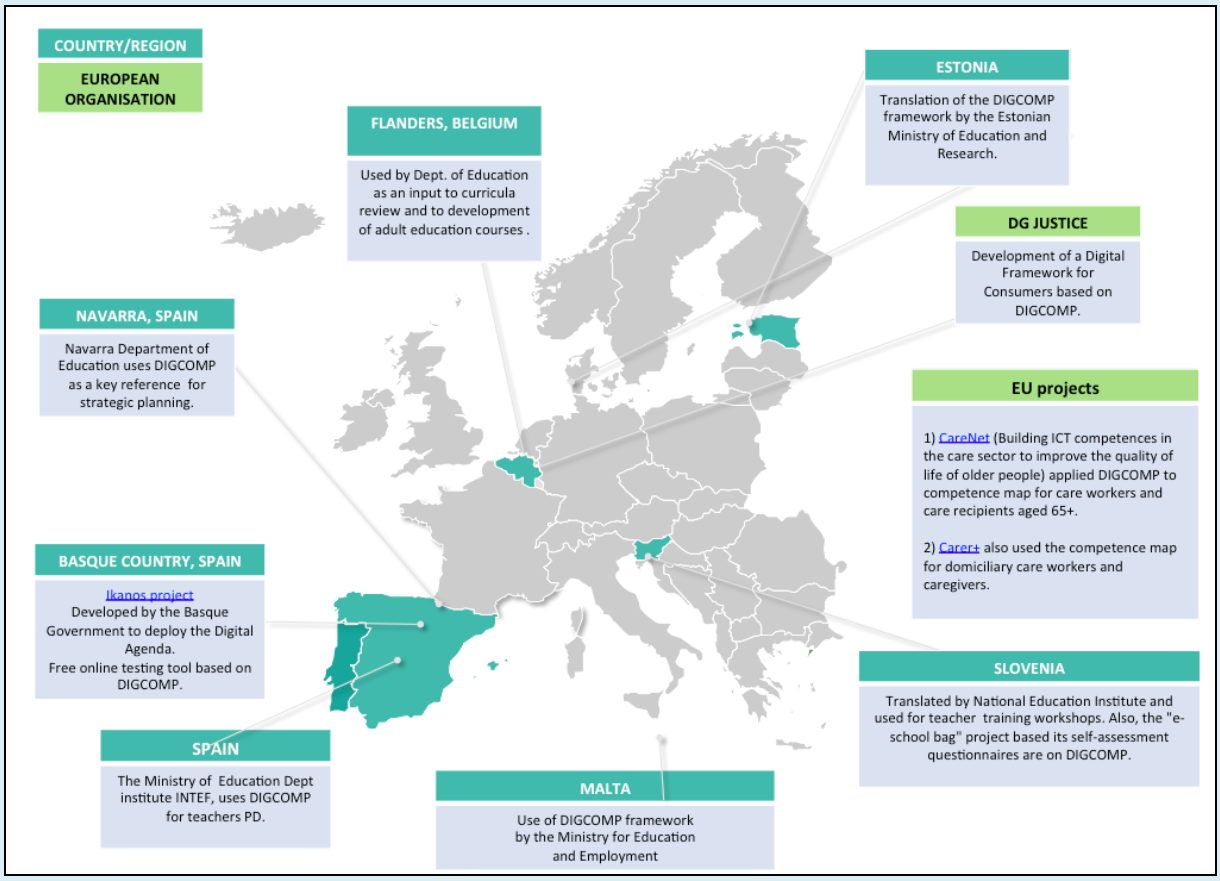
As part of the EUROPASS –CV an assessment of the 21 competences along 3 has been added in order to provide the possibility to describe which competence one has or not and at which proficiency level.

