

Bridging the Digital Divide

**Enhancing Digital Competence
Development and Validation for Persons
with Learning Difficulties in Europe**

Policy Recommendations

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Executive Summary

Persons with learning difficulties remain at a significant risk of digital exclusion in Europe. Despite the European Union's Digital Decade ambition that at least 80% of citizens possess basic digital skills by 2030, persons with learning difficulties continue to face barriers to accessing digital technologies, participating in digital competence training, and having their competences validated. Although digital competence frameworks such as DigComp have become important reference points for digital-skills policies, such policies rarely address the specific needs of persons with learning difficulties. As a result, accessible training opportunities, assessment methods and validation procedures remain limited, fragmented, and often dependent on isolated projects or civil-society initiatives rather than embedded within mainstream policy frameworks.

This policy recommendations document is grounded in the evidence collected through the InDiCo (Increase Digital Competences to Promote Inclusion) project. The analysis draws on pan-European and country-level research conducted in Austria, Germany, Greece, Portugal, and Spain, including desk research, policy analysis, and input from practitioners and experts. The findings examine the implementation of the European Digital Competence Framework for Citizens (DigComp), the availability of initiatives to acquire digital competences adapted to the needs of persons with learning difficulties, and the extent to which assessment and validation systems support their inclusion. Across the countries analysed, the research identified common challenges in five key areas: accessibility and awareness of the digital-support needs of persons with learning difficulties; insufficient policy attention and financial resources; limitations in the quality of learning provision and professionalisation of practitioners; weak stakeholder coordination and use of common frameworks; and the lack of accessible assessment and validation systems for basic digital competences.

Persons with learning difficulties continue to encounter inaccessible training opportunities, limited access to tailored and cost-free learning provision, insufficient recognition in digitalisation and disability-rights policies, and assessment and validation systems that are rarely adapted to their needs. Furthermore, many practitioners lack the resources, training, and guidance necessary to provide high-quality digital competence support. Rapid technological developments, particularly in the area of artificial intelligence, risk widening existing digital divides if targeted action is not taken. At the same time, limited collaboration between policymakers, education and training providers,

employers, researchers, technology providers, and organisations representing persons with learning difficulties reduces the effectiveness and sustainability of current initiatives.

This document therefore calls for coordinated action from all stakeholders involved in Europe's digital transformation. European institutions, national and regional policymakers, digital-skills initiatives, education and training providers, assessment and certification bodies, employers, technology providers, disability organisations, and civil society actors all have a role to play in closing the digital gap experienced by persons with learning difficulties. The recommendations presented in this publication, targeting EU and national/local policymakers as well as service providers for persons with learning difficulties advocate for stronger policy commitments, increased investment, improved accessibility, enhanced practitioner support, stronger stakeholder cooperation, and the development of inclusive assessment and validation systems. They also emphasise the importance of involving persons with learning difficulties themselves in the design, implementation, and evaluation of digital competence initiatives.

The InDiCo project contributes practical resources to support this ambition, including a **Catalogue of Relevant Digital Competences**, a **Validation Methodology and Tool**, and a **Train-the-Trainer Manual** tailored to the needs of persons with learning difficulties. By implementing the calls to action outlined in this document, policymakers and practitioners can help ensure that persons with learning difficulties are fully included in Europe's digital future and are empowered to participate independently, safely, confidently, and meaningfully in an increasingly digital society.

1 Introduction

The European Commission's (2023b) targets for the digital decade envisage that at least 80% of those aged 16-74 shall have at least basic digital skills by 2030. The Digital Competence Framework for Citizens 2.2 (DigComp 2.2) (Vuorikari et al., 2022), which allows the categorisation and comparability of digital skills on eight levels, plays a key role in the European Commission's digital strategy (European Commission, 2022).

Although the DigComp 2.2 framework includes basic digital competences at levels 1 and 2, and the digital strategy aims for 'digital skills for all', persons with learning difficulties are at risk of exclusion. In the InDiCo project partners agreed on using the term '**persons with learning difficulties**' instead of 'persons with intellectual disabilities' to describe persons who experience challenges in all areas of life due to intellectual difficulties.

'**Learning difficulties**' encompass a range of challenges with regard to learning arising from various factors which can be genetic, neurobiological, cognitive, motivational, affective, or socioeconomic factors. It includes both general learning deficits and specific disorders like reading, spelling, or arithmetic difficulties. Diagnosis and intervention must be tailored to the individual, with some factors being more modifiable than others. Terminology and policies surrounding learning difficulties vary widely across regions and educational systems. Contemporary definitions are largely descriptive, focusing on addressing the specific needs of individuals to facilitate their learning progress in all areas of life (Lenhard & Lenhard, 2013).

Often training programmes are inaccessible to persons with learning difficulties, or the adult learning and education staff who support and accompany them have low digital competences themselves. Against this backdrop, the **InDiCo project aims for:**

- a clearer understanding of the competences required by persons with learning difficulties in their digital interactions
- a competence-based approach for adult learning and education staff in the assessment and training of digital competences
- and structured validation of digital competences in connection with the DigComp framework.

To this end, the project has produced a set of interlinked outputs that advance its goals and provide ready-to-use resources for both practice and policy:

- **Research & Situation Reports:** Pan-European and country-level reports mapping the current state, gaps and challenges in implementing the EU DigComp strategy for persons with learning difficulties.
- **Catalogue of Relevant Digital Competences:** focusing on basic digital competences at DigComp levels 1 & 2 tailored to the needs of persons with learning difficulties. It serves as a foundation for assessment, curriculum planning, and tailored training pathways.
- **Validation Methodology and Tool:** A competence-oriented methodology and tool aligned with the DigComp Reference Framework enable systematic validation of digital competences for the target group and support educators to use the framework in real-world settings.
- **Train-the-Trainer Manual:** A practical manual for adult educators and trainers that supports inclusive and competence-based digital skill development for learners with learning difficulties.
- **Policy Recommendations,** this publication: Evidence-based recommendations aimed at improving policy frameworks to ensure that persons with learning difficulties are better represented and supported within the EU digital competences agenda.

1.1 Policy Recommendations Structure

This Policy Recommendations document begins with **Section 1, the current introduction section**, which presents the InDiCo project, delves into the content of EU DigComp 2.2 and the recently published DigComp 3.0, introduces the central concepts of assessment and validation, followed by an explanation of the methodology and data used throughout the document.

Section 2 addresses the “policy issue and analysis”. Sub-section 2.1 provides an overview of the implementation of the EU DigComp framework, especially of proficiency levels 1 and 2, across Europe, and sub-section 2.2 describes the assessment and validation of digital competences at levels 1 and 2 for persons with learning difficulties. Each section presents the pan-European situation, as well as a comparative analysis among the five project partner’s countries (Austria, Germany, Greece, Portugal and Spain).

Sub-section 2.3 “**Analysis of the Problem: Gaps and Challenges regarding the digital inclusion of persons with learning difficulties**” provides an overview of the gaps identified across five areas: accessibility and awareness of the needs of persons with learning difficulties, policy and financial resources, quality of learning and

professionalisation, stakeholder collaboration and development of common frameworks and standards, and assessment and validation of digital skills. Each area describes different challenges where urgent action is needed.

Section 3 “Call to action: Policy Recommendations to Close the Digital Gap for Persons with Learning Difficulties” aims to provide actionable steps to overcome the challenges described in sub-section 2.3. This section provides clear recommendations targeting three levels of stakeholders: **EU-level policymakers, national-level policymakers, and service providers.**

Finally, Section 4 “Next Steps” serves as a conclusion of the Policy Recommendations document underlining its key findings and highlighting the most urgent next steps.

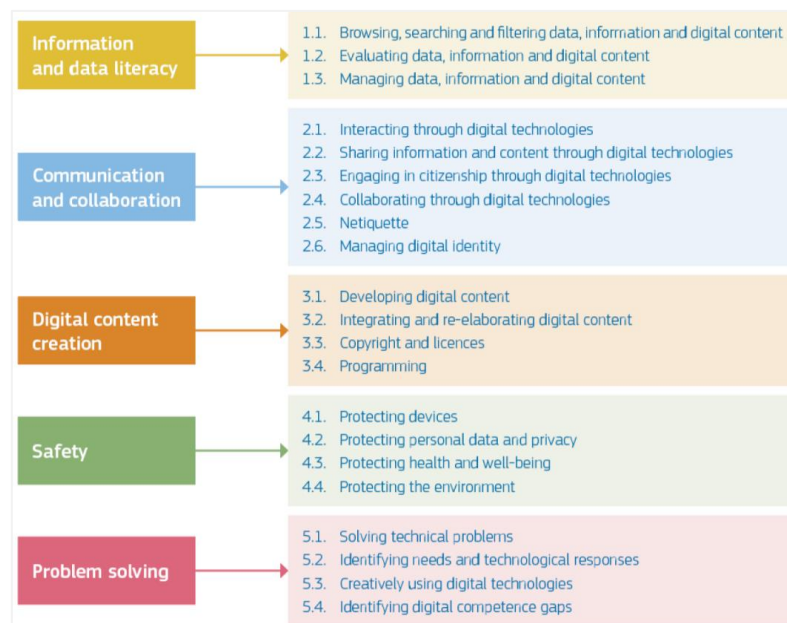
1.2 EU DigComp 2.2: The European Digital Competence Framework for Citizens

DigComp, a framework for developing and understanding digital competence in Europe, was first published in 2013 (Ferrari, 2013). Digital competence has been acknowledged as one of the eight key competences for Lifelong Learning by the European Union (Council of the European Union, 2018). Digital competence can be broadly defined as the confident, critical and creative use of information and communication technology to achieve goals related to work, employability, learning, leisure, inclusion and/or participation in society (Ferrari, 2013, p. 2). The DigComp framework aims to support the development of digital competence of individuals in Europe and represents an attempt to allow for self-assessment based on five areas of digital competence and three proficiency levels (p. 14) and presents a detailed framework with an in-depth description of the different aspects of 21 digital competences (pp. 15–36).

The latest version until December 2025 was EU DigComp 2.2, the digital competence framework for citizens (Vuorikari et al., 2022), an EU-wide tool to improve citizens’ digital competence, help policy-makers formulate policies that support digital competence building, and plan education and training initiatives to improve the digital competence of specific target groups (p. 2). The DigComp framework provides a common language to identify and describe the key areas of digital competences – information and data literacy; communication and collaboration; digital content creation; safety; and problem solving – in terms of knowledge, skills, and attitudes (p. 3). The use of agreed vocabulary allows to consistently apply the competence-based approach to instructional planning, assessment and monitoring (p. 4) “Ultimately, it is up to the users, institutions, intermediaries or initiative developers to adapt the

reference framework to their needs when tailoring interventions (e.g. curriculum development) to fit the specific needs of target groups” (p. 4).

The DigComp 2.2 encompasses five competence areas with a total of 21 competences and eight proficiency levels (p. 4):



As mentioned above, the InDiCo project puts proficiency levels 1 and 2 to the fore as these are the basic levels (“foundation”). Proficiency level 1 and 2 are distinguished by the degree of guidance needed. The following example derives from competence area 2, which is “Communication and collaboration” and is given for competence 2.4 “Collaborating through digital technologies” (p. 21):

FOUNDATION	1	At basic level and with guidance, I can:	choose simple digital tools and technologies for collaborative processes.
	2	At basic level and with autonomy and appropriate guidance where needed, I can:	choose simple digital tools and technologies for collaborative processes.

In the framework, selected examples of learning outcomes in the form of knowledge, skills and attitudes are given, and selected examples of “use cases”, either from an employment scenario or a learning scenario, are presented (e.g., pp. 12–13).

1.3 DigComp 3.0: The Updated Digital Competence Framework for Citizens

In December 2025, the European Commission's Joint Research Centre published the DigComp 3.0 (Cosgrove & Chaia, 2025), the fifth iteration of the framework. The framework update reflects rapid digital technological developments that have occurred since 2022 and which have wide-ranging implications for digital competence.

The components of the DigComp 3.0 Framework include:

- **The definition of digital competence** establishes the content and scope of the framework, distinguishing between knowledge, skills and attitudinal aspects of digital competence, and positions the framework in the broader context of key competences for lifelong learning (see section 2.2 of DigComp 3.0).
- **Competence areas:** it organises competences into **five thematic groups**, consisting of competence area names (titles) and descriptors (short descriptions of the competences covered in each competence area) (see section 2.3 of DigComp 3.0).
- **Competences:** it defines **21 competences**, organised under the five competence areas, consisting of competence names (titles) and descriptors (short descriptions of what each competence consists of) (see section 2.3 of DigComp 3.0).
- **Compared to DigComp 2.2**, DigComp 3.0 updates the wording of competence areas and competences, as well as their descriptors and competence statements (see DigComp 3.0 Annex 1, Table A2).



