



# LAB-ADA

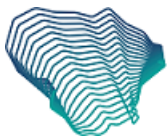
LAB for Adults non-formal Digital Awareness



Mapping frame for  
improvements of low  
skilled adults learning



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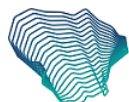


## MAPPING FRAME DEVELOPMENT

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# Introduction

The Mapping Frame Development concerns the adults' expertise and capacity to elaborate the content, the identification of factors that support low skill adults' interest in relevant learning opportunities and better possibilities to be involved in non-formal learning, and a description of various digital skills, defined as a well-documented skillset, interlined with the identified factors that can support LSA. The results were combined in this document with a uniformed and consistent format.

Following the Desk Research and the [Europe's Digital Decade](#), the decision of the LAB-ADA Expert Working Group (EGW) was the selection of the general EU framework of [DigComp](#), focusing on the last version (2022) of DigComp 2.2:

- DigComp 2.0, [joint-research-centre.ec.europa.eu/digcomp/digital-competence-framework-20\\_en](https://joint-research-centre.ec.europa.eu/digcomp/digital-competence-framework-20_en),
- DigComp 2.1, [publications.jrc.ec.europa.eu/repository/handle/JRC106281](https://publications.jrc.ec.europa.eu/repository/handle/JRC106281)
- DigComp 2.2, [publications.jrc.ec.europa.eu/repository/handle/JRC128415](https://publications.jrc.ec.europa.eu/repository/handle/JRC128415) (pdf)

The new integrated **DigComp 2.2 Framework** ([22 March 2022](#)) *<focuses on examples of the knowledge, skills, and attitudes applicable to each competence (dimension 4). For each of the 21 competencies, 10-15 statements are given to illustrate timely and updated examples that highlight contemporary themes. As such, the update does not alter descriptors of the conceptual reference model and it does not change how proficiency levels are outlined (Dimension 3). Also, use cases and learning scenarios presented in Dimension 5 remain the same=.*

For the purposes of the **LAB-ADA Mapping Framework**, a broad spectrum of factors (individual and contextual) explored and explicated associated with the **5 main competence areas**, as a 1st dimension named **Pillars**, of gaining **18 skills for the LSAs**, as 2nd dimension named **Skillset** (from the initial 21 competences of the DigComp Framework, according to the needs analysis of the Survey Report).

<b>PILLAR</b> <i>(dimension 1: Competence Areas)</i>	<b>SKILLSET</b> <i>(dimension 2: Competences focusing on Skills)</i>
<b>Pillar 1:</b> Information and Data Literacy <i>(Responsible Partner: Eco Logic, MK)</i>	1.1 Browsing, searching and filtering 1.2 Evaluating info and content 1.3 Managing info and content
<b>Pillar 2:</b> Communication and Collaboration <i>(Responsible Partner: CSCI, IT)</i>	2.1 Interacting 2.2 Sharing 2.3 Engaging in citizenship 2.4 Collaborating 2.5 Netiquette
<b>Pillar 3:</b> Digital Content Creation <i>(Responsible Partner: EcoKtima)</i>	3.1 Developing content 3.2 Integrating and re-elaborating 3.3 Copyright and licenses
<b>Pillar 4:</b> Safety and Ethics <i>(Responsible Partner: Prometeo, IT)</i>	4.1 Protecting devices 4.2 Protecting personal data and privacy 4.3 Protecting health and well-being 4.4 Protecting the environment
<b>Pillar 5:</b> Problem Solving <i>(Responsible Partner: LIBA, LT)</i>	5.1 Solving technical problems 5.2 Identifying needs and responses 5.3 Creatively using digital technologies



