



# Digital Skills & Competences for Adult Learners Open Educational Resource



# Digital Skills & Competences for Adult Learners

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### 1. Living and working in a changing world

Digital competence – as defined and specified in this article – is increasingly seen nowadays as an important transversal skill for citizenship.

Since digital technology and related services are continuously changing, digital competence needs to be updated accordingly, to reduce the risks of digital exclusion. Indeed, this risk of exclusion is increasingly connected to the lack of competence, while the access to digital tools is continuously increasing. See for example the penetration of mobile phones, which in 2019 has reached a coverage of 100% in all continents with the exception of Africa that has a penetration rate of 80% (ITU – Statistics 2019). At the same time, digital competence has become crucial for employability and in the workplace. Besides specialist ICT skills required in the job market, this competence is now crucial to successfully search for and get a job, as well as to start a professional activity. Digital competence is also important for collaborative work and to perform several job-related functions, depending on information and data management, content production, communication, and so on.

Digital competence appeared for the first time in the new framework of key competences for lifelong learning (EU, Council Recommendation on Key Competences for Lifelong Learning, 2006 & 2018), as a **transversal skill for life**, reflecting an understanding of the digital knowledge which





goes beyond the strictly technical and procedural notions characterising previous European approaches. As opposed to mere ICT skills conceptualisation (e.g., see the <u>original ECDL</u>), the updated concept now incorporates aspects such as critically evaluating online information or creative practices of digital content production. The **DigComp Framework** is a fundamental tool that has been developed by the European Union (EU) to tackle the challenge of the digital transformation investing our lives and workplaces. DigComp was first published in <u>2013</u>, and then revised and updated: its latest version, DigComp 2.1, dates back to <u>2017</u>. It offers a description of the competences that are necessary today to use digital technologies in a confident, critical, collaborative and creative way for carrying out activities and achieving goals related to work, learning, leisure, inclusion and participation in our digital society. This framework is the main reference in Europe today, for the development and strategic planning of digital competence initiatives.

The DigComp Framework includes five dimensions:

- 1. Five <u>Competence areas</u> identified to be part of digital competence: Information and data literacy; Communication and collaboration; Digital content creation; Safety; Problem solving.
- 2. 21 **<u>Competence descriptors</u>** and titles that are pertinent to each area (see Figure 1).
- Eight <u>Proficiency levels</u> for each competence, that is; Foundation > Level 1 & Level 2; Intermediate > Level 3 & Level 4; Advanced > Level 5 & Level 6; Highly specialised > Level 7 & Level 8.
- 4. Knowledge, skills and attitudes applicable to each competence.
- 5. **Examples of use**, on the applicability of the competence to different purposes.



Figure 1 - DIGCOMP Competence Areas and Descriptors





The framework is flexible enough to be used in different sectors, where the digital competence is increasingly important (see <u>DigComp into Action – Get inspired Make it happen – A user guide to</u> the European Digital Competence Framework), as follows:

1. **Education and training**: digital competence is relevant at all levels of the educational system (including school and higher education) for several reasons, ranging from active citizenship to using ICT for learning purposes, to job search.

2. **Life-long learning and social inclusion**: digital competence is also important in everyday life and the lack of digital competence can increase the risk of social exclusion of already disadvantaged people (e.g., disable people, migrants, older people etc.).

3. **Employment and workplace**: digital competence is necessary today in the workplace, at different (more general or more specialised) levels, since an increasing number of job profiles requires the mastering of digital skills.

In these fields, DigComp has been used with a variety of purposes which are of interest for understanding its role in adult education, namely:

- as a tool to analyse the digital skills requirements of various jobs and to define the related professional digital profiles;
- as a tool to assess and certify the digital skills levels;
- as a tool to design, develop and delivery digital competence training programmes.

In the following paragraphs we will focus on life-long learning and inclusion as well as on employment, looking at how the acquisition of digital competence has come into play in the lives of adults, whether they are at risk of social exclusion or workers needing to update their skills. We will also provide examples of practices and tools that adults' trainers may consider to improve their professional practices.