- **Proficiency levels:** it establishes a continuum of proficiency based on cognitive demand, task complexity and level of autonomy. **General proficiency levels describe digital competence along Basic, Intermediate, Advanced and Highly Advanced levels.**
 - ➔ **Compared to DigComp 2.2**, with eight proficiency levels, **DigComp 3.0 includes only four proficiency levels**, which means that the two proficiency levels describing basic digital competences (proficiency levels 1 and 2) in DigComp 2.2, are merged into one level in DigComp 3.0.
- **Competence statements:** provide a more detailed view of the proficiency levels for each of the 21 competences (see Section 2.4. and 3.2 of DigComp 3.0).
 - ➔ **Therefore, for each competence, there are 4 competence statements, one per proficiency level. This is different from DigComp 2.2, which had 8 proficiency levels, and therefore, 8 competence statements.** This implies that at the Basic level there is only one set of competence statements instead of two as in DigComp 2.2. The following example derives from competence area 2, which is “Communication and collaboration” and is given for competence 2.4 “Collaborating through digital technologies” (p. 35):

At Basic level, with guidance as needed, individuals	CS2.4.01: Participate in collaborative groups via digital collaboration tools, recognising their benefits and limitations. [AI-I] CS2.4.02: Recognise the presence of AI systems in digital collaboration tools. [AI-E] CS2.4.03: Acknowledge the importance of effective communication skills for successful collaboration in digital environments.
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- **Learning Outcomes:** provide the most ‘granular’ view of the framework and consist of statements of what an individual is expected to know or be able to do after completing learning (of any kind). Each of the learning outcome statements is classified by competence, proficiency level, and knowledge, skill or attitude. Learning outcomes have been developed to enable a concrete and consistent interpretation of the framework (see section 2.5. of DigComp 3.0).
 - ➔ DigComp 3.0’s “learning outcomes” **substitute DigComp 2.2’s “examples of knowledge, skills and attitudes”.**

- **Integration of AI Technologies in the Framework:** DigComp 3.0 builds on the initial work of DigComp 2.2 to **systematically include the aspects of AI competence** that are relevant for individuals to develop as part of their digital competence. AI competence is intertwined with and builds on other elements of digital competence, as AI systems are widely diffused, and increasingly embedded within existing digital technologies. In DigComp 3.0, AI is framed as one digital technology among a range of digital technologies, while keeping the focus on the digital competences themselves.
- **Competence statements which explicitly mention AI systems are labelled '[AI-E]' (AI-explicit)**, while those for which AI systems are **implicitly relevant but do not explicitly mention AI systems are labelled '[AI-I]' (AI-implicit)** (see Section 2.4. and 3.2 of DigComp 3.0).
 - ➔ Similarly, **individual learning outcomes are labelled as being AI-Explicit, AI-Implicit, or AI not Implicit or Explicit** (see DigComp 3.0 Annex 2).

1.4 Validation of learning outcomes

Validation of non-formal and informal learning (VNFIL) can be conceptualised as a powerful tool to support disadvantaged and vulnerable adults, highlighting the importance of introducing and advocating for alternative pedagogical approaches where the validation of (prior and in situ) learning is seen “as a learning process” (Andersson, 2017), rather than a policy-driven summative assessment and certification for capacity building purposes. VNFIL prioritises and places the individual at the centre of the process (Villalba-García, 2021, p. 357).

With this in mind, and in view of the project's objectives, two key concepts need to be highlighted:

- **Validation** means a process of confirmation by an authorised body that an individual has acquired learning outcomes measured against a relevant standard and consists of the following four distinct phases: identification, documentation, assessment, and certification (Cedefop, 2023, p. 9).
- **Assessment** is normally referred to as the stage in which an individual's learning outcomes are compared against specific reference points and/or standards. It needs to be designed to capture and assess the learning specific to each individual, so various tools need to be considered. In some cases, written tests will be sufficient; in other cases, demonstrations, practical tests and evaluation of other forms of evidence will be required (p. 16).

The **InDiCo project considers the DigComp framework as a relevant standard** for the validation of learning outcomes. However, we also included competences required by persons with learning difficulties in their digital interactions, thus prioritising the learner's voice and putting the individual at the centre. We also recognised the value of other relevant frameworks, such as the UNESCO (2021) framework for media and information literacy.

1.5 Policy Recommendations Data Collection and Methodology

This Policy Recommendations document uses as a basis the data and information collected in the InDiCo project's **reports in Activities 2.1 and 2.2** (European Platform for Rehabilitation, n.d.). These reports present the status quo of the EU DigComp framework implementation, and of the assessment and validation of digital competences at levels 1 and 2 for persons with learning difficulties respectively, at the pan-European and national level (for Austria, Germany, Greece, Portugal and Spain).

Since the data in those reports dates from 2024, and to ensure information in is as up-to-date as possible, to **complete this document's sub-sections 2.1 and 2.2**, InDiCo Partners conducted further desk research to answer the following questions:

- How is the EU DigComp strategy implemented in your country/ at the pan-European level? Have there been any changes in its implementation between 2024 and 2026?
- Does a national DigComp framework exist or is it being developed? How is the national framework linked to the National Qualifications Framework (NQF)? Have there been any new developments between 2024 and 2026?
- What is the status quo of the assessment and validation of digital competences at levels 1 and 2 of the DigComp framework for persons with learning difficulties in your country? Has the situation changed between 2024 and 2026?

Partners also identified key informants (Fetterman, 2008) as possible respondents with first-hand knowledge of the implementation of the DigComp Framework at the national and local level, and the assessment and validation of basic digital competences for persons with learning difficulties and asked them to share their knowledge, experiences and thoughts on digital inclusion of persons with learning difficulties (or other vulnerable or marginalised groups). Data was collected via interviews, written input to a questionnaire and a meeting with the DigComp Community of Practice (All Digital AISBL, 2025). Data was processed anonymously. The questionnaires used to interview EU-level and national-level key informants are

available in Annex 1.1 and 1.2 respectively. For this document's sub-sections 2.1 and 2.2, answers to questions 1 and 2 of the two sets of questionnaires are key sources of information.

Section 2.3, "Gaps and Challenges" is based on the country and pan-european reports in InDiCo Activities 2.1 and 2.2 (European Platform for Rehabilitation, n.d.). To ensure that those gaps and challenges are as updated as possible, key informants were also asked to examine the identified gaps and challenges, and to assess whether their relevance has prevailed between 2024 and 2026. The questions regarding the gaps and challenges are available in section 3 of Annexes 1.1 and 1.2.

To ensure the relevance of the **policy recommendations in Section 3**, key informants were asked to review a draft version of the policy recommendations section. The questions regarding the policy recommendations are available in section 4 in the Annexes 1.1 and 1.2.

2 Policy Issue and Analysis

In today's increasingly digital society and economy, digital competences are more important than ever. For instance, in the EU, nine out of 10 workers nowadays rely on computers, mobile devices and office software to perform their work, while 30% use AI tools (Joint Research Centre, 2025). Without digital competences, individuals run the risk of missing out on opportunities for empowerment, social inclusion, and employability.

This section explores the status quo of DigComp Framework implementation, at the EU level and at the national level (in Austria, Germany, Greece, Portugal and Spain), exploring in particular, how it has been used to support persons with learning difficulties to acquire basic digital competences. It also delves into the status quo of the validation of basic digital competences at the Pan-European level and at national level. Finally, it draws policy gaps and challenges for persons with learning difficulties to acquire and validate basic digital competences.

2.1 Status Quo of DigComp Framework Implementation in the EU

2.1.1 EU-level Analysis

In the past years, a wide range of EU-level policies have had the aim to promote the acquisition of basic digital skills by the EU population.

As explained in InDiCo's Activity 2.1 Pan-European report (InDiCo Project, 2024a), the EU's common digital targets and objectives for 2030 were established in 2023 through the **Digital Decade Policy Programme** (European Parliament and Council of the European Union, 2022). It is a comprehensive framework that sets up a monitoring and cooperation mechanism to reach certain targets and objectives, including having a digitally skilled population, with **at least 80% of the population possessing basic digital skills by 2030**. Annually, the European Commission issues the State of the Digital Decade report, which assesses progress towards reaching the Digital Decade targets.

In 2023, the Presidents of the European Commission, European Parliament and Council signed the **EU Declaration on European Digital Rights and Principles** (European Parliament, the Council of the European Union and the European Commission, 2023), which aims to empower individuals to capitalise the opportunities presented by the digital decade. It is a shared political commitment of the EU and Member States to promote digital rights and principles that reflect EU values, and

foster a sustainable, human-centred approach to digital transformation. **One of the key principles of the Declaration is that *"Everyone has the right to education, training and lifelong learning and should be able to acquire all basic and advanced digital skills"*.** It outlines specific measures to ensure that the digital transformation benefits all segments of society, particularly prioritising elderly individuals, rural residents, persons with disabilities, and marginalised or disenfranchised populations and their advocates.

The **Union of Skills** (European Commission, 2025e), published in 2025, is an overarching strategy which aims to ensure that everyone in Europe is empowered to build solid skills foundations and engage in lifelong upskilling and re-skilling. It includes an **Action Plan for Basic Skills** (European commission, 2025a) to address declining levels of basic skills, which includes key actions such as the **Update of the DigComp Framework (DigComp 3.0)** taking into account new technologies (more information about its content is available in section 1.2); guidelines in advancing digital skills in education (focusing on AI, tackling disinformation, high-quality informatics and digital education content) (European Commission, 2023a); guidelines on enhancing basic skills in Vocational Education and Training (VET), including digital skills; and a toolkit for basic skills, including basic digital skills, in apprenticeships. The Union of Skills also includes a **2030 Roadmap on the future of digital education and skills** expected in Q3 2026 (European Commission, 2025d), based on a review of the European Digital Education Action Plan (European Commission, 2020).

The 2030 Roadmap on the future of digital education and skills is also mentioned in the **Communication "Enhancing the Strategy for the rights of persons with disabilities up to 2030"** (European Commission, 2026b), in which the European Commission proposes new actions between 2026 and 2030 as part of the European Strategy for the Rights of Persons with Disabilities 2021-2030 (European Commission, 2021). The Communication states that the Commission will support Member States *"developing shared digital infrastructure for education in line with EU values. This will include ethical and equality-sensitive use of AI and the deployment of safe European education technologies that can cater for the diverse accessibility needs of pupils"* (European Commission, 2026b, p.16).

In 2025, the European Commission also published the **AI Continent Action Plan** (European Commission, 2025c) and the **Apply AI Strategy** (European Commission, 2025b) which have as one of their objectives to promote AI literacy among all workers across sectors and to educate and train the next generation of AI experts. As part of the AI Continent Action Plan and of the Union of Skills, the European Commission has developed with the OECD an AI Literacy Framework for Primary and Secondary

Education (OECD & European Commission, 2026), a non-binding guidance to support teachers, school leaders and education authorities. Moreover, in the Apply AI Strategy, the European Commission commits to promoting the wide uptake of relevant competences frameworks, such as the DigComp.

Other pieces of legislation aim to ensure the accessibility of digital products and services. For instance, the **European Accessibility Act** (European Parliament and the Council of the European Union, 2019) requires that a set of products and services meet accessibility requirements for all users, including consumer electronics such as TVs, smartphones, computers, video game consoles, etc. As it is an EU Directive, Member States were required to publish their own national laws, regulations, and administrative provisions to comply with the Directive by 22 June 2022, and such national policies had to start applying from 28 June 2025. The **Web Accessibility Directive** (European Parliament and Council of the European Union, 2016) obliges all public sector bodies in the EU to make their online websites and mobile apps accessible. Similarly to the European Accessibility Act, Member States had to publish their own national laws, which began applying from September 2019.

When it comes to initiatives to foster the implementation of the DigComp framework at the national and local levels, one key informant underlined that ***"The European Commission has never really had a comprehensive strategy to promote the uptake and implementation of the DigComp Framework across Europe. [...] [T]he Commission has played an important role in developing and updating the DigComp framework [...] What has been missing is a structured and sustained effort to encourage adoption and implementation at national, regional, and local levels."***

While no comprehensive EU-level strategy to implement the DigComp framework exists, the European Commission's Joint Research Centre has published three guides to support stakeholders in implementing it:

- **DigComp into action**, get inspired, make it happen' (Carretero et al., 2018), published in 2018, is a user guide that serves as a resource to assist stakeholders in implementing the DigComp framework by showcasing 38 existing inspiring practices of DigComp implementations. The document spans various domains including education, social inclusion, social participation, and employment.
- **DigComp at work**: the EU's digital competence framework in action on the labour market: a selection of case studies' (Kluzer et al., 2020), published in 2020 and accompanied by its 'Implementation guide' (Centeno, 2020) with practical guidance for labour market intermediaries on the use of DigComp,

offers insights into the application of the strategy within the contexts of employability and employment.

- **Developing digital competence for employability:** Engaging and supporting stakeholders with the use of DigComp' (Bartolomé et al., 2019) is a report based on the insights gathered during a stakeholders' consultation workshop in 2019, which endeavours to shed light on possible policy strategies to support labour market intermediaries in their efforts to enhance digital skills using DigComp.