DIMENSION 1 • COMPETENCE AREA  
**1. INFORMATION AND DATA LITERACY**

DIMENSION 2 • COMPETENCE  
**1.3 MANAGING DATA, INFORMATION AND DIGITAL CONTENT**

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

DIMENSION 3 • PROFICIENCY LEVEL		
FOUNDATION	1 At basic level and with guidance, I can:	<ul style="list-style-type: none"> <li>identify how to organise, store and retrieve data, information and content in a <b>simple way</b> in digital environments;</li> <li>recognise where to organise them in a <b>simple way</b> in a structured environment.</li> </ul>
	2 At basic level and with appropriate guidance where needed, I can:	<ul style="list-style-type: none"> <li>identify how to organise, store and retrieve data, information and content in a <b>simple way</b> in digital environments;</li> <li>recognise where to organise them in a <b>simple way</b> in a structured environment.</li> </ul>
INTERMEDIATE	3 On my own and solving straightforward problems, I can:	<ul style="list-style-type: none"> <li>select data, information and content in order to organise, store and retrieve them in a <b>routine way</b> in digital environments;</li> <li>organise them in a <b>routine way</b> in a structured environment.</li> </ul>
	4 Independently, according to my own needs, and solving well-defined and non-routine problems, I can:	<ul style="list-style-type: none"> <li>organise information, data and content to be easily stored and retrieved;</li> <li>organise information, data and content in a structured environment.</li> </ul>
ADVANCED	5 As well as guiding others, I can:	<ul style="list-style-type: none"> <li>manipulate information, data and content for their easier organisation, storage and retrieval;</li> <li>carry out their organisation and processing in a structured environment.</li> </ul>
	6 At advanced level, according to my own needs and those of others, and in complex contexts, I can:	<ul style="list-style-type: none"> <li>adapt the management of information, data and content for the <b>most appropriate</b> easy retrieval and storage;</li> <li>adapt them to be organised and processed in the <b>most appropriate</b> structured environment.</li> </ul>
HIGHLY SPECIALISED	7 At highly specialised level, I can:	<ul style="list-style-type: none"> <li>create solutions to <b>complex problems with limited definition</b> that are related to managing data, information, and content for their organisation, storage and retrieval in a structured digital environment;</li> <li>integrate my knowledge to contribute to professional practices and <b>knowledge and to guide others</b> in managing data, information and digital content in a structured digital environment.</li> </ul>
	8 At the most advanced and specialised level, I can:	<ul style="list-style-type: none"> <li>create solutions to solve <b>complex problems with many intersecting factors</b> that are related to managing data, information, and content for their organisation, storage and retrieval in a structured digital environment;</li> <li>propose <b>new ideas and processes</b> to the field.</li> </ul>

DIMENSION 4 • EXAMPLES OF KNOWLEDGE, SKILLS AND ATTITUDES	
KNOWLEDGE	31. Aware that many applications on the internet and mobile phones collect and process data (personal data, behavioural data and contextual data) that the user can access or retrieve, for example, to monitor their activities online (e.g. clicks in social media, searches on Google) and offline (e.g. daily steps, bus rides on public transport).
	32. Aware that for data (e.g. numbers, text, images, sounds) to be processed by a program, they have to be first properly digitised (i.e. digitally encoded).
	33. Knows that data collected and processed, for example by online systems, can be used to recognise patterns (e.g. repetitions) in new data (i.e. other images, sounds, mouse clicks, online behaviour) to further optimise and personalise online services (e.g. advertisements).
	34. Aware that sensors used in many digital technologies and applications (e.g. facial tracking cameras, virtual assistants, wearable technologies, mobile phones, smart devices) generate large amounts of data, including personal data, that can be used to train an AI system. (AI)
SKILLS	35. Knows that open data repositories exist where anyone can get data to support some problem solving activities (e.g. citizens can use open data to generate thematic maps or other digital content).
	36. Knows how to collect digital data using basic tools such as online forms, and present them in an accessible way (e.g. using headers in tables).
	37. Can apply basic statistical procedures to data in a structured environment (e.g. spreadsheet) to produce graphs and other visualisations (e.g. histograms, bar charts, pie charts).
	38. Knows how to interact with dynamic data visualisation and can manipulate dynamic graphs of interest (e.g. as provided by Eurostat, government websites).
ATTITUDES	39. Can differentiate between different types of storage locations (local devices, local network, cloud) that are the most appropriate to use (e.g. data on the cloud is available anytime and from anywhere, but has implications for access time).
	40. Can use data tools (e.g. databases, data mining, analysis software) designed to manage and organise complex information, to support decision-making and solving problems.
	41. Considers transparency when manipulating and presenting data to ensure reliability, and spots data that are processed with underlying motives (e.g. unethical, profit, manipulation) or in misleading ways.
	42. Watchful of accuracy when evaluating sophisticated representations of data (e.g. tables or visualisations) as they could be used to mislead one's judgement by trying to give a false sense of objectivity.

DIMENSION 5 • USE CASES	
FOUNDATION	2
EMPLOYMENT SCENARIO: job seeking process	<ul style="list-style-type: none"> <li>At home with my sister who I ask whenever I need</li> <li>I can identify how and where to organise and keep track of job ads in a job app (e.g. www.indeed.com) of my smartphone in order to retrieve them when I need them along my job seeking</li> </ul>
LEARNING SCENARIO: prepare group work with my classmates	<p>In the classroom with my teacher who I can consult whenever I need</p> <ul style="list-style-type: none"> <li>I can identify an app in my tablet to organise and store links to those websites, blogs and digital databases related with a specific topic of literature and use it to retrieve them when needed for my report.</li> </ul>

Fig. 1: The structure of the DigCom2.2. Framework (Source: DigComp 2.2, 2022)

The DigComp 2.2 framework use the following structure (see Fig 1).