#### 2. Digital competence and social inclusion

A relevant field of interest for adult education trainers in the area of digital competence focuses on adults at risk of social exclusion, particularly people on the margins, and older people who need to develop digital skills to keep their social relations and train their cognitive skills in a digital world. According to <u>Eurostat 2016 data</u>, people with low education levels or low incomes continue to be at risk of digital exclusion, while the number of people with low level of digital skills increases with age. For example, while 96% of 16-24 year-olds living in the EU-28 use the Internet at least once





a week, only 57% of people aged 55-74 do it. Some progress has been made in recent years, but the situation still needs to be improved to support and encourage citizens' participation in the social, political and economic life of contemporary societies. As underlined in several EU documents and in the literature on digital inequalities (see for example <u>Hargittai</u>, 2002), digital competence is a driving force for the social promotion of subjects at risk of marginalisation. The EU has undertaken several initiatives in the related area of **e-inclusion**, a term referring to actions aimed at creating "an information society for all". From the <u>2006 Riga Ministerial Declaration</u> to the <u>Digital Agenda for Europe 2010-2020</u>, digital inclusion – or e-inclusion – has been seen as a necessary condition to ensure equity and social justice: the lack of access to digital information resources and opportunities in the information society represents a heavy discrimination factor.

In 2019 the <u>Directorate-General for Employment, Social Affairs and Inclusion (European</u> <u>Commission</u>) has published <u>Inspirational practices for tomorrow's inclusive digital world</u> where examples of good practices in the area of "digital skills for all" are described. Generally speaking, these examples point to increasing the participation levels of citizens in the democratic life of our societies (e.g., co-production of digital and inclusive public services for all) or to train specific segments of the population, including older people, migrants, youth with disabilities and NEETs (Neither in Employment nor in Education or Training), to make them digitally literate. Focusing on training, the following different target groups are addressed for diverse reasons (*why*) on partially similar contents (*what*) in different ways (*how*);

- **Older people.** One of the main risks for digitally unskilled older people is to be disconnected • with severe implications for their civil and social relationships (*why*). If they are not able to communicate with their digital devices, even well-educated older subjects are at risk to become isolated, unable to carry out everyday tasks such as online banking, interacting with official forms, and losing contacts with their families. Training addressing older people is mostly concerned with the very basic notions of digital competence associated with communication (*what*) and some good practices are leveraged on "peer tutoring" where the tutor is the younger and the tutored the older (*how*). In this way, it is not only digital skills that are promoted but also the intergenerational link, as in the case of Pane e Internet, an Italian project aimed at supporting digital empowerment. Here we read the story of Nonna *Paola* (Granny Paola), who at the age of 75 learned to use her smartphone more effectively, thanks to the support of Federico, a young student of a technical institute from Rimini (Emilia Romagna). Another project is Gameplay for Inspiring Digital Adoption (GIRDA), addressing "the problem of reluctance amongst many older people to engage with digital products". In Austria, North Macedonia, Slovenia and the UK, 126 people aged between 57-96 were involved in social game-based activities to develop their self-confidence in the use of touch-screen technologies.
- **Migrants.** There are many reasons why migrants need to be digitally competent, from the search for a job, to requesting a document for accessing language courses (*why*). The ownership of basic digital skills related to information and communication (*what*) is crucial



for them to be part of the country they reached. Language may be an obstacle in the digital training of migrant people: therefore, modelling and coaching (*how*) are essential strategies for effective training. A <u>catalogue of digital practices</u> and opportunities aimed at migrants and refugees is available online, including courses on digital skills that have been selected within the context of the European initiative <u>MOOC4Inclusion</u>. Another example of good practice is the <u>BeuthBonus project</u> (2015-18), funded by the German Government as part of the programme "Integration through Qualification". Among other things, this <u>project</u> aimed at helping migrant academics improve their employment situation through the system of <u>Open Digital Badges</u> for the recognition of informal skills such as digital competences, developed by them within their life. 49 people participated in the project, and at the end all agreed that Open Digital Badges were useful to improve their reputation on the social media landscape and find a better job.

- Youth with disabilities. In general, ICT may increase the opportunities for young adults with disabilities to access training and learning, to participate in a community of interest, to find jobs (*why*). For these purposes they need to develop from basic to advanced digital competences (*what*), but a condition is required (*how*): the requirement of accessibility (mostly but not exclusively web-accessibility) must be met, thus ensuring that ICTs are enablers and not obstacles to the digital participation of these young adults. Again, modelling, tutoring and coaching are crucial in supporting them to the point that they can become the protagonists of their digital environments as digital workers checking for webaccessibility. Examples in this direction are documented in the *Digital Skills Toolkit* (ITU, 2018), where two experiences, one from Egypt and the other from the UK, are reported. In Egypt, the Ministry of Communications and Information Technology (MCIT) promoted a lifelong learning programme to support persons with disabilities to find a job while also providing training on both basic digital skills for citizenship and advanced digital skills as requested from IT companies. In the UK, the Discover IT programme ensures access to computers and assistive technologies through 19 accessible IT centres, managed either by Leonard Cheshire Disability (a UK based charity) or in partnership with other organizations. Another programme, Discover IT@Home, brought IT and support to clients' homes. More than 7,600 individuals participated in these programmes between 2010 and 2015 giving positive feedback: "I didn't realise as a disabled person how important having a computer and internet could be - now I do... It's liberated me."
- Youth at risk of social exclusion. For young people at risk of social exclusion, school and more generally the formal education system is far from providing them with relevant involvement in terms of their marginalisation (*why*). Exploring informal digital approaches with young adults as a starting point to bridging the formal and informal learning experiences (*how*) may be an effective strategy to promote digital competences associated with information, communication and digital creativity (*what*). This is well documented in examples such as the MyMobile project. In particular, in one of the training scenarios, young disadvantaged adults from the UK are involved in a mobile learning project to produce