Three other EU-level initiatives can be considered as tools to disseminate the DigComp framework across Europe:

- The **Digital Education Hub** (European Commission, n.d.a), an online collaborative community of practice established by the European Commission that connects educators, teacher trainers, policy makers, school representatives, researchers and trainers. Its objective is to overcome fragmentation in digital education by working on policy, research, and implementation practices at the European level.
- The **DigComp Community of Practice** (All Digital AISBL, 2025), a collaborative space to support and engage adult education providers and stakeholders across Europe in their digital transformation. The organisation All Digital originally established this Community of Practice, formed by hundreds of educational experts, to facilitate consultation on the updates of the European Digital Competence Framework for Citizens (DigComp), in cooperation with the European Commission's Joint Research Centre, and DG EMPL (Directorate General for Employment, Social Affairs and Inclusion). More recently, building on this foundation, the DigComp Hub (n.d.) project (2023–2025) has invested in scaling up the Community of Practice into a comprehensive environment for knowledge sharing, peer learning, and exchange of best practices related to the use of the DigComp Framework.
- The **Digital Skills and Jobs Coalition** (European Commission, n.d.b), aims to tackle the digital skills gap by bringing together Member States, companies and organisations. The coalition tackles the need for digital skills in 4 broad groups: Digital Skills for all citizens to be active in digital society; Digital skills for the labour force; Digital skills for ICT professionals, meaning high-level digital skills for ICT professionals in all industry sectors; Digital skills in education, transforming teaching and learning of digital skills in a lifelong learning perspective, including training of teachers. Some of the members of

the Digital Skills and Jobs Coalition are **National Coalitions for Digital Skills and Jobs** (European Commission, n.d.d.), present in most EU Member States, and which bring together partners who develop measures to bring digital skills to all levels of society, including ICT and ICT-intensive companies, education and training providers, education and employment ministries, public and private employment services, associations, non-profit associations and social organisations.

Despite the European Union's numerous initiatives to strengthen digital skills development, the overall level of basic digital skills proficiency in Europe is still lagging behind. In June 2026, the European Commission published the 2026 State of the Digital Decade Report (European Commission, 2026c). According to its Annex (European Commission, 2026a), in 2025, 60% of Europeans have at least basic digital skills. To achieve the 2030 target of 80%, in 2025 the rate of Europeans with at least basic digital skills should have been 65.51%. **Moreover, the annex forecasts that by 2030, only 68.48% of the population will have at least a basic level of digital skills. The 80% target would only be reached in 2037 if no further actions are taken.**

The Annex also highlights that, while basic digital skills are fundamental to participate meaningfully and safely in today's digital economy and society, a substantial share of Europeans still faces difficulties in acquiring them. **Groups particularly at risk of lacking basic digital skills include older people, individuals with low educational attainment, persons with disabilities, marginalised groups facing racial or ethnic discrimination, and those who are unemployed or outside the labour market.**

2.1.2 Comparative analysis at the national level

With data collected by InDiCo partners via desk research and contacting key informants, this sub-section provides a comparative analysis across the five InDiCo partner's countries on different elements that describe the DigComp implementation at the national level. It describes which countries have in place digitalisation strategies aiming to strengthen digital skills; if the DigComp framework is implemented through a national digital competences framework, other initiatives, or through neither; the link between DigComp and National Qualifications frameworks; and the countries having in place other kinds of initiatives, such as trainings on digital skills for the overall national population, programmes designed to enhance the digital competences of persons with disabilities, and strategies and research on AI competences. Table 1 presents a summary of the InDiCo partner's findings, previously described throughout this sub-section.

As can be observed in Table 1, the DigComp Framework has been implemented in a heterogenous way across the 5 countries analysed.

All countries have in place **national digitalisation strategies aiming to strengthen digital skills.**

The 'Digital Skills Initiative for **Austria**' (DKO) (Austrian Ministry of Finance, 2023), published in 2023, aims, among other objectives, to strengthen the basic digital skills of the Austrian population.

In **Germany**, digital competences are addressed through a multi-level policy framework rather than through a single, recently adopted national strategy. The 2022 Digital Strategy of the German Federal Government (Digitalstrategie der Bundesregierung) remains an important federal reference document (Federal Government of Germany, n.d.). It identifies the strengthening of digital competences, digital participation and an inclusive digital society as key policy objectives. However, many of its targets were linked to the 2021-2025 legislative period and should therefore be treated as a strategic baseline rather than as the complete current framework. For the current federal policy context, the 2025 coalition agreement Responsibility for Germany (Verantwortung für Deutschland) sets out the government's priorities for a "comprehensive digital transformation", including digital public services, digital infrastructure, artificial intelligence, innovation and technological sovereignty (CDU, CSU, & SPD., 2025). These priorities are complemented by the Federal Government's Modernisation Agenda for the State and Public Administration, adopted in October 2025, which focuses on a simpler, more digital and more citizen-centred state (German Federal Ministry for Digital Affairs and State Modernisation (BMDS), n.d.). The Federal Ministry for Digital and State Modernisation describes the current national digital-policy framework in terms of innovation, digital business models, technological sovereignty, digital competences and the responsible use of artificial intelligence.

In **Greece**, as explained in the InDiCo Activity 2.1 Country Report for Greece (InDiCo Project, 2024d) the Digital Transformation Strategy 2020-2025 (also known as the 'Digital Transformation Bible') (Greek Ministry of Digital Governance, n.d.a) outlines the priorities for the country's digital transformation, and aims to develop digital skills across all age groups and levels of society. In particular, the Strategy's third axis is on digital skills development. It also includes specific implementation principles focused on accessibility and support for persons with disabilities, such as promotion of universal design and the involvement of people with disabilities in decision-making. Additionally, Greece has established a National Coalition for Digital Skills and Jobs (Greek National Coalition for Digital Skills and Jobs, n.d.a), which aims to address

digital skills gaps across various sectors of the Greek economy and society, including education, training, ICT professionals and citizens. The coalition involves entities from the public and private sector, and the Ministry of Digital Governance has been overseeing its activities since 2019.

INCoDe.2030 (Iniciativa Nacional Competências Digitais) (Portuguese Government, 2017) is **Portugal's** national digital-skills strategy and programme, launched in 2017, and aims to promote digital competences across the country. More recently, in 2024 the Portuguese Council of Ministers adopted the National Digital Strategy (Portuguese Government, 2024), which, as one of its objectives, aims to strengthen digital literacy across Portugal. The Digital Competences Pact (Portuguese Government, 2025) was published alongside the National Digital Strategy, aiming to train approximately 2.8 million people on digital skills until 2030, and includes specific actions targeted at persons with disabilities. It also plans the deployment of Community Digital Agents, mobile training units and a national network of partners to reach rural areas and socially vulnerable groups.

In 2020, the **Spanish** government published 'España Digital 2025' (also known as Agenda España Digital 2025, Spanish Digital Agenda 2025) (Spanish Government, 2021a), Spain's national digital transformation strategy establishing strategic priorities for the country's digital transformation, including the development of citizen's digital competences. 'España Digital 2026' (Spanish Government, 2022) is the updated version of the strategy, published in 2022. It incorporates the objectives of the Recovery, Transformation and Resilience Plan (Spanish Government, n.d.b) and the European Digital Decade. Digital skills remain one of the strategic pillars of the national digital transformation agenda. Spain's 'Plan Nacional de Competencias Digitales' (National Plan for Digital Skills) (Spanish Government, 2021b) was adopted in 2021 by the Council of Ministers as one of the flagship initiatives of 'España Digital 2025', including objectives such as increasing digital inclusion and increasing the number of persons with basic digital competences, and guaranteeing the acquisition of digital competences for education for teachers and students of all levels of the educational system.

Austria, Portugal and Spain have **implemented DigComp through a National Digital Competences Framework**. Some countries abide very closely to the DigComp Framework within their National Digital Competences Frameworks, while others differ in some elements, further adapting the DigComp framework to the local situation. For instance, **Spain's** 'Modelo de las competencias digitales de la ciudadanía Española' (Spanish Government, 2023), published in 2023 as part of 'España Digital 2026', keeps a very similar structure to the DigComp 2.2 framework (Vuorikari et al.,

2022) (on which it is based), maintaining the same five competence areas, and eight proficiency levels. On the other hand, the **Portuguese** 'Quadro Dinâmico de Referência de Competência Digital (QDRCD)' (Portuguese Government, 2023), published as part of the InCoDe. 2030 strategy, adapts the European DigComp 2.1 framework (Carretero et al., 2017) to the Portuguese context. It maintains the 5 competence areas, but clusters proficiency levels into four categories (while DigComp 2.1 includes eight proficiency levels). Up until June 2026, the **Austrian** "DigComp 2.3 AT" (OeAD, n.d.) has been the prevailing National Digital Competences Framework, based on the EU-level DigComp 2.2 framework. It was published as a central action of the 'Digital Skills Initiative for Austria' (DKO). DigComp 2.3 AT not only includes the five competence areas from DigComp 2.2, but also includes a sixth area, "area 0" named "Basics, access and digital literacy". Competence area 0 comprises the competences: 0.1 Understanding concepts of digitalization; 0.2 Operating digital devices and technologies; 0.3 Knowing, using and providing inclusive forms of access to digital content; 0.4 Seeking engagement with digitality and developing appropriate judgement skills. **InDiCo partners, who have practical experience in supporting persons with learning difficulties acquire digital competences, have considered this "area 0" highly relevant in practice to support this target group. This is why, in the InDiCo project deliverables such as the Catalogue of Relevant Digital Competences, competence area 0 has been included.**

In Austria, the "Digital Skills Initiative" was further refined by incorporating the DigComp 2.3 AT reference framework into the 'National Reference Framework for Digital Competences' (NRDK) (Austrian Federal Ministry of Finance, 2024), published in 2024. Since June 2026, the NRDK has DigComp 3.0 AT as a basis. One of the core elements of the NRDK includes its application and potential uses for education providers, as well as governance. According to a key informant in Austria, thanks to the NRDK, *"DigComp has evolved from a competence model into a steering instrument"*. The NRDK sets out how educational programmes are to be sorted and describes what they can be used for. According to a key informant *"a central register (Austrian National Register for Digital Competences (NRDK), n.d.), which lists non-formal educational offerings that are in line with the National Reference Framework for Digital Competences [has been introduced]. In 2024, the pilot project on the alignment of formal curricula was completed (Austrian Platform for Adult Education, n.d.)"*.

Austria and Spain regularly update their Digital competences frameworks, while Portugal's framework has not undergone any major revisions since their release. In 2018, the **Austrian** DigComp 2.2 AT model was created in two stages by the Federal Ministry for Digital and Economic Affairs: the European DigComp was first translated from English into German and then updated and expanded at relevant points. In 2022, DigComp 2.3 AT (OeAD, n.d.), a new, more practice-oriented version, was developed by the fit4internet association¹. In June 2026, an updated version of the Austrian Digital Competences Framework, DigComp 3.0 AT (Austrian Federal Ministry of Finance, 2026), was published, to further align it to the EU-level DigComp 3.0 Framework. One key change includes the deletion of competence area 0, its content being integrated into various learning outcomes within the other competence areas of DigComp. Therefore DigComp 3.0 AT has now 5 competence areas². **Spain's** original 'Modelo de las Competencias Digitales de la Ciudadanía Española' was originally published in 2022, and was updated in 2023 to include DigComp 2.2's examples of learning outcomes (Spanish Government, 2023). Additionally, sectoral competence frameworks, such as the digital competence framework for public employees (Instituto Nacional de Administración Pública, n.d.) and for teachers (Spanish Ministry of Education and Vocational Training, 2022) show progressive integration of DigComp-inspired descriptors.

In Austria, Portugal and Spain, National Digital Competence Frameworks are linked partially to the National Qualifications Framework. In **Austria**, the DigComp 2.3 AT describes eight competence levels, co-relating with the eight levels

¹ More information available on the InDiCo Activity 2.1 Austria Country Report, available [here](#).

² Despite the development of DigComp 3.0 AT, the InDiCo assessment and validation framework deliberately retains competence area 0. Although the InDiCo framework is no longer fully consistent with DigComp 3.0 nor DigComp 3.0 AT, this deviation was deliberately endorsed and accepted by the InDiCo consortium. This is due to the fact that development work carried out within the project highlights how relevant competence area 0 is for the target group of persons with learning difficulties when it comes to addressing their learning needs. The arguments underpinning this decision include that having a competence area 0 foresees that fundamental digital prerequisites cannot be assumed for persons with learning difficulties; this competence area increases visibility of essential foundational competences; having a separate competence area may support persons with learning difficulties and professionals who support them find foundational competences more easily; and respecting the principle of modularity. InDiCo does not introduce new competences or alter the content of DigComp 3.0 AT. Instead, it makes explicit those foundational elements that DigComp now embeds implicitly within other competence areas. The retention of competence area 0 can therefore be understood as a target-group-specific adaptation that extends the DigComp standard to better support the inclusion of persons with learning difficulties.

in the Austrian National Qualifications Framework (Nationaler Qualifikationsrahmen, NQR) (Austrian Federal Ministry for Women, Science and Research, n.d.). DigComp 3.0 AT adopts a hybrid approach by using the four-level EU framework as its primary reference to ensure compatibility with EU DigComp 3.0, whilst retaining the Austrian eight-level structure for a more detailed classification of learning outcomes and educational programmes. The competence levels describe individuals' digital competences and differ from formal qualifications frameworks such as the NQF (Grundschober et al., 2026). As a key informant mentioned, *"Assigning a DigComp competency level does not automatically mean assigning it to the NQF"*. In other words, someone might demonstrate DigComp Level 6 digital competence through assessment or work experience. However, that does not automatically mean the person holds an NQF Level 6 qualification (roughly equivalent in complexity to a bachelor's degree level qualification). The person has demonstrated a level of digital competence, but not necessarily obtained a formally recognised qualification at that NQF level. The **Portuguese** "Quadro Dinâmico de Referência de Competência Digital (QDRCD)" is indirectly linked to the Portuguese National Qualification Framework (Catálogo Nacional de Qualificações, CNQ) (Agência Nacional para a Qualificação e o Ensino Profissional, 2024). Digital competences are progressively incorporated into the Catálogo Nacional de Qualificações (CNQ), through specific short training units (Unidades de Formação de Curta Duração, UFCD and Unidades de Competência, UC) in the technological component of qualifications. However, there is no direct formal equivalence between QDRCD proficiency levels and CNQ levels. According to a key informant, the integration of the DigComp Framework within the CNQ *"is not yet fully formalised and harmonised with levels 1 and 2 of DigComp"*. Through the 'Marco Español de Cualificaciones' (The National Qualifications Framework), **Spain** embeds digital competence descriptors within existing qualification structures, especially via the National Catalogue of Professional Qualifications (Instituto Nacional de las Cualificaciones, n.d.) (a catalogue used by the national Vocational Education and Training system) and digital competence certifications aligned with DigComp-based levels.