	Basic User	Independent User	Proficient User
Information processing	I can look for information online using a search engine. I know not all online information is reliable. I can save or store files or content (e.g. text, pictures, music, videos, web pages) and retrieve them once saved or stored.	I can use different search engines to find information. I use some filters when searching (e.g. searching only images, videos, maps). I compare different sources to assess the reliability of the information I find. I classify the information in an methodical way using files and folders to locate these easier. I do backups of information or files I have stored.	I can use advanced search strategies (e.g. using searchoperators) to find reliable information on the internet. I can use web feeds (like RSS) to be updated with content I am interested in. I can assess the validity and credibility of information using a range of criteria. I am aware of new advances in information search, storage and retrieval.I can save information found on the internet in different formats. I can use cloud information storage services (e.g. Dropbox, Google Drive, One Drive).
Communication	I can communicate with others using mobile phone, Voice over IP (e.g. Skype, Viber) e-mail or chat – using basic features (e.g. voice messaging, SMS, send and receive e-mails, text exchange). I can share files and content using simple tools. I know I can use digital technologies to interact with services (as government, bank, hospitals). I am aware of social networking sites and online collaboration tools. I am aware that when using digital tools, certain communication rules apply (e.g. when commenting, sharing personal information).	I can use advanced features of several communication tools (e.g. using Voice over IP while file sharing files at the same time). I can use collaboration tools and contribute to e.g. shared documents/files someone else has created. I can use some features of online services (e.g. public services, e-banking, online shopping). I pass on or share knowledge with others online (e.g. through social networking tools or in online communities). I am aware of and use the rules of online communication ("netiquette").	I actively use a wide range of communication tools (e-mail, chat, SMS, instant messaging, blogs, micro-blogs, social networks) for online communication. I can create and manage content with collaboration tools (e.g. electronic calendars, project management systems, online proofing, online spreadsheets). I actively participate in online spaces and use several online services (e.g. public services, e-banking, online shopping). I can use advanced features of communication tools (e.g. video conferencing, data sharing, application sharing).
Content creation	I can produce simple digital content (e.g. text, tables, images, audio files) in at least one format using digital tools. I can make basic editing to content produced by others. I know that content can be covered by copyright. I can apply and modify simple functions and settings of software and applications that I use (e.g. change default settings).	I can produce complex digital content in different formats (e.g. text, tables, images, audio files). I can use tools/editors for creating web page or blog using templates (e.g. WordPress, CoffeeCup). I can apply basic formatting (e.g. insert footnotes, insert chart, table) to the content I or others have produced. I know how to reference and reuse content that is covered by copyright. I know the basics of one programming language.	I can produce or modify complex, multimedia content in different formats, using a variety of digital platforms, tools and environments. I can create a website using a programming language. I can use advanced formatting functions of different tools (e.g. mail merge, merging documents of different formats, using advanced formulas, macros). I know how to apply licences and copyrights. I can use several programming languages. I know how to design, create and modify databases with (e.g. Access, MySqel, Dbase, Oracle).
Safety	I can take basic steps to protect my devices, (e.g. using anti-viruses and passwords). I know that not all online information is reliable.I am aware that my online identity credentials (username and password) can be stolen. I know I should not reveal private information online. I know that using digital technology too extensively can affect my health. I take basic measures to save energy.	I have installed security programmes on the device(s) that I use to access the Internet (e.g. antivirus, firewall). I run these programmes on a regular basis and I update them regularly. I use different passwords to access equipment, devices and digital services and I modify them on a periodic basis. I can identify the websites or e-mail messages which might be used to scam. I can identify a phishing e-mail. I can shape my online digital identity and keep track of my digital footprint. I understand the health risks associated with the use of digital technology (e.g. ergonomy, risk of addiction). I understand the positive and negative impact of technology on the environment.	I frequently check the security configuration and systems of my devices and/or of the applications I use. I know how to react if my computer is infected by a virus. I can configure or modify the firewall and security settings of my digital devices. I know how to encrypt e-mails or files. I can apply filters to spam e-mails. To avoid health problems (physical and psychological), I make reasonable use of information and communication technology. I have an informed stance on the impact of digital technologies on everyday life, online consumption, and the environment.
Problem solving	I can find support and assistance when a (technical)problem occurs or when using a new device, program or application. I know how to solve some routine problems (e.g. close program, re-start computer, re-install/update program, check internet connection). I know am aware that digital tools can help me in solving problems. I am also aware that they have their limitations. When confronted with a new technological or non-technological problem, I can use experiment with the digital tools I know can use to solve it. I am aware that I need to update my digital skills regularly.	I can solve most of the more frequent problems that arise when using digital technologies. I can use digital technologies to solve (non-technical) problems. I can select a digital tool that suits my needs and assess its effectiveness. I can solve technological problems by exploring the settings and options of programmes or tools. I regularly update my My digital skills continuously evolve. I am aware of my limits their limitations and aim to close try to fill my knowledge gaps.	I can solve almost all problems that arise when using digital technology. I can choose the right tool, device, application, software or service to solvea (non-technical) problems. I am aware of new technological developments. I understand how new tools work. I frequently update my digital skills.

The statements and descriptors which are closest to the individual person's perceived proficiency level of kwowledge, skiils and competence is then being summarised on the CV.

Use on national and European level

Various ***EU Member States*** are using the DIGCOMP Framework and related assessment tool in their educational reforms on curricula, learning outcomes or teacher training (see blue boxes). Such implementations of the Digital Competence Framework provide better understanding of its application in real-life contexts; for example for monitoring the digital competence levels of citizens. At the ***European level*** also various implementations of the framework are underway (see green boxes):



A COMMON EUROPEAN DIGITAL COMPETENCE FRAMEWORK FOR CITIZENS

DIGCOMP v1.0 ready for use

DIGCOMP v1.0 is the first public release. This version contains competences structured along 5 domain areas and along three proficiency levels. It is free of charge for everyone and can be visited here: *http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=6359*

In line with the Digital Competence Framework v1.0, an online self-assessment tool for individuals-v0 has been embedded in EUROPASS and can be visited there from the 1st of January 2015.

Through continuous consultation of stakeholders the framework will be regularly revised to keep it updated with the demands of our society. A new release (DIGCOMP v1.1) where the competences are described according to more proficiency levels is expected by mid-2015.

Get involved

Shaping the digital competence framework into an up-to-date, practical tool can only be done from the bottom up, through the active involvement of people from the education and training sector, the industry (including the ICT industry) as well as from the labour market and the social partners. Employers' organisations, trade unions, employment services, education institutions, training organisations, European sector skills councils and networks as well as government bodies are feeding in to this framework.

Directorate General Employment, Social Affairs and Inclusion – supported by the Joint Research Centre – Institute for Prospective Technological Studies (IPTS) and the European Centre for the Development of Vocational Training (Cedefop) – coordinates the development and governance of the framework.

Anyone interested in becoming involved or learning more about how to develop DIGCOMP can contact Directorate General Employment, Social Affairs and Inclusion: **EMPL C4 UNIT <EMPL-C4-UNIT@ec.europa.eu>**