digital artefacts and develop their media production skills. Another interesting experience is the <u>Links-up</u> project aimed at promoting Web 2.0 tools for adults' social inclusion. Among the several workshops organised by the project's partners, the "<u>Tell Your Resume</u>" activity deserves to be mentioned: through a digital storytelling exercise, participants were involved in the design and implementation of their multimedia CV to be spread out online through the social media.

## 3. Digital competence for employability

In 2017 the European Commission – DG CONNECT published the results of the study <u>ICT for Work:</u> <u>Digital skills in the workplace</u>, aimed at investigating the transformation of jobs in the EU digital economy, the extent to which digital technologies have penetrated into workplaces and the digital skills required today by employers and the labour market. The study highlights how the digitisation of the economy is contributing to the **polarisation of the labour market**: on one hand, it has led to an increased demand for high-skilled individuals, able to use the new technologies to carry out their professional tasks; on the other hand, it has led to a decreased demand for low-skilled workers. Again, the automation based on smart technologies replacing the humans has resulted in some cases in jobs losses, while at the same time the process of digitisation is favouring the emergence of new jobs requiring cognitive and interactive abilities that are complementary to computer-based work. Moreover, digitisation is also leading to the transformation of existing jobs, reshaping the job tasks and, consequentially, the skills that are necessary to perform certain jobs.

Recent figures on digital skills and labour market indicate the increasing mismatch between the digital skills needed on the side of job demand and the digital skills currently available on the supply side. More specifically, according to statistics related to 2017, the 85% of jobs in EU need basic digital skill level, while the 43% of the EU population did not have a sufficient level of digital skills (*Eurostat 2017 data*). Furthermore, Eurostat data shows how rapidly the job tasks of the employed internet users are changing, due to the evolution of the various software used in the workplace: 29% of workers had to learn how to use new equipment for their job and part of them admitted to need further training.

In this changing situation, DigComp has been used to analyse the occupations' competence requirements and the definition of professional digital profiles distinguishing among the following sectors (see *DigComp at Work*. *The EU's digital competence framework in action on the labour market: a selection of case studies*):

• existing occupations such as administrative worker in the public administration, primary school and early childhood teacher etc.;

- EPALE Electronic Platform for Adult Learning in Europe
- generic business functions such as operations and industrial services, marketing & sales, etc;
- generic work conditions such as entrepreneur, virtual office worker, consultant for the Third Sector, employment services staff;
- new IT-intensive jobs in different economic sectors (Industry 4.0 jobs in manufacturing, new digital jobs in museums), and distinct IT specialist job profiles.

The categories mentioned above need to develop different levels of digital competence in the different areas. For example, based on the case studies documented in <u>DigComp at Work. The EU's</u> <u>digital competence framework in action on the labour market: a selection of case studies</u>, employment services staff need intermediate and advanced levels of digital competence in all areas, while for primary school and early childhood teachers the relevance is limited to certain areas such as developing contents or protecting devices. Of course, for digital professions such as digital collections curator or online community manager, high proficiency level of digital competence is transversal to several examples reported in the document.