Neither Greece nor Germany have in place a National Digital Competences Framework implementing the EU DigComp framework.

In **Greece**, although DigComp is not implemented through a National Digital Competences Framework, DigComp 2.2 has been translated into Greek (National Coalition for Digital Skills and Jobs, n.d.b) and integrated within the National Competences Framework. As depicted in the InDiCo Activity 2.1 Country Report for Greece (InDiCo Project, 2024d), the Greek National Coalition for Digital Skills and Jobs plays a pivotal role in connecting the DigComp with the National Qualifications

Framework in Greece. By incorporating the Greek translation of DigComp 2.2 as a tool for their work, the Coalition ensures that digital competences are systematically integrated into Greece's education, training, and labour-market systems. In particular, the Coalition maps DigComp 2.2 competences within the National Qualifications Framework levels, which enables digital skills to be formally recognised, compared, and transferred across different educational and professional levels.

As explained in InDiCo Activity 2.1's **Germany** Country Report (InDiCo Project, 2024c), in Germany, Digital Competences are mainly addressed through broader digital policy strategies, such as the above-mentioned "Digital Strategy of the German Federal Government", and the "Education in the Digital World" strategy. In particular, the latter strategy outlines areas of competence for digital learning in a school setting, as well as for teacher training and continuing professional development (German Standing Conference of the Ministers of Education and Cultural Affairs of the Federal States in the Federal Republic of Germany (KMK), 2016). While DigComp itself was not explicitly adopted as a reference framework, the Strategy's competence areas show a clear structural similarity with DigComp. This framework was supplemented in 2021 by the KMK recommendation "Teaching and Learning in the Digital World", which focuses on digital school development, teaching quality and the qualification of teachers (German Standing Conference of the Ministers of Education and Cultural Affairs of the Federal States in the Federal Republic of Germany (KMK), 2021).

Moreover, in Germany, there is no existing link between the National Qualifications Framework (Deutscher Qualifikationsrahmen) (German Qualifications Framework, n.d.) and DigComp. Digital competences are only addressed indirectly within broader competence categories in the National Qualifications Framework, such as professional competence, methodological competence and social competence.

All countries have organized training programmes to enhance the population's digital skills.

As part of the **Austrian** DKO, in autumn 2023, the 'Digital Skills for All' pilot project (Digital Austria, n.d.a) was launched, organising around 800 cost-free workshops by December 2023. The workshops were aimed at digital beginners, especially at hard-to-reach groups or learners. The initiative of capacity building is being continued under the new name 'Digital Everywhere' (Digital überall) (Digital Austria, n.d.b), a nationwide programme offering cost-free workshops tailored for digital beginners, delivered by a variety of adult education organisations. The workshops address five primary topics: digital education for senior citizens, e-government, online safety, living with increasing digitisation, and artificial intelligence. As part of both 'Digital Skills for All' and 'Digital Everywhere' the organization atempo (ATEMPO Association, n.d.), an

Austrian organization advocating for persons with disabilities, offered workshops dedicated to the digital inclusion of persons with learning difficulties. The “Digital Everywhere Plus” (Digital Austria, n.d.b) programme has been developed to offer tailored workshops for those who want to further improve their digital competences, and by improving quality through training for trainers. According to a key informant, “[...] *the programme includes: (1) a significantly more comprehensive quality guide; (2) a series of pilot initiatives for marginalised groups (including projects for people with disabilities); and (3) a professional development offering (self-study course and certificate programme) for educators. This professional development programme includes a module on digital inclusion from atempo and is freely accessible after self-registration[...]*”.

In **Germany**, initiatives to strengthen the population’s digital skills are mainly linked to education, such as the ‘Digital Pact for Schools’ (Digitalpakt Schule) (German Federal Ministry for Family Affairs, Senior Citizens, Women and Youth, n.d.a), the “Education in the Digital World” strategy, and the KMK’s “Teaching and Learning in the Digital World”. In addition, the *DigitalPakt 2.0*, agreed by the Federal Government and the Länder for 2026-2030, provides the current implementation and investment framework for digital education infrastructure and its sustainable use (German Federal Ministry for Family Affairs, Senior Citizens, Women and Youth, n.d.b). The programme has a total volume of €5 billion, financed equally by the Federal Government and the Federal States. As observed in InDiCo Activity 2.1 Germany Country Report (InDiCo Project, 2024c), although the persons with learning difficulties target group is referenced and alluded to in numerous documents, strategies and initiatives, it is not addressed in any more detail. Furthermore, numerous non-profit organisations and initiatives are dedicated to the digital integration of individuals with disabilities, for instance, ‘Action human’ (Aktion Mensch, n.d.). Such organisations frequently provide training, advice and assistance to individuals with disabilities, as well as to companies and organisations, with the objective of ensuring that digital products and services are accessible (German Federal Ministry of Labour and Social Affairs, 2016).

In **Greece**, several initiatives have been established to strengthen citizens’ digital skills, most notably the National Academy for Digital Skills (Greek Ministry of Digital Governance, n.d.c), launched by the Ministry of Digital Governance. Established during the COVID-19 pandemic disruptions in education and the labour market, the Academy provides free access to digital learning opportunities for all citizens. The initiative is based on the European Digital Competence Framework, DigComp 2.1, and its educational content is provided by a broad range of stakeholders, including universities, businesses, banks, telecommunications providers and digital education organisations. Furthermore, Greece has implemented a number of targeted

programmes for vulnerable and underrepresented groups, including the “3rd e-Age” (3η e-λικία) (Greek Ministry of Digital Governance, n.d.b) initiative, which aims to digitally empower citizens aged 60 and over. In addition, the Public Employment Service (DYPA) collaborates with the University of West Attica to provide digital upskilling and reskilling programmes (including on digital competences) for unemployed individuals. The Centre for Training and Rehabilitation for the Blind (KEAT) (n.d.) offers courses on computer use and new technologies to support the digital inclusion of persons with visual impairments. The project ‘Όλοι Digital (n.d.) funded by the Recovery and Resilience Facility, provides free in-person training on competences skills to empower older adults and persons with disabilities. They also include accessible educational material.

In **Portugal**, the Formação Emprego + Digital 2025 programme (Instituto do Emprego e Formação Profissional, n.d.a) offers free certified digital training for workers, managers and social economy entities, using the ‘Quadro Dinâmico de Referência de Competência Digital’ (QDRCD) to diagnose proficiency levels through the platform ‘Academia Portugal Digital’ (Digital Academy Platform) (Academia Portugal Digital, n.d.). The ‘Academia Portugal Digital’ was created by the Portuguese government to equip the population with skills that promote digital inclusion and accompany them on their digital journey, through guidance and counselling on training paths aimed at qualifications associated with digital career paths. In the case of persons with learning difficulties, they can attend training courses in community organisations or in professional rehabilitation organisations that have strategies designed to facilitate the acquisition of digital skills. The adapted training curricula are included in the ‘National Qualifications Catalogue’ (Agência Nacional para a Qualificação e o Ensino Profissional, 2024).

The **Spanish** State Public Employment Services (SEPE)’s training section (Servicio Público de Empleo Estatal, n.d.) offers a wide variety of courses related to the digital area, computer science for beginners, advanced computer science, social networks, computer applications for daily use, computer security and digital signature, hardware, although they are not specifically aimed at persons with disabilities, there are other defined groups such as women, women in rural areas, unemployed, young people under 30, where the unemployment rate is above average and it is necessary to train and recycle them in order to incorporate them into the labour market. Digitalízate Plus (Spanish Government, n.d.a) is a state initiative carried out by the State Foundation for Training in Employment (FUNDAE), where large technology companies or companies specialised in technology offer free training to anyone who wants to improve their digital skills. In parallel, organisations of the third sector also organise digital competences trainings, such as Por Talento Digital (Fundación ONCE, n.d.), by

Fundación ONCE, a permanent digital skills and technological professions training programme of the ONCE Foundation, aimed mainly at people with disabilities. Through this initiative, the aim is for students to acquire knowledge and technological and digital qualifications, in order to favour their inclusion in the labour market in professions that are currently booming and in great demand.

In Austria, Portugal, Spain and Germany, policy discussions on digital competences are increasingly expanding beyond traditional digital literacy to include skills related to artificial intelligence (AI). In **Austria**, as described by a key informant, *"As part of the DKO [Digital Competences Initiative], an 'AI Skills Action Plan' [...] is currently being developed."* The Digital Competences Initiative's website (Digital Austria, n.d.a) also describes that Austria is *"developing a comprehensive AI literacy program to impart AI knowledge even more effectively"*. Austria's AI Implementation Plan (Austrian Federal Ministry of Finance, n.d.) also includes as a key measure increasing the AI competence of the population. In **Portugal**, this shift is reflected in the National Artificial Intelligence Agenda (Agenda Nacional de Inteligência Artificial) (Portuguese Government, 2024a), adopted in December 2024 alongside the Digital Competences Pact and the National Digital Strategy, signalling the growing importance of AI-related knowledge and skills within the country's broader digital-skills agenda. In **Spain**, the publication of DigComp 3.0, which introduced AI-related competences, have influenced national discussions and, potentially, future initiatives. In **Germany**, AI competences have also become a prominent topic in digital-skills policy debates since 2024. Research and monitoring initiatives, such as *Digitales Deutschland* (Digital Germany) (JFF – Institute for Media Education in Research and Practice, n.d.), have increasingly examined citizens' preparedness for the digital transformation, while the study *Kompass: Künstliche Intelligenz und Kompetenz 2023* (Compass: Artificial Intelligence and Competence) (JFF – Institute for Media Education in Research and Practice, 2023) provides a framework for understanding the competences required to engage effectively with AI technologies. The study has been used to support digital policy discussions and promote a more comprehensive approach to competence development in the context of AI. The KMK's 2024 Recommendation for the Educational Administration on Dealing with Artificial Intelligence in School Education calls for a constructive and critical approach to AI, the development of AI-related competences, appropriate teacher training, the adaptation of assessment practices and the consideration of data protection, fairness and equal opportunities (German Standing Conference of the Ministers of Education and Cultural Affairs of the Federal States in the Federal Republic of Germany (KMK), 2024).

Table 1 – Summary table of DigComp framework implementation in InDiCo project partners' countries.

	Austria	Germany	Portugal	Greece	Spain
Digitalisation strategy					
Digitalisation strategy aiming to strengthen digital skills	yes	yes	yes	yes	yes
DigComp implementation through a national digital competences framework					
DigComp implemented through a national digital competences framework	yes	no	yes	no	yes
DigComp not directly implemented through national digital competences framework, but embedded in national initiatives and strategies	no	no	no	yes	no
DigComp not implemented through a national digital competences framework or other initiatives	no	yes	no	no	no
DigComp link with National Qualifications Frameworks					
DigComp is linked to National Qualifications Framework	yes	no	yes	yes	yes
Other initiatives					
Training programmes on digital competences for the overall national population	yes	yes	yes	yes	yes
Programmes to enhance digital competences targeting persons with disabilities	yes	yes	yes	yes	yes
Strategies and research on AI competences	yes	yes	yes	no	yes

Source: Created by the author. This table summarises data gathered through InDiCo desk research and interviews with key informants.

2.2 Status quo of the assessment and validation of basic digital competences at level 1 and 2 for persons with learning difficulties

2.2.1 EU-level analysis

The **Digital Skills and Jobs Platform** (European Commission, n.d.f) is the sole repository of digital skills self-assessment tools in all EU languages. These instruments enable users to evaluate their knowledge and competences required for the utilisation of digital technologies. Based on the assessment, the tools in this repository offer personalised learning paths and recommend available resources to enhance digital skills based on the assessment results. Although the tests are adapted to different professional and educational backgrounds, they are not particularly accessible to persons with learning difficulties. More information about the digital skills self-assessment tools available for the whole EU population in this repository is available below.