- Dimension 1: Competence Area
- Dimension 2: Competence
- Dimension 3: Professional Level
- Dimension 4/5: Examples and Learning Scenarios

The LAB-ADA Mapping Frame focuses at the dimension 3 and 4 trying to match these elements to the needs of LSAs. This mean that this framework choose only the foundation and intermediate level and select appropriate or new examples from the 4th and 5th dimensions.

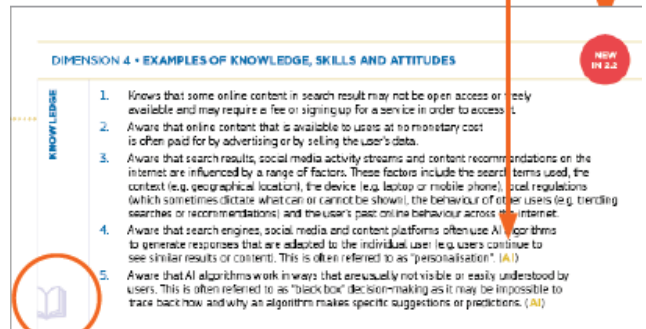
There is also something new that could be very useful for the LAB-ADA Project. The new integration of DigComp introduces the idea of <HIGHLIGHTED EXAMPLES= at the 4 dimensions (page 8, see Fig. 2). At the 4th Dimension, we can introduce our examples that could be highlighted as <LSA)=.

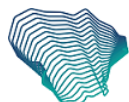
Each of the 5 Pillars of the LAB-ADA Mapping Framework is constructed based on the following 7 related fields:

- Title of the Pillar (dimension 1: Competence Areas)
- Skillsets of the Pillar (dimension 2: Competences focusing on skills)
- Skillsets Short Description (from DigComp Framework)
- Foundation & Intermediate Level (dimension 3: Professional Level, with guidance at foundation level and with autonomy and appropriate guidance where needed at intermediate level)
- Examples (dimension 4 & 5: Examples and Learning Scenarios)
- Examples for related story implementation (at least 5 examples, from which 4 of them is used for the development of the R2 stories)
- Quotes, References and other sources (of the Pillar)

A small red dot is used to introduce the new Dimension 4. It helps the reader quickly spot the new updated part.

Artificial intelligence, Remote Working and Digital Accessibility examples are highlighted with (AI), (RW), (DA).





## Pillar 1: Information and Data Literacy

Pillar 1 (dimension 1)	Skillsets (dimension 2)	Skillsets Short Description (DigComp Framework)
Information and Data Literacy	1.1 Browsing, searching and filtering 1.2 Evaluating info and content 1.3 Managing info and content	1.1 To articulate information needs, to locate and retrieve digital data, information and content. 1.2 To judge the relevance of the source and its content. 1.3 To store, manage, and organize digital data, information and content

Skillset (dimension 2)	Foundation & Intermediate Level (dimension 3)	Examples (relation to Cases - Learning Scenarios) (dimension 4 & 5)
1.1 Browsing, searching and filtering	<ul style="list-style-type: none"> <li>Identify information needs, find data, information, and content through a simple search in digital environments,</li> <li>Find how to access these data, information and content and navigate between them,</li> <li>Perform well-defined searches to find data, information, and content in digital environments,</li> <li>Explain how to access them and navigate between them,</li> <li>Identify simple personal search strategies.</li> </ul>	<ul style="list-style-type: none"> <li>Can choose the search engine that most likely meets one's information needs as different search engines can provide different results even for the same query.</li> <li>Knows how to improve search results by using a search engine's advanced features (e.g. specifying exact phrase, language, region, date last updated).</li> <li>Can make use of information presented as hyperlinks, in non-textual form (e.g. flowcharts, knowledge maps) and in dynamic representations (e.g. data).</li> <li>Develops effective search methods for personal purposes (e.g. to browse a list of most popular films) and professional purposes (e.g. to find appropriate job advertisements).</li> </ul>
1.2 Evaluating info and content	<ul style="list-style-type: none"> <li>Detect the credibility and reliability of common sources of data, information, and their digital content</li> <li>Perform the analysis, comparison, and evaluation of the credibility and reliability of well-defined sources of data, information, and digital content.</li> <li>Perform the analysis, interpretation, and evaluation of well-defined data, information, and digital content.</li> </ul>	<ul style="list-style-type: none"> <li>Can identify, from a list in the textbook of blogs and digital databases containing available literature, those that are commonly used because they are credible and reliable</li> <li>Can identify reliable websites and links (e.g. making a difference between information that is scientifically based against the one that isn't)</li> <li>Can categorize, manipulate and summarize the information in order to reach conclusions or make an assessment</li> </ul>
1.3 Managing info and content	<ul style="list-style-type: none"> <li>Identify how to organize, store and retrieve data, information, and content in a simple way in digital environments.</li> <li>Recognise where to organize them in a simple way in a structured environment.</li> </ul>	<ul style="list-style-type: none"> <li>Can identify an app, to organize and store links to those websites, blogs, and digital databases related to a specific topic of literature and use it to retrieve them when needed for a report.</li> <li>Can use different apps or software for data storage retrieved from different websites or documents and organize them in tables or other manner of organization provided by the app (e.g. using Google Calendar for noting appointments and meetings for the whole year)</li> </ul>