With some adaptation, DigComp has been also used as a tool for self-assessment and/or certification and/or to design the training provision. For example, in 2012 the Basque Country Government promoted the <u>Ikanos</u> project to build a learning support platform for the digital competence needs of citizens, employed and/or unemployed people. DigComp was used to develop a set of tools, comprising a self-assessment test for career and training guidance as well as to increase the employability of unemployed people, 15 Professional Digital Profiles, the Ikanos Personal Learning Environment (PLE) for continuous development of digital competence and the new digital competence certification system BAIT. From the point of view of education and training, the idea of a PLE is particularly interesting: a PLE is a system that help "learners take control of and manage their own learning. This includes providing support for learners to set their own learning goals and manage their learning; managing both content and process; communicate with others in the process of learning and thereby achieve learning goals. Important concepts in PLEs include the integration of both formal and informal learning episodes into a single experience, the use of social networks that can cross institutional boundaries, and the use of networking protocols (Peer-to-Peer, web services, syndication) to connect a range of resources and systems within a personally-managed space." (see <u>Personal Learning Environments Definition</u>). Since the digital world is continuously transforming, learning about digital technologies cannot be realised once and for all: it requires continuous learning and learning to learn within self-managed and personalised spaces of learning.



😳 Erasmus+



#### 4. Suggestions for trainers

As mentioned in the introductory paragraph, we are now at the <u>2.1 version of DigComp</u>. The fact that it is being constantly updated shows the dynamic nature of this competence: since ITCs are continuously changing, what must be learned about the digital landscape is constantly transforming. Therefore, being a digitally competent individual is a moving target for citizens requiring cognitive flexibility and openness towards change. A key message from this for adults' trainers in the field is that, rather than focussing on merely technical knowledge or specific IT tools, which risk becoming rapidly obsolete, **trainers should encourage learners to approach "the machine" by trial and error stimulating exploratory attitudes, abductive abilities and problem-solving skills**.

As for the exploratory attitudes, the trainers should encourage the trainees to approach the new software and/or digital interfaces with curiosity, looking around the screen, trying and testing, formulating hypotheses on the functions associated to the icons. Therefore, rather than stressing the need for memorising technical procedures – which is also challenging especially for older people, trainers should encourage <u>trial-and-error learning</u> processes, where making mistakes is not a shame but a productive way to reflect on the causes of the error, while being successful may generate new good practices. The already mentioned project <u>GIRDA</u>, based on approaching IT through social gaming, could be an example of facilitating learning about IT by trying rather than memorizing.

Trainers should also promote abductive processes of making inferences related to the elaboration of information found on the web: indeed, while browsing the web is not a linear process, serendipity is a main feature of the way how we access online resources. Serendipity is defined as "the fact of something interesting or pleasant happening by chance" (Oxford Learner's Dictionaries). This involves a positive attitude towards the unknown or also a pleasure for random discoveries. But in order to make sense of random discoveries the ability to carry on abductive inferences becomes crucial. Abduction, according to Peirce, has to do with inferential processes leading to the formation of explanatory theories and the generation of new ideas. It is like an insight on a reality to make sense of it. Thinking of the web, the navigation experience from one Internet source to another requires users to develop the ability to generate new meanings in the wide landscape of the digital networked complexity (see also the <u>Perriault</u>, 2002). Inspiration for information literacy programmes can be taken from the guidelines and the initiatives of the Association of College & Research Libraries (ACRL).

Finally, in the face of the several challenges of the digital world, trainers should support the development of problem-solving skills associated to the use of technologies. Problem-solving skills come into play in a double sense: on one side, they are meant as the capacity of solving technological issues, on the other side, they refer to the ability of proposing technological solutions for the problems of everyday life. Both senses are clearly identified in the <u>DigComp</u> framework





where the problem-solving skills associated with digital technologies include abilities such as solving technical problems from trouble-shooting to solving more complex problems; identifying needs and technological responses through the critical evaluation of possible solutions; creatively using technology for multimedia production and expression of oneself. Learning by doing approaches are recommended to promote this type of skill and digital media offers several opportunities to engage adult learners in creative process of multimedia production. Making an artefact such as the multimedia resume, which was the aim of the previously mentioned Links-up workshop, allows trainees to get involved in learning by doing activities requiring learners to confront with technical challenges as well as being creative and expressing themselves.

To conclude, digital competence has to do not only with technologies but also – and mostly – with transversal skills that are crucial for lifelong learning processes. Through the promotion of trialand-error learning processes, serendipity and abductive reasoning as well as learning by doing, trainers may encourage adult learners to improve their digital competences both for active citizenship and as a means for continuous professional development and learning.

#### For further reading

1. To **go deeper in the understanding of 21st century skills and competences** we suggest reading reports and documents available on the EU website dedicated to *Learning and Skills for the digital era*, which also provides an overview of the several opportunities that adult learners may found on the web within the framework of Open Education.

2. To **keep updated on the evolution of the DigComp framework** and related initiatives we recommend the EU website <u>DIGCOMP – Digital Competence framework for citizens</u>

#### About the author

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