'MyDigiSkills' (All Digital ASBL, 2021) is an online self-assessment tool that seeks to be user-friendly and inclusive. It was developed under a Creative Commons Licence by ALL DIGITAL from the DigCompSAT project of the Joint Research Centre of the European Commission. Available in 11 languages (English, Dutch, French, German, Italian, Latvian, Lithuanian, Romanian, Spanish, Ukrainian and Russian), it aims to support citizens to better understand their level of digital skills based on knowledge, skills and attitudes in each of the five areas of the DigComp. This tool is based on DigComp 2.0 (European Commission, n.d.e).

The **Digital Skills Assessment Tool (DigSAT)** (European Commission, n.d.g) is an online self-assessment test developed by the European Commission under the Europass platform. It includes simple questions on different digital competences and with a final report on competences to improve, then offers a learning path on those to improve. Competences from DigComp 2.2's five competence areas are tested: Information and data literacy, Communication and collaboration, Digital content creation, Safety, and Problem solving. It also includes an accessibility mode that stops the timer during the test. In that case, test results specify that the test was taken without time constraints.

While the DigComp 3.0 has already been published, the self-assessment tools available at the Digital Skills and Jobs Platform are still based on DigComp 2.0 and 2.2, which shows a delayed phasing-in of the DigComp 3.0 framework in the assessment and validation of its new competences.

In terms of validation tools for digital competencies, the European Commission has worked towards creating a **standardised certification**, based primarily on DigComp, as the key reference point for validation tools concerning digital competencies. The Digital Education Action Plan (2021-2027) (European Commission, 2020), proposes as Action 9 the development of a **European Digital Skills Certificate (EDSC)** that can be quickly and easily recognised by governments, employers, training providers and other actors across Europe. The Joint Research Centre (JRC) carried out the EDSC Feasibility Study (Centeno et al., 2024) through the systematic consultation involving 650 stakeholders across all EU Member States. Following a feasibility study and a pilot project with several EU countries, the European Commission concluded that such a quality label would not bring enough added value to European citizens (European Commission, n.d.c).

By including learning outcomes within it, DigComp 3.0 responds to requests from existing users and stakeholders, who sought more clarity on practical applications of DigComp. A key recommendation from the EDSC Feasibility Study was to develop learning outcomes for DigComp (Centeno et al., 2024).

2.2.2 Comparative analysis at the national level

With data collected by InDiCo partners via desk research and contacting key informants, this sub-section provides a comparative analysis across the five InDiCo partner's countries on different elements describing the status quo of the assessment and validation of basic digital competences at level 1 and 2 for persons with learning difficulties. It describes which countries have in place a National Reference Framework for Digital Competences; existing publically available tools to assess the digital competences, describing if such tools align with the DigComp framework, and if they are accessible to persons with learning difficulties; existing publicly available tools for the validation of digital competences, describing if they are in-person or online tools, if they are aligned with the DigComp framework, and if they are accessible for persons with learning difficulties. Table 2 presents a summary of the InDiCo partner's findings, previously described throughout this sub-section.

In Austria, non-formal education and training providers and curriculum developers can now align their educational offerings with the National Reference Framework for Digital Competences (NRDK), including levels 1 and 2. These educational offerings are aligned with the DigComp 3.0 AT reference framework based on learning outcomes, which are descriptions of what participants know, understand and can do after completing an educational programme (OeAD, 2025b). The NRDK's main purpose is to make the content and learning outcomes of digital educational offerings visible and comparable. Learning outcome-oriented

educational offerings can form the basis for assessment and validation procedures, where a relevant standard is used to assess the learning outcomes acquired by an individual. With regard to levels 1 and 2, the OeAD – ‘Agency for Education and Internationalisation’ (Agentur für Bildung und Internationalisierung) published a quality guide for educational offerings in the field of basic digital skills (OeAD, 2025a). This serves as a guide for the development of both “Digital Skills Initiative” programs and other educational offerings in the field of basic digital skills.

Regarding the **assessment of digital competences**, the desk research for **Portugal** and **Greece** underlines that in these countries, **assessment of digital competences of persons with learning difficulties is informal and project-based**, depending on local initiatives, research projects, and civil society organisations, instead of being integrated into national education or qualification strategies.

In Portugal, Greece and Germany, the state or private organisations offer online digital competence self-assessment tools aligned with the DigComp Framework.

In **Portugal**, the Academia Portugal Digital (n.d.) platform provides free self-diagnostic tools for digital competence assessment based on the ‘Quadro Dinâmico de Referência de Competência Digital’ proficiency levels. These tools are accessible online and give individualised results. However, they are not specifically designed or adapted for people with learning difficulties and do not constitute a formal validation process.

In **Greece**, National Academy for Digital Skills (Greek Ministry of Digital Governance, n.d.c), which uses DigComp 2.1 as a reference framework, incorporates a self-assessment tool that allows users to evaluate their digital competences and identify their skill level.

In **Germany**, a private entity, gepedu, offers an on-line digital competence self-assessment tool aligned with the DigComp Framework. The DigCompCheck (DCC) (gepedu GmbH, n.d.) measures digital competence by means of an online self-assessment and the verification of this self-assessment through knowledge questions. The DigCompCheck is based on the European Union's Digital Competence Framework 2.1 and has been expanded to include practical requirements such as basic IT and computer skills.

In Spain and Germany, private entities also offer online digital competence self-assessment tools not explicitly aligned with the DigComp Framework.

In **Spain**, the Knowledge Engineering Institute (Instituto de Ingeniería del Conocimiento, n.d.) offers a digital skills assessment tool aimed primarily at HR professionals exploring three key domains: operation of technology, willingness to use technology and digital competence. In **Germany**, The Digital Competence Check (DCC-SAT) of the Christian Association of Youth Villages (Christliches Jugenddorfwerk Deutschlands, n.d.) also offers an online self-assessment test to determine the level of digital competence. The Digital Competence Check (DCC-SAT) is divided into six competence areas: information and data competence, communication and cooperation competence, development and design competence, security competence, problem-solving competence, and analysis and reflection competence. In addition, four competence levels (Beginner, User, Advanced and Expert) are offered for self-assessment.

Regarding the validation of digital competences, Austria has in place public or private online standardised tools for certification of digital competences with the DigComp framework as a basis. Dig-Cert (n.d.) is a standardised procedure for the certification of general digital skills in everyday life and work, for which DigComp AT serves as a reference model. It consists of a fee-based 60-minute multiple-choice test online, and it assesses six competence areas. As explained in the InDiCo Activity 2.2 Country Report for Austria (InDiCo Project, 2024b), although in theory DigCert can be used to demonstrate digital competences at proficiency levels 1-5, in practice, sections assessing levels 1 and 2 have not been adapted to the needs for persons with learning difficulties, and this tool is mainly suitable for certifying levels 3-5, which are required for professional compatibility. The DiWi-Pass (n.d.). project focused on the development, assessment and validation of basic digital competences based on DigComp 2.2 AT. An online platform provides materials for targeted digital training on the one hand and certifies digital competences on the other

Austria also has in place public or private online digital competence certification procedures that are not explicitly aligned with the DigComp Framework. It is worth mentioning the 'digital toolbox' (arbeit plus, n.d.), and free online platform providing online learning modules on topics such as: Getting started in the digital world, internet and e-mails, digital security, finding a job digitally, AI and job search. It also offers a validation tool for basic digital skills.

In Portugal, Spain and Greece, national or regional governments, and private organisations manage standardised in-person certifications of digital skills with the DigComp Framework as a basis. In **Portugal**, the system of Recognition, Validation and Certification of Competences (Reconhecimento, Validação e Certificação de Competências, RVCC) (Instituto do Emprego e Formação Profissional, n.d.b), managed by the Institute for Employment and Vocational Training and delivered through the “Centros Qualifica” network, includes a technological training component with digital competences aligned with the National Catalogue of Qualifications (Catálogo Nacional de Qualificações). Nonetheless, the RVCC process is not specifically adapted to the needs of persons with learning difficulties, and there are no easy-read or accessible versions of its instruments. In **Spain**, according to a key informant, *“In Castilla y León the TuCertiCyL (n.d.) certification system, based on DigComp, [is] in place, but one of the main challenges was ensuring that the exams were accessible to everyone, including those with reading difficulties. TuCertiCyL introduced a basic-level exam adapted to Easy Read, with specific exam sessions in this format. In 2025 and 2026, the network of rural centres, trainers and mobile classrooms was expanded to bring digital training to vulnerable groups. Organisations in the disability sector are implementing this type of programme, which leads to official certification.”* In **Greece**, certification schemes such as the International Certification of Digital Literacy (previously known as the European Computer Driving License) (ICDL Foundation, n.d.) are widely recognised in Greece and have been mapped to the DigComp framework. Such certifications take place in local test centres, and are fee-based.

All country reports from InDiCo Activity 2.2 (European Platform for Rehabilitation, n.d.) conclude that there is a lack of standardised methods and tools for the assessment and validation options that are specifically tailored to persons with learning difficulties.

Additionally, across country reports of InDiCo Activity 2.2, especially in Spain, Portugal and Germany there is a lack of awareness regarding national standards or reference frameworks for digital competences among professionals supporting persons with learning difficulties, and professionals in the area of training and assessment and validation of digital skills. **There is also a prevalent lack of awareness about the EU DigComp Framework among such professionals.**

Table 2 – Summary table of status quo of assessment and validation of basic digital competences for persons with learning difficulties

	Austria	Germany	Portugal	Greece	Spain
National Reference Framework for Digital Competences	yes	no	no	no	no
Assessment of digital competences					
Assessment practices are informal and fall into third sector and NGOs.	no	no	yes	yes	no
State or private organisations offer on-line digital competence self-assessment tools aligned with the DigComp Framework	no	yes	yes	yes	no
Private entities offer on-line digital competence self-assessment tools not explicitly aligned with the DigComp Framework.	no	yes	no	no	yes
Mainstream tools to assess digital competences at levels 1 and 2 are accessible to persons with learning difficulties.	no	no	no	no	no
Validation of digital competences					
Public or private online standardised tools for certification of digital competences with the DigComp framework as a basis.	yes	no	no	no	no
Public or private online standardised tools for certification of digital competences that do not use the DigComp framework as a basis.	yes	no	no	no	no
National and regional governments and private organisations manage in-person standardised certification of digital competences with the DigComp framework as a basis.	no	no	yes	yes	yes
Mainstream tools to validate digital competences at levels 1 and 2 are accessible to persons with learning difficulties.	no	no	no	no	yes

Source: Created by the author. This table summarises data gathered through InDiCo desk research and interviews with key informants.

2.3 Analysis of the Problem: Gaps and Challenges regarding the digital inclusion of persons with learning difficulties

2.3.1 Accessibility and awareness of the needs of persons with learning difficulties

The lack of awareness among policymakers, educators, technology developers and the general public about the specific digital needs and challenges of persons with learning difficulties.

Despite growing recognition of digital inclusion in policy and legislative frameworks, the importance of digital competences for persons with learning difficulties is still frequently underestimated, resulting in this group being overlooked in the design and implementation of digital competences initiatives (see section 2.3.2).

This lack of awareness contributes to inaccessible training formats or materials, insufficient use of easy-to-understand language, and the limited integration of accessible digital tools into mainstream education, employment, and public services.

Furthermore, accessibility is often perceived as burdensome or costly, which may discourage organisations from adopting higher accessibility standards. The persistence of exclusionary attitudes in education and society more broadly can also reinforce barriers to digital participation and subsequently affect opportunities in the labour market.

Persons with learning difficulties experience barriers to access to digital devices and cost-free Wi-Fi.

One barrier identified is the fact that access to digital devices such as phones and laptops and high-quality Wi-Fi connection is often unavailable for persons with learning difficulties. It is therefore fundamental to make affordable devices available to people with learning difficulties and their supporters to ensure their digital inclusion. However, according to key informants, in some countries like Spain and Portugal there is increased access to digital devices thanks to public digitalisation programmes and equipment donation schemes. In Spain, Wi-Fi connection is more widespread, while in Portugal, access to Wi-Fi for persons with learning difficulties in non-school settings remains a challenge.

The accelerated pace of technological change, particularly in the field of artificial intelligence (AI), risks creating new forms of digital exclusion for persons with learning difficulties.

Stakeholders highlighted that the rapid emergence and widespread adoption of generative AI tools is transforming the digital environment and raising new demands on digital literacy. Understanding how AI-generated content is produced, assessing its reliability, and using AI systems safely and effectively can already be challenging for the general population and may be even more difficult for people with learning difficulties without tailored support. The speed at which AI technologies, digital platforms, and online services evolve also makes it difficult for training programmes to keep pace with emerging competence requirements. As a result, there is a growing need to ensure that digital competence policies and training frameworks explicitly address AI-related competences, including critical understanding of AI systems, responsible use of generative AI tools, and the ability to navigate increasingly AI-mediated digital environments. At the same time, AI also presents opportunities for inclusion, as AI-powered tools can act as support for persons with learning difficulties when designed and used appropriately.

There is a limited amount of cost-free and accessible courses tailored to the needs of persons with learning difficulties across Europe.

As seen in section 2.1.2, while digital learning platforms and digital competence initiatives are increasingly available, they are often not designed with the cognitive, literacy, and learning needs of persons with learning disabilities in mind.