### Examples of related story implementation

1. Creation of any kind of article while collecting data from the web and relevant documents
2. Exploring other search engines than Google, such as Duck Duck Go, and evidencing differences

3. *Searching for a relevant job position in the field on the web*
4. *Creation of a calendar of musical events to attend for the following year, searched on the web and social media*
5. *Collecting information from different online articles and guidelines about how to write a good CV and present own skills*

**Quotes,  
References  
and other  
sources**

- <Digital games and game-based learning in general have been traditionally associated with the constructivist view on learning as they provide with sandbox environments where players are allowed to experiment and construct meaning out of their cognitive and emotional experiences= (Alexiou and Schipper, 2018).
- IDLF has identified six forms of digital literacies to support inclusion. For each of these, future work can define a scale to assess specific levels of literacy (Nedungadi et al., 2018).

## Pillar 2: Communication and collaboration

Pillar 2 (dimension 1)	Skillsets (dimension 2)	Skillsets Short Description (DigComp Framework)
Communication and collaboration:	2.1 Interacting 2.2 Sharing 2.3 Engaging in citizenship 2.4 Collaborating 2.5 Netiquette	<p>2.1 To interact through a variety of digital technologies and to understand appropriate digital communication means for a given context.</p> <p>2.2 To share data, information and digital content with others through appropriate digital technologies. To act as an intermediary, to know about referencing and attribution practices.</p> <p>2.3 To participate in society through the use of public and private digital services and participatory citizenship. To seek opportunities for self-empowerment and for participatory citizenship through appropriate digital technologies.</p> <p>2.4 To use digital tools and technologies for collaborative processes, and for co-construction and co-creation of data, resources and knowledge. To interact, communicate and collaborate through digital technologies while being aware of cultural and generational diversity.</p> <p>2.5 To be aware of behavioral norms and know-how while using digital technologies and interacting in digital environments. To adapt communication strategies to the specific audience and to be aware of cultural and generational diversity in digital environments.</p>

Skillset (dimension 2)	Foundation & Intermediate Level (dimension 3)	Examples (relation to Cases - Learning Scenarios) (dimension 4 & 5)
2.1 Interacting	<p><i>At a foundation level, learners can:</i></p> <ul style="list-style-type: none"> <li>Select simple digital technologies to interact,</li> <li>Identify appropriate simple communication means for a given context</li> </ul> <p><i>At the intermediate level, learners can:</i></p> <ul style="list-style-type: none"> <li>Select a variety of digital technologies to interact,</li> <li>Select a variety of appropriate digital communication means for a given context</li> </ul>	<ul style="list-style-type: none"> <li>Knows how to use a variety of videoconferencing features (e.g. moderating a session, recording audio and video),</li> <li>Able to achieve effective communication in asynchronous (non-simultaneous) mode using digital tools (e.g. for reporting and briefing, sharing ideas, giving feedback and advice, scheduling meetings, communicating milestones),</li> <li>Able to interact and give feedback to the AI system (e.g. by giving user ratings, likes, and tags to online content) to influence what it next recommends (e.g. to get more recommendations on similar movies that the user previously liked)</li> </ul>
2.2 Sharing	<p><i>At a foundation level, learners can:</i></p> <ul style="list-style-type: none"> <li>Recognise simple appropriate digital technologies to share data, information and digital content,</li> <li>Identify simple referencing and attribution practices,</li> <li>Share data, information and digital content</li> </ul> <p><i>At intermediate level, learners can:</i></p> <ul style="list-style-type: none"> <li>Manipulate appropriate digital technologies to share data, information and digital content</li> </ul>	<ul style="list-style-type: none"> <li>Knows how to share digital content (e.g. pictures) across multiple devices (e.g. from smartphones to cloud services),</li> <li>Able to select and restrict with whom the content is shared (e.g. giving access only to friends on social media, allowing only co-workers to read and comment on a text),</li> <li>Knows how to acknowledge the original source and authors of shared content</li> </ul>