This challenge is further compounded by socio-economic barriers, as some individuals lack access to digital devices, reliable internet connections, or suitable learning environments, increasing their risk of digital exclusion. The need for accessible, no-cost training extends beyond persons with learning difficulties alone and also applies to other groups facing comprehension barriers, such as individuals with limited language proficiency.

Expanding the availability of such accessible and cost-free learning opportunities is essential to ensuring that persons with learning difficulties can develop the digital competences needed for full participation in education, employment, public services, and everyday life.

2.3.2 Policy and financial resources

National digitalisation and disability rights policies often do not address enhancing the digital competences of persons with learning difficulties.

In all countries studied³, national strategies to improve the digital competences of the overall population have been developed. However, many of those strategies and policies did not include specific objectives, measures or indicators linked to the acquisition of digital competences for persons with learning difficulties.

Although in Austria, the 'Digital Skills for All' and 'Digital Everywhere' include workshops by 'atempo' for persons with learning difficulties to build their digital competences, and in Portugal, InCoDe.2030 does mention the inclusion of persons with learning difficulties, other countries' digital skills strategies lack actions or references to the inclusion of persons with learning difficulties. . In none of the countries studied are there indicators or targets regarding digital competences for persons with learning difficulties. For Germany, Greece, Spain, and Portugal, strategies for the acquisition of digital competences included persons with disabilities, and persons with learning difficulties in a general way, but without offering concrete measures and actionable steps to adapt such wide-spread digital competence trainings, assessment and validation assessment to the needs of persons with learning difficulties.

When it comes to strategies to promote the rights of persons with disabilities (including persons with learning difficulties), none of the countries' strategies included specific actions, guidelines or targets to enhance their digital competences.

Lack of disaggregated data collection to assess the impact of digital competences initiatives.

InDiCo partner's countries regularly monitor the overall achievement of Digital Decade targets including the one on basic digital competences of the overall population, and in Germany, the "Digitales Deutschland" (Digital Germany) project (JFF – Institute for Media Education in Research and Practice, n.d.) examined citizens' preparedness for digitalisation. However, as highlighted by key informants from Portugal and Greece, such data collection does not include disaggregated data about the digital

³ See Section 1.5 for more information about the Policy Recommendations Sub-section 2.3 data collection and methodology.

competences of persons with learning difficulties, which makes it difficult to define and monitor evidence-based policies to enhance their digital competences.

A lack of awareness from decision-makers on the support needs of persons with learning difficulties leads to gaps in political support and funding.

In InDiCo partners' countries the lack of awareness among decision-makers of the specific needs of persons with learning difficulties, often translates into limited political commitment and insufficient political support and funding for digital inclusion measures.

As a result, organisations working with persons with learning difficulties frequently face political and financial constraints that hinder the development and delivery of accessible digital competence training, awareness-raising activities, and assessment and validation programmes. For instance, as explained by a key informant from Portugal, *"there are [...] difficulties in implementing more innovative and flexible training models, due to existing regulations in the field of training directed at people with disabilities [...]"*.

Limited resources affect the availability of specialised assessment tools, tailored training modules, assistive technologies, and adequate technical equipment needed to support meaningful participation in digital environments. In several countries, support for persons with learning difficulties is largely provided by third-sector and non-profit organisations, many of which lack the financial capacity to invest in up-to-date digital infrastructure and technologies. InDiCo Activity 2.1 country reports also emphasised the need for greater investment in teaching and support staff, as well as additional human resources to design, implement, and sustain programmes aimed at developing digital competences among people with learning difficulties.

Employability as the main motivation for funding of lifelong learning.

While enhancing the digital competences of persons with learning difficulties may lead to increased employability for this target group, national strategies and funding must also consider the important role that basic digital competences play in everyday and personal life.

Employability is often the main motivation to fund life-long learning, including digital competence training, assessment and validation, but this comes to the detriment of programmes fostering key basic digital competences for vulnerable populations, such as persons with learning difficulties.

For instance, in Austria, DigCert, the standardized procedure to certify general digital knowledge in everyday life and work only covers digital competences on levels 3-5

(the levels required for professional compatibility). Examples like this one should be prevented, and basic competences should be included in certification procedures of digital competences. A change of mindset would be necessary to ensure that funding is also dedicated to the development of basic digital competences.

2.3.3 Quality of learning and professionalisation

Digital competence trainings still have an overall outcome-focused approach.

InDiCo findings describe that national digital competence initiatives often focus primarily on the achievement of predefined learning outcomes, qualifications, or certifications, while insufficient attention is paid to the individual learning journey, personal development, and gradual acquisition of competences.

Process-oriented approaches place greater emphasis on continuous learning, personalised support, adaptive teaching methods, and the development of confidence and autonomy over time. Such approaches are particularly relevant for persons with learning difficulties, whose learning trajectories may differ significantly from those of other learners and require flexibility to accommodate diverse needs and abilities

The prior knowledge of persons with learning difficulties on digital competences is very heterogeneous.

According to our findings, persons with learning difficulties often begin digital-competence training from very different starting points, making it difficult to apply standardised approaches to assessment, validation, and instruction. In many cases, participants differ not only in their existing digital competences but also in their literacy, communication, cognitive, and social skills, which can significantly influence their ability to engage with digital technologies.

There is also a gap in the basic digital competences that are taught to young persons with learning difficulties at school, which may lead to very limited prior knowledge. According to a key informant from Austria, *"we do not do enough to teach basic digital skills to this group of students in schools. This means that young people with learning difficulties are excluded at this early stage, and it is very difficult to make up for these shortcomings."*

As a result, comparisons between learners are often challenging, and progress is better assessed in relation to individual development rather than against uniform benchmarks. Addressing this diversity requires personalised learning pathways, differentiated teaching methods, and adaptive support mechanisms that enable learners to progress at their own pace.

Existing digital competence workshops lack appropriate formats for persons with learning difficulties.

Many existing digital competence initiatives are designed around short-term, standardised training formats that do not adequately reflect the diverse learning needs, learning pace, and support requirements of this target group. One-off or short-duration workshops are often insufficient for learners who require repetition, ongoing practice, and personalised guidance to develop and retain digital competences.

In addition, training curricula and competence validation systems frequently lack the flexibility needed to accommodate different learning profiles and individual circumstances. Interviewees stressed the importance of breaking learning content into small, manageable steps, using clear and simplified instructions, and incorporating practical, hands-on activities that connect digital competences to everyday life.

The content of digital competence workshops and training programmes often struggles to keep pace with the rapid evolution of digital technologies.

Project findings describe that transformation, particularly in areas such as online services, mobile technologies, artificial intelligence, and digital communication tools, is advancing much faster than education and training systems can adapt. As a result, training content can quickly become outdated, reducing its relevance to the realities that learners encounter in everyday life, education, and employment.

Without regular revision of content and teaching approaches, the gap between technological progress and learners' digital competences risks widening, thereby reinforcing existing inequalities and limiting the digital inclusion of persons with learning difficulties.

The need for a greater emphasis on professional facilitation of digital competences learning.

Effective and professional facilitation of digital competence learning requires more than the transmission of technical knowledge; it depends on skilled guidance, empathy, and a deep understanding of learners' individual needs, strengths, and support requirements.

Challenges to achieve effective digital competences training are often linked not only to limited digital competences among educators and support staff but also to uncertainty about new technologies and changing pedagogical approaches. As digital technologies increasingly provide access to information on demand, the focus of

education needs to shift from simply delivering content towards facilitating how learners acquire, evaluate, and apply knowledge.

This requires well-trained educators who can adopt inclusive, person-centred approaches, adapt learning materials and technologies to individual needs, and provide ongoing learning coaching and support. However, many organisations lack staff with specialist expertise in supporting persons with learning difficulties, staff often lacks time and capacity due to high amounts of administrative work, and opportunities for professional development in inclusive digital education remain limited.

Practitioners supporting persons with learning difficulties often lack digital professionalisation.

As digital technologies evolve rapidly, practitioners working with persons with learning difficulties struggle to keep pace with the latest tools and platforms, resulting in learning provision that is not sufficiently aligned with new digital realities. This can make it more difficult to support persons with learning difficulties in using the most up to date digital technologies confidently in their everyday lives, education, and employment.

Additionally, many professionals continue to approach digitalisation by simply transferring analogue practices into digital environments, rather than exploiting the new learning opportunities offered by technology

It is therefore essential for practitioners to have access to and actively engage in professional development opportunities that strengthen their digital literacy, familiarity with assistive technologies, and knowledge of accessibility features.

Limited pedagogical support for practitioners supporting persons with learning difficulties.

Supporting the development, assessment, and validation of digital competences among persons with learning difficulties requires a high level of pedagogical expertise that many practitioners are not sufficiently supported to develop. Educators, trainers, assessors, and support workers require guidance on how to select and integrate digital tools that are relevant to learners' everyday lives, adapt content into easy-to-understand formats, and implement inclusive teaching strategies that foster engagement and participation.

Pedagogical practices often depend on individual initiative rather than on coordinated institutional support, resulting in inconsistent approaches across organisations and settings. There is therefore a need for systematic pedagogical support structures,

including ongoing training, mentoring, access to specialised resources, and guidance on using assessment and validation processes as empowering tools for recognising learners' existing competences and planning future learning pathways.

2.3.4 Stakeholder collaboration and development of common frameworks and standards

Limited collaboration between various stakeholders in the provision of digital competence training for persons with learning difficulties.

In the country reports of InDiCo Activity 2.1 and 2.2, it was underlined how pooling resources and expertise from various stakeholders, including governments and regulators (at the national and local levels), companies and technology providers, non-profit organisations and advocacy groups representing persons with learning difficulties, and educational institutions could enhance the provision of training, assessment and validation of digital competences of persons with learning difficulties.

However, current efforts are often fragmented, with initiatives being implemented in isolation and relying heavily on individual organisations or local projects rather than on coordinated strategies and partnerships. This fragmentation can lead to duplication of efforts, gaps in provision, and inconsistencies in the quality and accessibility of training opportunities.

Additionally, there is little involvement of persons with learning difficulties themselves in the design of policies and solutions to enhance their own digital competences, as described by a key informant from Portugal.

In Germany, which has a federal system, the complexity of governance structures, and the distribution of responsibilities across different policy domains can slow down the development and implementation of inclusive digital competence initiatives. This lack of coordination is also prevalent in Portugal, and a key informant stated that *"proliferation of initiatives without effective coordination between the IEFP [national employment service], social solidarity institutions (IPSS), local authorities and the special education sector"*. In contrast, Austria has been able to organise inclusive digital competence courses for persons with learning difficulties in its "Digital Everywhere" initiative by collaborating with the social service provider for persons with disabilities "atempo".

Practitioners experience gaps in awareness of existing digital competence frameworks, and a lack of guidance for the design of digital competences workshops and the assessment and validation of digital competences among persons with learning difficulties.

InDiCo project findings highlight that practitioners experience considerable uncertainty regarding what digital competences should be assessed, how they should be assessed, and which criteria should be used to ensure consistent and meaningful validation of learning outcomes.

While frameworks such as DigComp provide a valuable reference point, its implementation varies across countries, as described in section 2.1.2 of this publication. Additionally, as depicted in section 2.2.2, practitioners also lack awareness about existing EU-level (DigComp) and national-level digital competence frameworks. This results in fragmented approaches to training, assessment, and certification.

Regarding the implementation of DigComp (InDiCo Project, 2024a), there is an evident disconnection between the theoretical DigComp framework and the practical implementation of support for digitally excluded people, such as persons with learning difficulties, on the ground. The framework is perceived as too complex by practitioners, and its extensive document is not easily applicable to local contexts at the ground level by training providers. To effectively implement the DigComp framework in local contexts, it must first be comprehensively understood and endorsed by national governments and organisations, to then include it in practical applications tailored to their contexts and needs.

The absence of dedicated assessment and validation frameworks tailored to the needs of persons with learning difficulties further complicates efforts to assess and validate competences accurately and compare competence levels across different contexts. In many cases, organisations rely on their own methods and tools, leading to inconsistencies in the recognition and validation of digital competences.

There is therefore a need for the dissemination among practitioners of existing digital competence frameworks, as well as for the development of harmonised validation and assessment criteria, and practical guidance for practitioners, including manuals and tools that can support the assessment and validation of digital competences in accessible and inclusive ways.

2.3.5 Assessment and validation of basic digital competences

Existing assessment and validation tools for digital competences do not adequately take into account the diversity of needs and abilities of persons with learning difficulties.

As mapped in section 2.2.2, existing assessment and validation tools for digital competences do not adequately take into account the diversity of needs and abilities of persons with learning difficulties or other marginalised groups.

Most available assessment tools have been designed for the general population and therefore fail to accommodate variations in literacy levels, communication styles, cognitive functioning, learning pace, and support requirements. As a result, many assessment procedures are not fully accessible and may not accurately capture the digital competences that persons with learning difficulties possess.

Existing tools often rely on complex language, abstract concepts, lengthy instructions, rigid testing formats, or inaccessible digital interfaces, creating barriers to participation and increasing the risk of inaccurate or biased assessments. Furthermore, the wide diversity of needs among persons with learning difficulties means that a single assessment approach is rarely appropriate for all learners.

In addition, the absence of dedicated frameworks and specialised tools for assessing digital competences among persons with learning difficulties creates uncertainty among practitioners and limits the comparability and recognition of learning outcomes.

Limited financial, technical and human resources to ensure high-quality assessment and validation for persons with learning difficulties

Robust assessment and validation processes are resource-intensive, requiring significant staff time, specialised expertise, accessible tools, adapted learning materials, digital infrastructure, and ongoing quality assurance.

In many cases, organisations face difficult cost-benefit decisions when determining whether to invest in tailored validation procedures, particularly where certification is not linked to formal qualifications or vocational education pathways. Resource constraints also affect the development and implementation of specialised assessment tools capable of accurately capturing the diverse competences of people with learning difficulties. This is compounded by shortages of qualified personnel with expertise in digital competences and inclusive pedagogical approaches. As a result, opportunities for assessment and validation are often limited in scope, fragmented across providers, or unavailable altogether.

3 Call to Action: Policy Recommendations to Close the Digital Gap for Persons with Learning Difficulties

3.1 Call to action for service providers

- **Apply competence-oriented approaches** that promote self-efficacy, and that facilitate and further promote learning in line with standardised competence frameworks like the DigComp and national strategies, and using the assessment of competences as a means to track learners' progress and to define a learning journey.
- **Address the different levels of prior knowledge** of persons with learning difficulties through the assessment of existing competences in order to ensure personalized pathways along predefined learning outcomes.
- **Ensure appropriate workshop formats** for persons with learning difficulties that:
 - are not one-time short workshops and ensure repetition and more attention to ensure capacity-building.
 - are tailored to accommodate diverse learning styles and preferences of persons with learning difficulties.
 - Include interactive elements (e.g. watching videos, incorporating multimedia, talking, visual aids, worksheets).
 - Organise the learning process into manageable steps.
 - Provide training in the practical use of specific programmes and applications, focusing learning on solving real-life problems and everyday tasks.
- **Implement constant updates of the content of workshops** to ensure their relevance and alignment with evolving digital technologies.
- **Promote actions** at the organisational level **that cultivate a professional facilitation of assessment and validation**, and the pedagogical support of practitioners supporting persons with learning difficulties. This includes

ensuring that practitioners continuously develop their own digital, and assessment and validation competences.

- **Guarantee tailor-made digital competences validation processes** for persons with learning difficulties that are embedded in learning processes, catering to the specific needs of persons with learning difficulties and relevant to learner's experiences and backgrounds.
- **Ensure accessible assessment procedures and tools** for persons with learning difficulties that:
 - ensure assessment content accessibility for individuals with varied needs through customised approaches, providing alternative formats (easy-to-read, pictograms, video, audio), clear instructions and technical support.
 - use accessible language.
 - promote practical assessments for persons with intellectual disabilities.
 - provide necessary assistive tools and the assistance of trainers or assessors when necessary.
 - exist within a structured system to measure individual user progress, identifying strengths and areas for improvement.
- **Involve persons with learning difficulties themselves** in the development of training, assessment and validation of digital competences, as well as in the evaluation of training programmes, following the principles of participatory design.
- **Establish and participate in practice-sharing networks** among service providers to promote the exchange of tested and validated materials, methodologies and assessment instruments.
- **Participate in EU-level communities of practice** such as the Digital Education Hub or the DigComp Community of Practice to exchange good practices with organisations across the EU.
- **Monitor developments such as DigComp and national digital competence framework updates**, and projects such as **InDiCo**, with tools such as a Catalogue of Relevant Digital Competences, and an Assessment and Validation Framework tailored to the needs of persons with learning difficulties.
- **Participate in your country's National Coalition for Digital Skills** to advocate for better training, assessment and validation of digital competences

for persons with learning difficulties and exchange with key national stakeholders on the topic.

- **Raise awareness and participate in advocacy actions** about the needs of persons with learning difficulties.

3.2 Call to action for national policymakers

- Include concrete actions and practical guidelines that **promote the enhancement of digital competences of persons with learning difficulties within national policies** which aim at improving the overall population's digital competences (including in specific areas like AI and cybersecurity) and/or at promoting the rights and inclusion of persons with disabilities.
- **Anchor digitalisation policy as a cross-departmental issue**, coordinating key ministries and departments in the areas of education, employment, social inclusion and disability policies.
- **Establish a national observatory or monitoring mechanism** collecting disaggregated data on digital competences of persons with learning difficulties to strengthen policy monitoring and the development of new actions.
- Update national digital competence frameworks to **promote literacy in emerging technologies, including AI-related competences**.
- **Fully use the potential of the National Coalition for Digital Skills and Jobs** to support the development of policies and actions to enhance the population's digital skills. Foster the participation of organisations representing vulnerable groups such as persons with disabilities and persons with learning difficulties in the National Coalition, as well as organisations with practical experience in supporting them.
- **Foster the collaboration between various stakeholders** (including governments and regulators, employers, companies and technology providers, non-profit organisations and advocacy groups representing persons with learning difficulties, and educational institutions) in the **provision of digital competences training for persons with learning difficulties**, and consider the creation of a working group to coordinate actions.
- **Ensure enabling framework conditions that promote high-quality training on digital competences for persons with learning difficulties.** Such enabling conditions include:

- courses to enhance the digital competences of persons with learning difficulties should be cost-free and tailored to learners' needs.
 - digital competences courses should have a long-term nature to ensure that persons with learning difficulties can fully benefit from them (thanks to repetition, and increased support).
 - the content of digital competences workshops for persons with learning difficulties should be updated constantly to ensure its relevance and alignment with evolving digital technologies.
 - the professional facilitation of learning and pedagogical support should be emphasised in policies linked to digital competences of persons with learning difficulties to provide high-quality courses, assessment and validation. For instance, promoting mandatory training in accessibility, assistive technologies and digital inclusion, universal design, for trainers and education professionals.
- **Guarantee sufficient funding for organisations that support persons with learning difficulties in enhancing their digital competences**, foreseeing funding not only for actions improving the employability of persons with learning difficulties, but also for actions promoting digital inclusion in their personal life.
 - **Create a national and/or regional repository of free learning materials** that have been successfully used to support persons with learning difficulties to acquire digital competences.
 - **Raise awareness about existing national digital competence frameworks, and assessment and validation processes** among organisations providing digital competence training for persons with learning difficulties, for example in link with national strategies implementing the DigComp framework.
 - **Develop harmonised standards or guidance for the assessment and validation of digital competences for persons with learning difficulties**, building on the DigComp framework.
 - **Further develop policies and fund projects** to enhance the access of persons with learning difficulties to **digital devices and cost-free Wi-Fi**.
 - **Duly implement the EU Accessibility Act**, and the **Web Accessibility Directive**.

3.3 Call to action for EU policymakers

- Consider **the development of a DigComp Implementation Strategy** to foster the uptake of the DigComp Framework across Europe. Such a strategy should include actions such as:
 - **fostering the creation and strengthening of National Coalitions for Digital Skills and Jobs** and consider their potential governance and DigComp implementation role.
 - **developing tools and guidelines for the implementation of DigComp**, including on the creation of national digital competence frameworks aligned with DigComp, and good practices of assessment and validation tools for vulnerable groups, such as persons with learning difficulties.
 - **investing time and resources to raise awareness among national and local governments and grassroots organisations** in the uptake of the DigComp Framework.
- **Promote a strong European Social Fund**, in the upcoming Multiannual Financial Framework (MFF) 2028-2034, and encourage EU Member States to invest in enhancing the digital competences of persons with learning difficulties via the National and Regional Partnership Agreements (NRPPs).
- **Monitor and evaluate the implementation of the EU Accessibility Act and the Web Accessibility Directive** and evaluate if further actions should be taken.

4 Next Steps

The findings presented in this Policy Recommendations document demonstrate that persons with learning difficulties continue to face significant barriers to acquiring, assessing and validating digital competences. Despite progress in European and national digital skills policies, important gaps remain at the European and national levels with regards to accessibility and awareness of the digital support needs of persons with learning difficulties; insufficient policy attention and financial resources; limitations in the quality of learning provision and professionalisation of practitioners; weak stakeholder coordination and use of common frameworks; and the lack of accessible assessment and validation systems for basic digital competences. As Europe accelerates its digital transformation and increasingly integrates emerging technologies such as artificial intelligence into everyday life, addressing these gaps becomes both more urgent.

The recommendations outlined in this document aim to provide clear guidance for service providers and European and national-level policymakers on how to ensure that persons with learning difficulties can access high-quality training, assessment and validation of their basic digital competences, and therefore fostering a more inclusive digital society. Their implementation would generate substantial benefits not only for persons with learning difficulties but also for society as a whole. Better access to digital competence training, assessment and validation would support greater autonomy, participation in community life, access to public services, educational opportunities, employability, and lifelong learning. More inclusive digital ecosystems would also contribute to reducing social inequalities, strengthening social cohesion, and ensuring that no one is left behind in the digital transition.

Several actions should be prioritised in the short term.

First, **digitalisation and disability policies should explicitly recognise the digital competence needs of persons with learning difficulties** and include concrete objectives, measures, and monitoring mechanisms.

Second, sustainable **funding should be allocated to accessible and tailored digital competence programmes for persons with learning difficulties, practitioner training, and the development of inclusive assessment and validation systems.**

Third, **stakeholders should strengthen cooperation through national and European networks**, including National Coalitions for Digital Skills and Jobs, to align efforts and share expertise.

Fourth, **greater emphasis should be placed on the accessibility of learning materials, as well as assessment and validation tools and procedures**, ensuring that they reflect the diversity of learners' needs and abilities.

Finally, **policymakers and service providers should anticipate future competence requirements, particularly those associated with artificial intelligence and other rapidly evolving technologies**, to prevent new forms of digital exclusion from emerging.

The InDiCo project contributes directly to these objectives through the development of practical resources, including the **Catalogue of Relevant Digital Competences**, the **Validation Methodology and Tool**, and the **Train-the-Trainer Manual**. These outputs provide concrete tools that can support policymakers, practitioners, and organisations in implementing more inclusive approaches to digital competence development.

Achieving the Digital Decade ambition of a digitally skilled population will not be possible without ensuring that persons with learning difficulties are fully included in digital-skills policies and initiatives. The challenge is therefore not only to increase the level of digital competences across Europe, but also to ensure that digital transformation is accessible, and inclusive. The actions proposed in this document offer a pathway towards that objective and call on all stakeholders to work collectively to ensure that persons with learning difficulties can participate confidently, independently, and safely in Europe's digital future.

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Annexes:

InDiCo Policy Recommendations - Interview Questionnaires

Annex 1 - Questionnaire for EU-level key informants

In the first year of the [InDiCo project](#), the consortium did research on the status quo of the implementation of the EU DigComp strategy and the assessment and validation of basic digital competences for persons with learning difficulties. The results were published in country reports and a pan-European report which can be found [here](#).

To draft the project's Policy Recommendations report, we are interested in gathering any changes of the situation that might have occurred at the EU, as well as in your opinion on the gaps and challenges that were identified and the policy recommendations drafted to address them.

Below, you can find a series of questions gathered under four blocks: the status-quo of the implementation of the DigComp Framework at the EU level; the status quo on the assessment and validation of digital competences; the gaps and challenges previously identified; and the draft policy recommendations. We highly appreciate your contribution!

1. Status quo of DigComp Framework implementation at the EU level

In 2025, the European Commission's Joint Research Centre published the fifth iteration of the DigComp Framework, DigComp 3.0 (more information available [here](#)). What changes in DigComp implementation can be expected from the publication of DigComp 3.0?

Have any other new actions been developed, between 2024 and 2026, for the implementation of the EU DigComp Framework strategy to improve digital competences for all citizens in Europe? Are you aware of any initiatives in Europe to promote digital inclusion for all, particularly for people with learning difficulties?

2. Status quo of the assessment and validation of basic digital competences

Between 2024 and 2026, has the status quo of the assessment and validation of digital competences at levels 1 and 2 of the DigComp framework for persons with learning difficulties changed in Europe?

3. Gaps and challenges

In the first year of the InDiCo project, research on the implementation of the EU DigComp strategy and the assessment and validation of basic digital competences for persons with learning difficulties revealed gaps and challenges along the following categories:

- Policy and financial resources
 - The need to consider persons with learning difficulties in national policies with regard to digitalisation
 - The need for financial resources for reaching out to persons with learning difficulties
 - Employability as the main motivation for funding of lifelong learning
- Accessibility and awareness of the needs of persons with learning difficulties
 - The need to raise awareness of needs of persons with learning difficulties
 - The need for access to digital devices and cost-free Wi-Fi

- The need for cost-free and accessible courses tailored to the needs of persons with learning difficulties
- Quality of learning and professionalisation
 - The need to develop process-oriented approaches that facilitate and further promote learning
 - Challenges related to the heterogeneous level of prior knowledge
 - The development of an appropriate format of the workshops for persons with learning difficulties
 - The need of constant updating of content of the workshops
 - The development of an emphasis on professional facilitation of learning
 - The need for pedagogical support for practitioners supporting persons with learning difficulties
 - The need for digital professionalisation of practitioners supporting persons with learning difficulties
- Stakeholder collaboration and development of standards
 - The need for collaboration between the various stakeholders in the provision of courses
 - The lack of harmonised standards that can be used as a reference point
- Validation of basic digital competences
 - Validation of digital competences tailored to persons with learning difficulties' needs is a challenge.
 - The need for accessible assessment procedures for persons with learning difficulties
 - Accessibility of assessment and validation tools
 - The need for financial resources to ensure high-quality validation for persons with learning difficulties

Questions:

1. Considering the current situation - are there any gaps and challenges identified which are NOT (any more) relevant at the EU level? Please indicate them.
2. Would you include other gaps and challenges that have arisen in the last two years? If yes, which ones?
3. Would they fit in the categories included above or should new categories be added?