	<ul style="list-style-type: none"> <li>● Explain how to act as an intermediary for sharing information and content through digital technologies</li> </ul>	
2.3 Engaging in citizenship	<p><i>At a foundation level, learners can:</i></p> <ul style="list-style-type: none"> <li>● Identify simple digital services in order to participate in society,</li> <li>● Recognise simple appropriate digital technologies to empower myself and to participate in society as a citizen,</li> <li>● Empower myself and to participate in society as a citizen,</li> <li>● Select digital services in order to participate in society</li> </ul> <p><i>At intermediate level, learners can:</i></p> <ul style="list-style-type: none"> <li>● Select digital services in order to participate in society</li> <li>● Discuss appropriate digital technologies to empower myself and to participate in society as a citizen</li> </ul>	<ul style="list-style-type: none"> <li>● Knows how to acquire certificates from a certification authority, for the purpose of secure electronic identification,</li> <li>● Knows how to engage with others through digital technologies for the sustainable development of society (e.g. create opportunities for joint action across communities, sectors, and regions with different interests in sustainability challenges) with an awareness of technology's potential for both inclusion/participation and exclusion</li> </ul>
2.4 Collaborating	<p><i>At a foundation level, learners can:</i></p> <ul style="list-style-type: none"> <li>● Choose simple digital tools and technologies for collaborative processes</li> </ul> <p><i>At the intermediate level, learners can:</i></p> <ul style="list-style-type: none"> <li>● Select well-defined and routine digital tools and technologies for collaborative processes</li> <li>● Select digital tools and technologies for collaborative processes</li> </ul>	<ul style="list-style-type: none"> <li>● Knows how to use digital tools in a collaborative context to plan and share tasks and responsibilities within a group of friends, a family or a sport or work team (e.g. digital calendar, planners for trips and leisure activities),</li> <li>● Knows how to use digital tools and technologies in a remote working context for idea generation and co-creation of digital content (e.g. shared mind maps and whiteboards, polling tools)</li> </ul>
2.5 Netiquette	<p><i>At a foundation level, learners can:</i></p> <ul style="list-style-type: none"> <li>● Differentiate simple behavioral norms and know-how while using digital technologies and interacting in digital environments,</li> <li>● Choose simple communication modes and strategies adapted to an audience and differentiate simple cultural and generational diversity aspects to consider in digital environments</li> </ul> <p><i>At an intermediate level, learners can:</i></p> <ul style="list-style-type: none"> <li>● Clarify well-defined and routine behavioural norms and know-how while using digital technologies and interacting in digital environments</li> <li>● Describe well-defined and routine cultural and generational diversity aspects to consider in digital environments.</li> </ul>	<ul style="list-style-type: none"> <li>● Knows how to stop receiving unwanted disturbing messages or emails,</li> <li>● Able to manage one's feelings when talking with other people on the internet,</li> <li>● Knows how to recognise hostile or derogatory messages or activities online that attack certain individuals or groups of individuals (e.g. hate speech)</li> </ul>

#### Examples for related story implementation

1. *Communication around the world and set an appointment*
2. *Synchronous Communication in any language using mobile devices*
3. *Searching and giving feedbacks to a destination on the planet*
4. *Searching for Mass Media in order to move from a place to another*
5. *Use the proper language to communicate online with the other*
6. *Sharing ideas and files with others*



7. *Communicate effectively using non direct digital tools*
8. *Organize <social= groups/use tools to engage the citizenships*

**Quotes,  
References  
and other  
sources**

- <The issue of cross-cultural communication and training is not specific to any one academic discipline it is an area of investigation for a variety of disciplines: ranging from linguistics and communication studies to sociology= (Foley, 2020)



## Pillar 3: Digital content creation

Pillar 3 (dimension 1)	Skillsets (dimension 2)	Skillsets Short Description (DigComp Framework)
Digital content creation	3.1 Developing content 3.2 Integrating and re-elaborating 3.3 Copyright and licenses	3.1 To create and edit digital content in different formats, to express oneself through digital means. 3.2 To modify, refine and integrate new information and content into an existing body of knowledge and resources to create new, original and relevant content and knowledge. 3.3 To understand how copyright and licences apply to digital information and content.

Skillset (dimension 2)	Foundation & Intermediate Level (dimension 3)	Examples (relation to Cases - Learning Scenarios) (dimension 4 & 5)
3.1 Developing content	<p><i>At a foundation level, learners can:</i></p> <ul style="list-style-type: none"> <li>Choose how I express myself through the creation of simple digital means / well-defined and routine digital means</li> <li>Identify ways to create and edit simple content in simple formats</li> </ul>	<ul style="list-style-type: none"> <li>Knows that digital content exists in a digital form and that there are many different types of digital content (e.g. audio, image, text, video, applications) that are stored in various digital file formats</li> <li>Open to explore alternative pathways to find solutions to produce digital content</li> <li>Knows how to create digital content to support one's own ideas and opinions (e.g. to produce data representations such as interactive visualisations using basic datasets such as open government data)</li> </ul>
3.2 Integrating and re-elaborating	<p><i>At a foundation level, learners can:</i></p> <ul style="list-style-type: none"> <li>Select ways to modify, refine, improve and integrate simple items of new content and information to create new and original ones</li> <li>Discuss ways to modify, refine, improve and integrate new content and information to create new and original ones</li> </ul>	<ul style="list-style-type: none"> <li>Can create infographics and posters combining information, statistical content and visuals using available apps or software</li> <li>Knows how to use tools and applications (e.g. add-ons, plug-ins, extensions) to enhance digital accessibility of digital content (e.g. adding captions in video players to a recorded presentation)</li> <li>Open to creating something new from existing digital content using iterative design processes (e.g. create, test, analyse and refine ideas)</li> <li>Identify how to update a digital animated presentation I have created to present my work to my colleagues, adding text, images and visual effects to be shown in various environments</li> <li>Inclined to use available tools to verify whether images or videos have been modified (e.g. by deep-fake techniques)</li> </ul>