4. Policy Recommendations

On the basis of findings regarding the implementation of the EU DigComp strategy and the assessment and validation of basic digital competences for persons with learning difficulties we drafted policy recommendations for national and EU policymakers, and for service providers, available below.

4.1 InDiCo draft policy recommendations for national policymakers:

1. Include concrete actions and practical guidelines that promote the enhancement of digital competences of persons with learning difficulties within national policies which aim at improving the overall population's digital competences and/or at promoting the rights and inclusion of persons with disabilities.
2. Foster the collaboration between various stakeholders (including governments and regulators, companies and technology providers, non-profit organisations and advocacy groups representing persons with learning difficulties, and educational institutions) in the provision of digital competences courses for persons with learning difficulties, and consider the creation of a working group to coordinate actions.
3. Ensure enabling framework conditions that promote high-quality courses on digital competences for persons with learning difficulties. Such enabling conditions include:

- a. Courses to enhance the digital competences of persons with learning difficulties should be cost-free and tailored to learners' needs.
 - b. Digital competences courses should have a long-term nature to ensure that persons with learning difficulties can fully benefit from them (thanks to repetition, and increased support).
 - c. The content of workshops on digital competences for persons with learning difficulties should be updated constantly to ensure its relevance and alignment with evolving digital technologies.
 - d. The professional facilitation of learning and pedagogical support should be emphasised in policies linked to digital competences of persons with learning difficulties to provide high-quality courses, assessment, and validation.
4. Guarantee sufficient funding to support the enhancement of digital competences of persons with learning difficulties, foreseeing funding not only for actions improving the employability of persons with learning difficulties, but also for actions promoting digital inclusion in their personal life.
 5. Raise awareness about existing assessment and validation processes among organisations providing digital competence training for persons with learning difficulties, for example in link with national strategies implementing the DigComp framework.
 6. Develop harmonised standards for the assessment and validation of digital competences for persons with learning difficulties, building on the DigComp framework.
 7. Further develop policies and fund projects to enhance the access of persons with learning difficulties to digital devices and cost-free Wi-Fi.
 8. Duly implement the EU Accessibility Act, and the Web Accessibility Directive.

Questions:

1. Considering the current situation in your country – are any of the recommendations identified NOT relevant to your country? Please indicate them.
2. Would you include other recommendations for national policy makers? If yes, which ones?

4.2 InDiCo draft Policy Recommendations for EU Policymakers:

1. Involve national and local governments and grassroots organisations in the uptake of the DigComp Framework.
2. Develop tools and guidelines for the practical implementation of DigComp, including good practices of assessment and validation tools for vulnerable groups, such as persons with learning difficulties.
3. Invest time and resources to raise awareness at the local and national levels about the DigComp Framework, to enhance its uptake.
4. Promote a strong European Social Fund, in the upcoming Multiannual Financial Framework (MFF) 2028-2024, and encourage EU Member States to invest in enhancing the digital competences of persons with learning difficulties via the National and Regional Partnership Agreements (NRPPs).
5. Monitor and evaluate the implementation of the EU Accessibility Act and the Web Accessibility Directive and evaluate if further actions should be taken.

Questions:

1. Considering the current situation at the EU level, are any of the recommendations identified NOT relevant? Please indicate them.
2. Would you include other recommendations for EU-level policy makers? If yes, which ones?

4.3 InDiCo draft Policy Recommendations for service providers:

1. Apply competence-oriented approaches that facilitate and further promote learning in line with standardised competence frameworks like the DigComp and national strategies, using the assessment of competences as a means to track learners' progress and to define a learning journey.
2. Address the different levels of prior knowledge of persons with learning difficulties through the assessment of existing competences in order to ensure personalized pathways along predefined learning outcomes.
3. Ensure appropriate workshop formats for persons with learning difficulties that:
 - a. Are not one-time short workshops and ensure repetition and more attention to ensure capacity-building.
 - b. Are tailored to accommodate diverse learning styles and preferences of persons with learning difficulties.
 - c. Include interactive elements (e.g. watching videos, incorporating multimedia, talking, visual aids, worksheets).
 - d. Organise the learning process into manageable steps.
 - e. Provide trainings in the practical use of specific programmes and applications.
2. Implement constant updates of the content of workshops to ensure their relevance and alignment with evolving digital technologies.
3. Promote actions at the organisational level that cultivate a professional facilitation of assessment and validation, and the pedagogical support of practitioners supporting persons with learning difficulties. This includes ensuring that practitioners develop their own digital, and assessment and validation competences.
4. Guarantee tailor-made digital competences validation processes for persons with learning difficulties that are embedded in learning processes, catering to the specific needs of persons with learning difficulties and relevant to learner's experiences and backgrounds.
5. Ensure accessible assessment procedures and tools for persons with learning difficulties that:
 - a. Ensure assessment content accessibility for individuals with varied needs through customised approaches, providing alternative formats, clear instructions, and technical support.
 - b. Use accessible language.
 - c. Promote practical assessments for persons with intellectual disabilities.
 - d. Provide necessary assistive tools and the assistance of trainers or assessors when necessary.
 - e. Exist within a structured system to measure individual user progress, identifying strengths and areas for improvement.
7. Raise awareness and participate in advocacy actions about the needs of persons with learning difficulties.

Questions:

1. Considering the current situation in your country – are any of the recommendations identified NOT relevant to your country? Please indicate them.
2. Would you include other recommendations for service providers? If yes, which ones?

Annex 2 - Questionnaire for national-level key informants

In the first year of the [InDiCo project](#), the consortium did research on status quo of the implementation of the EU DigComp strategy and the assessment and validation of basic digital competences for persons with learning difficulties. The results were published in country reports which can be found [here](#).

Currently, to draft the project's Policy Recommendations report, we are interested in gathering any changes of the situation that might have occurred in your country, as well as in your opinion on the gaps and challenges that were identified and the policy recommendations drafted to address them.

Below, you can find a series of questions gathered under four blocks: the status-quo of the implementation of the DigComp Framework in your country; the status quo on the assessment and validation of digital competences; the gaps and challenges previously identified; and the draft policy recommendations. We highly appreciate your contribution!

1. Status quo of DigComp Framework implementation at the national level

Have there been any changes in the implementation of a national DigComp Strategy in your country between 2024 and 2026?

Has a national DigComp framework been developed in your country between 2024 and 2026? If yes, how is the national framework linked to the National Qualifications Framework?

2. Status quo of the assessment and validation of basic digital competences

Between 2024 and 2026, has the status quo of the assessment and validation of digital competences at levels 1 and 2 of the DigComp framework for persons with learning difficulties changed in your country?

3. Gaps and challenges

In the first year of the InDiCo project, research on the implementation of the EU DigComp strategy and the assessment and validation of basic digital competences for persons with learning difficulties revealed gaps and challenges along the following categories:

- Policy and financial resources
 - The need to consider persons with learning difficulties in national policies with regard to digitalisation
 - The need for financial resources for reaching out to persons with learning difficulties
 - Employability as the main motivation for funding of lifelong learning
- Accessibility and awareness of the needs of persons with learning difficulties
 - The need to raise awareness of needs of persons with learning difficulties
 - The need for access to digital devices and cost-free Wi-Fi
 - The need for cost-free and accessible courses tailored to the needs of persons with learning difficulties
- Quality of learning and professionalisation
 - The need to develop process-oriented approaches that facilitate and further promote learning
 - Challenges related to the heterogeneous level of prior knowledge
 - The development of an appropriate format of the workshops for persons with learning difficulties
 - The need of constant updating of content of the workshops
 - The development of an emphasis on professional facilitation of learning
 - The need for pedagogical support for practitioners supporting persons with learning difficulties
 - The need for digital professionalisation of practitioners supporting persons with learning difficulties

- Stakeholder collaboration and development of standards
 - The need for collaboration between the various stakeholders in the provision of courses
 - The lack of harmonised standards that can be used as a reference point
- Validation of basic digital competences
 - Validation of digital competences tailored to persons with learning difficulties' needs is a challenge.
 - The need for accessible assessment procedures for persons with learning difficulties
 - Accessibility of assessment and validation tools
 - The need for financial resources to ensure high-quality validation for persons with learning difficulties

Questions:

1. Considering the current situation - are there any gaps and challenges identified which are NOT (any more) relevant to your country? Please indicate them.
2. Would you include other gaps and challenges that have arisen in your country in the last two years? If yes, which ones?
3. Would they fit in the categories included above or should new categories be added?

4. Policy Recommendations

On the basis of findings regarding the implementation of the EU DigComp strategy and the assessment and validation of basic digital competences for persons with learning difficulties we drafted policy recommendations for national policymakers and for service providers, available below.

4.1 InDiCo draft policy recommendations for national policymakers :

1. Include concrete actions and practical guidelines that promote the enhancement of digital competences of persons with learning difficulties within national policies which aim at improving the overall population's digital competences and/or at promoting the rights and inclusion of persons with disabilities.
2. Foster the collaboration between various stakeholders (including governments and regulators, companies and technology providers, non-profit organisations and advocacy groups representing persons with learning difficulties, and educational institutions) in the provision of digital competences courses for persons with learning difficulties, and consider the creation of a working group to coordinate actions.
3. Ensure enabling framework conditions that promote high-quality courses on digital competences for persons with learning difficulties. Such enabling conditions include:
 - a. Courses to enhance the digital competences of persons with learning difficulties should be cost-free and tailored to learners' needs.
 - b. Digital competences courses should have a long-term nature to ensure that persons with learning difficulties can fully benefit from them (thanks to repetition, and increased support).
 - c. The content of workshops on digital competences for persons with learning difficulties should be updated constantly to ensure its relevance and alignment with evolving digital technologies.
 - d. The professional facilitation of learning and pedagogical support should be emphasised in policies linked to digital competences of persons with learning difficulties to provide high-quality courses, assessment and validation.

4. Guarantee sufficient funding to support the enhancement of digital competences of persons with learning difficulties, foreseeing funding not only for actions improving the employability of persons with learning difficulties, but also for actions promoting digital inclusion in their personal life.
5. Raise awareness about existing assessment and validation processes among organisations providing digital competence training for persons with learning difficulties, for example in link with national strategies implementing the DigComp framework.
6. Develop harmonised standards for the assessment and validation of digital competences for persons with learning difficulties, building on the DigComp framework.
7. Further develop policies and fund projects to enhance the access of persons with learning difficulties to digital devices and cost-free Wi-Fi.
8. Duly implement the EU Accessibility Act, and the Web Accessibility Directive.

Questions:

1. Considering the current situation in your country – are any of the recommendations identified NOT relevant to your country? Please indicate them.
2. Would you include other recommendations for national policy makers? If yes, which ones?

4.2 InDiCo draft Policy Recommendations for service providers:

1. Apply competence-oriented approaches that facilitate and further promote learning in line with standardised competence frameworks like the DigComp and national strategies, using the assessment of competences as a means to track learners' progress and to define a learning journey.
2. Address the different levels of prior knowledge of persons with learning difficulties through the assessment of existing competences in order to ensure personalized pathways along predefined learning outcomes.
3. Ensure appropriate workshop formats for persons with learning difficulties that:
 - a. Are not one-time short workshops and ensure repetition and more attention to ensure capacity-building.
 - b. Are tailored to accommodate diverse learning styles and preferences of persons with learning difficulties.
 - c. Include interactive elements (e.g. watching videos, incorporating multimedia, talking, visual aids, worksheets).
 - d. Organise the learning process into manageable steps.
 - e. Provide trainings in the practical use of specific programmes and applications.
4. Implement constant updates of the content of workshops to ensure their relevance and alignment with evolving digital technologies.
5. Promote actions at the organisational level that cultivate a professional facilitation of assessment and validation, and the pedagogical support of practitioners supporting persons with learning difficulties. This includes ensuring that practitioners develop their own digital, and assessment and validation competences.
6. Guarantee tailor-made digital competences validation processes for persons with learning difficulties that are embedded in learning processes, catering to the specific needs of persons with learning difficulties and relevant to learner's experiences and backgrounds.
7. Ensure accessible assessment procedures and tools for persons with learning difficulties that:

- a. Ensure assessment content accessibility for individuals with varied needs through customised approaches, providing alternative formats, clear instructions and technical support.
 - b. Use accessible language.
 - c. Promote practical assessments for persons with intellectual disabilities.
 - d. Provide necessary assistive tools and the assistance of trainers or assessors when necessary.
 - e. Exist within a structured system to measure individual user progress, identifying strengths and areas for improvement.
8. Raise awareness and participate in advocacy actions about the needs of persons with learning difficulties.

Questions:

1. Considering the current situation in your country – are any of the recommendations identified NOT relevant to your country? Please indicate them.
2. Would you include other recommendations for service providers? If yes, which ones?