<p><b>3.3 Copyright and licenses</b></p>	<p><i>At a foundation level, learners can:</i></p> <ul style="list-style-type: none"> <li>● Identify simple rules of copyright and licenses that apply to data, digital information and content</li> <li>● Aware that certain copyright exceptions exist (e.g. use for the purpose of illustration for teaching, for caricature, parody, pastiche, for quotation, private uses)</li> <li>● Aware that mechanisms and methods to block or limit access to digital content exist (e.g. passwords, geo-blocking, Technical Protection Measures)</li> </ul>	<ul style="list-style-type: none"> <li>● Knows that digital content, goods and services might be protected under intellectual property (IP) rights (e.g. copyright, trademarks, designs, patents)</li> <li>● Able to identify and select digital content for downloading or uploading legally</li> <li>● Explain to a friend which image banks someone usually use to find images for downloading completely free of charge to create a digital animation to present a work</li> <li>● Open to consider whether open licences or other licence schemes are more suitable when producing and publishing digital content and resources</li> </ul>
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<p><b>Examples of related story implementation</b></p> <ol style="list-style-type: none"> <li>1. <i>Creation of a complete social media profile</i></li> <li>2. <i>Creation of a Playlist creation using AI tools (songs, videos etc)</i></li> <li>3. <i>Creation and curation of elegant-complete documents, posts with links</i></li> <li>4. <i>Scanning and organize non-digital archives (image processing)</i></li> <li>5. <i>Creation and organize records of data (worksheet processing)</i></li> <li>6. <i>Creation of a video with my profile and my competences</i></li> </ol>	
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<p><b>Quotes, References and other sources</b></p>	<ul style="list-style-type: none"> <li>- &lt;Digit=[..] future graduates had an upper intermediate level of competence in information and digital literacy, communication and collaboration, but a lower intermediate level in terms of digital content creation, particularly in the creation and dissemination of multimedia content using different tools.&lt; (López-Meneses et al., 2020)</li> <li>- &lt;Social media, with its affordances for personal profiling, relationship-building, content creation and socializing, when thoughtfully integrated into an online education plan, can help students and teachers stay connected while apart, enhance students’ engagement, and make remote learning seem less remote.= (Greenhow and Galvin, 2020)</li> </ul>
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## Pillar 4: Safety and Ethics

Pillar 4 (dimension 1)	Skillsets (dimension 2)	Skillsets Short Description (DigComp Framework)
Safety and Ethics	4.1 Protecting devices 4.2 Protecting personal data and privacy 4.3 Protecting health and well-being 4.4 Protecting the environment	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.

Skillset (dimension 2)	Foundation & Intermediate Level (dimension 3)	Examples (relation to Cases - Learning Scenarios) (dimension 4 & 5)
4.1 Protecting devices	<i>At a foundation level, learners can:</i> <ul style="list-style-type: none"> <li>Identify simple ways to protect my devices and digital content</li> <li>Differentiate simple risks and threats in digital environments</li> <li>Choose simple safety and security measures,</li> <li>Identify simple ways to have due regard to reliability and privacy</li> <li>Identify simple ways to protect my devices and digital content</li> <li>Differentiate simple risks and threats in digital environments</li> <li>Follow simple safety and security measures.</li> <li>Identify simple ways to have due regard to reliability and privacy</li> </ul>	<ul style="list-style-type: none"> <li>Protect the personal social media account using different methods (e.g. a strong password, control the recent logins) and show new colleagues how to do it</li> <li>Detect risks like receiving tweets and messages from followers with false profiles or phishing attempts</li> <li>Apply measures to avoid them (e.g. control the privacy settings)</li> <li>Also help colleagues to detect risks and threats while using a social media</li> <li>Protect information, data and content on my learning platform (e.g. a strong password, control the recent logins)</li> <li>Detect different risks and threats when accessing digital platform and apply measures to avoid them (e.g. how to virus-check attachments Before downloading)</li> <li>Also help others to detect risks and threat while using the digital learning platform on their tablets (e.g. controlling who can access the files)</li> </ul>
4.2 Protecting personal data and Privacy	<i>At a foundation level, learners can:</i> <ul style="list-style-type: none"> <li>Select simple ways to protect personal data and privacy in digital environments</li> <li>Identify simple ways to use and share personally identifiable information while protecting myself and others from damages</li> <li>Identify simple privacy policy statements of how personal data is used in digital services</li> <li>Select simple ways to protect the personal data and privacy in digital environments</li> <li>Identify simple ways to use and share personally identifiable information while protecting myself and others from damages,</li> <li>Identify simple privacy policy statements of how personal data is used in digital services.</li> </ul>	<ul style="list-style-type: none"> <li>Select the most appropriate way to protect my personal data (e.g. address, phone number), before sharing it on the digital platform</li> <li>Distinguish between appropriate and inappropriate digital content to share it on the digital platforms, so that my privacy and that of my colleagues are not damaged</li> <li>Assess whether the way my personal data are used on the digital platform is appropriate and acceptable as regards my rights and privacy.</li> <li>Overcome complex situations that can arise with my personal data and those of my colleagues while on the digital platforms, such as personal data is not used in accordance to the &lt;Privacy policy= of the platform</li> </ul>
4.3 Protecting health and well-being	<i>At a foundation level, learners can:</i> <ul style="list-style-type: none"> <li>Differentiate simple ways to avoid health risks and threats to physical and</li> </ul>	<ul style="list-style-type: none"> <li>Create a digital campaign of possible health dangers of using a social media</li> </ul>

psychological well-being while using digital technologies

- Select simple ways to protect myself from possible dangers in digital environments
- Identify simple digital technologies for social well-being and social inclusion.

*At Intermediate level, learners can:*

- Explain well-defined and routine ways to how to avoid health risks and threats to physical and psychological well-being while using digital technologies
- Select well-defined and routine ways to protect myself from dangers in digital environments

- Act for professional reasons (e.g. bullying, addictions, physical well-being) which can be shared and used by other colleagues and professionals on their smartphones or tablets
- Create a blog on stalking and mobbing and social exclusion on the platforms I use, which helps my colleagues to recognise and face up to violence in digital environments
- Create a new eBook to answer questions on the sustainable use of digital devices at work and home, and share it on my digital platforms in order to be used by other colleagues and their peers

### Examples for related story implementation

1. *Creating a video telling a story about the <Trojan Horse=, on the risk of receiving posts and messages from followers with false profiles and consequences;*
2. *Creating a video telling a Story about <Watch and trick=, on the risks associated with phishing attempts;*
3. *Create a video that tells a story about the "Bad wolfe=" and know how to detect risks and threats while using social media;*
4. *Creating a video telling a Story about the <Making strong password= and the risk connected with not using passwords in a proper way;*
5. *About the Appropriate and inappropriate digital content to share on digital platforms (see the topic covered on video No. 3).*

### Quotes, References and other sources

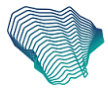
Riina Vuorikari, Stefano Kluzer, Yves Punie, *The Digital Competence Framework for Citizens with New Examples of Knowledge, Skills and Attitudes*, Luxembourg: Publications Office of the European Union, 2022 © European Union, 2022



## Pillar 5: Problem solving

Pillar 5 (dimension 1)	Skillsets (dimension 2)	Skillsets Short Description (DigComp Framework)
Problem solving	5.1 Solving technical problems 5.2 Identifying needs and responses 5.3 Creatively using digital technologies 5.4 Identifying digital competence gaps	5.1. To identify technical problems when operating devices and using digital environments, and to solve them (from trouble-shooting to solving more complex problems). 5.2. To assess needs and to identify, evaluate, select and use digital tools and possible technological responses and to solve them. To adjust and customise digital environments to personal needs (e.g. accessibility) . To resolve conceptual problems and problem situations in digital environments. 5.3. To use digital tools and technologies to create knowledge and to innovate processes and products. To engage individually and collectively in cognitive processing to understand and resolve conceptual problems and problem situations in digital environments. 5.4. To understand where one’s own digital competence needs to be improved or updated. To be able to support others with their digital competence development. To seek opportunities for self-development and to keep up-to-date with the digital evolution.

Skillset (dimension 2)	Foundation & Intermediate Level (dimension 3)	Examples (relation to Cases - Learning Scenarios) (dimension 4 & 5)
5.1 Solving technical problems	<p><i>At a foundation level, learners can:</i></p> <ul style="list-style-type: none"> <li>● identify simple technical problems when operating devices and using digital environments and simple solutions to solve them.</li> </ul> <p><i>At an intermediate level, learners can:</i></p> <ul style="list-style-type: none"> <li>● indicate well-defined and routine technical problems when operating devices and using digital environments and select well-defined and routine solutions to them.</li> <li>● differentiate technical problems when operating devices and using digital environments and select solutions to them.</li> </ul>	<ul style="list-style-type: none"> <li>● identify and solve a camera and/or a microphone issue when in an online meeting</li> <li>● verify and troubleshoot problems related to interconnected IT devices and their services</li> <li>● find solutions on the internet when facing a simple technical problem</li> </ul>
5.2 Identifying needs and responses	<p><i>At a foundation level, learners can:</i></p> <ul style="list-style-type: none"> <li>● Identify and explain needs, and recognise and select digital tools and possible technological responses to solve those needs.</li> </ul>	<ul style="list-style-type: none"> <li>● Use the internet to conduct transactions (e.g. purchasing, selling) and non-commercial ones (e.g. donating, gifting) of goods and services of all kinds.</li> <li>● Use machine translation solutions (e.g. Google Translate, DeepL)</li> <li>● And simultaneous interpretation apps (e.g. iTranslate) to get a rough understanding of a document or</li> </ul>



	<ul style="list-style-type: none"> <li>Choose and select ways to adjust and customise digital environments to personal needs. <i>At an Intermediate level, learners can:</i></li> <li>Indicate well-defined and routine needs, and select well-define and routine digital tools and possible technological responses to solve those needs</li> <li>Select well-defined and routine ways to adjust and customise digital environments to personal needs</li> </ul>	<p>conversation. However, also know that when the content requires an accurate translation (e.g. in healthcare, commerce or diplomacy), a more precise translation may be needed</p> <ul style="list-style-type: none"> <li>Choose assistive tools to better access information and content online (e.g. screen readers, voice recognition tools), and to take advantage of voice output options to produce speech (e.g. to be used by individuals who have limited or no means to communicate orally)</li> </ul>
<p>5.3 Creatively using digital technologies</p>	<p><i>At an foundation level, learners can:</i></p> <ul style="list-style-type: none"> <li>Identify, select, and differentiate simple digital tools and technologies that can be used to create knowledge and to innovate processes and products.</li> <li>Show interest and follow individually and collectively in simple cognitive processing to understand and resolve simple conceptual problems and problem situations in digital environments.</li> </ul> <p><i>At the intermediate level, learners can:</i></p> <ul style="list-style-type: none"> <li>Engage individually and collectively in some cognitive processing to understand and resolve well-defined and routine or conceptual problems and problem situations in digital environments</li> </ul>	<ul style="list-style-type: none"> <li>Use digital technologies to help turn one’s idea into action (e.g. master video making to open a channel to share recipes and nutrition tips for a specific dietary style)</li> <li>Identify online platforms that can be used to design, develop and test IT technologies and mobile apps</li> <li>Plan a strategy using multiple IT and mobile devices to implement a task (e.g. use a smartphone to optimize energy consumption in a room by setting the intensity of the lights based on the time of day and ambient light)</li> <li>Engage in resolving social problems through digital, hybrid, and non-digital solutions for the problem (e.g. public reporting systems, resource sharing platforms)</li> </ul>
<p>5.4 Identifying digital competence gaps</p>	<p><i>At a foundation level, learners can:</i></p> <ul style="list-style-type: none"> <li>Recognise and discuss where my own digital competence needs to be improved or updated.</li> <li>Identify and indicate where to seek opportunities for self-development and to keep up-to-date with the digital evolution.</li> </ul> <p><i>At an intermediate level, learners can:</i></p> <ul style="list-style-type: none"> <li>Explain where my digital competence needs to be improved or updated.</li> <li>Indicate how to support others to develop their digital competence.</li> </ul>	<ul style="list-style-type: none"> <li>Know how to get reliable feedback on digital competence through self-assessment tools, digital skills testing, and certification.</li> <li>Are capable of reflecting on one’s level of competence, and making plans and taking action to upskill (e.g. by joining the municipality training course on digital competence).</li> <li>Know how to talk about the importance of recognizing &lt;fake news=&gt; to others (e.g. elders, youngsters) by showing examples of reliable news sources, and how to differentiate between the two.</li> <li></li> </ul>

**Examples of related story implementation**

- Opening an email attachment that does not open on the first try.
- The computer cannot find a printer.
- Internet connection keeps dropping out.
- Using speech-to-text and text-to-speech software as needed.

5. *Creating short video greetings.*
6. *Creating colorful invitations to mark the anniversary.*
7. *Finding useful keyboard shortcuts on the Internet.*
8. *Defining fake news and finding alternative sources on the same topic.*
9. *Searching for the best tools for self-assessment of personal aptitude, digital skills testing and certification on the Internet.*

**Quotes,  
References  
and other  
sources**

- Regarding problem solving skills we found that simulation and case study are perceived as being similar but more effective than lectures. (Farashahi & Tajeddin, 2018)
- Collaborative problem solving (CPS) education and assessment are expected to improve when supported by larger data sets and theoretical frameworks that are informed by psychological science. This will require interdisciplinary efforts that include expertise in psychological science, education, assessment, intelligent digital technologies, and policy. (Graesser et al., 2018)