Increase
Digital
Competences
to Promote Inclusion

InDiCo - Increase Digital Competences to Promote Inclusion

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Assessment and validation of digital competences at levels 1 and 2 for persons with learning difficulties

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1 Introduction

The European Commission's (2023) targets for the digital decade envisage that at least 80% of those aged 16-74 shall have at least basic digital skills by 2030. DigComp 2.2, the digital competence framework for citizens (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.

Although the DigComp 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 we 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 them, or the adult learning and education staff who support and accompany persons with learning difficulties 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 improved validation of digital competences in connection with the DigComp framework.

As an introduction to this report, DigComp is briefly explained and the central concepts of assessment and validation are introduced, followed by an explanation of the methodology.

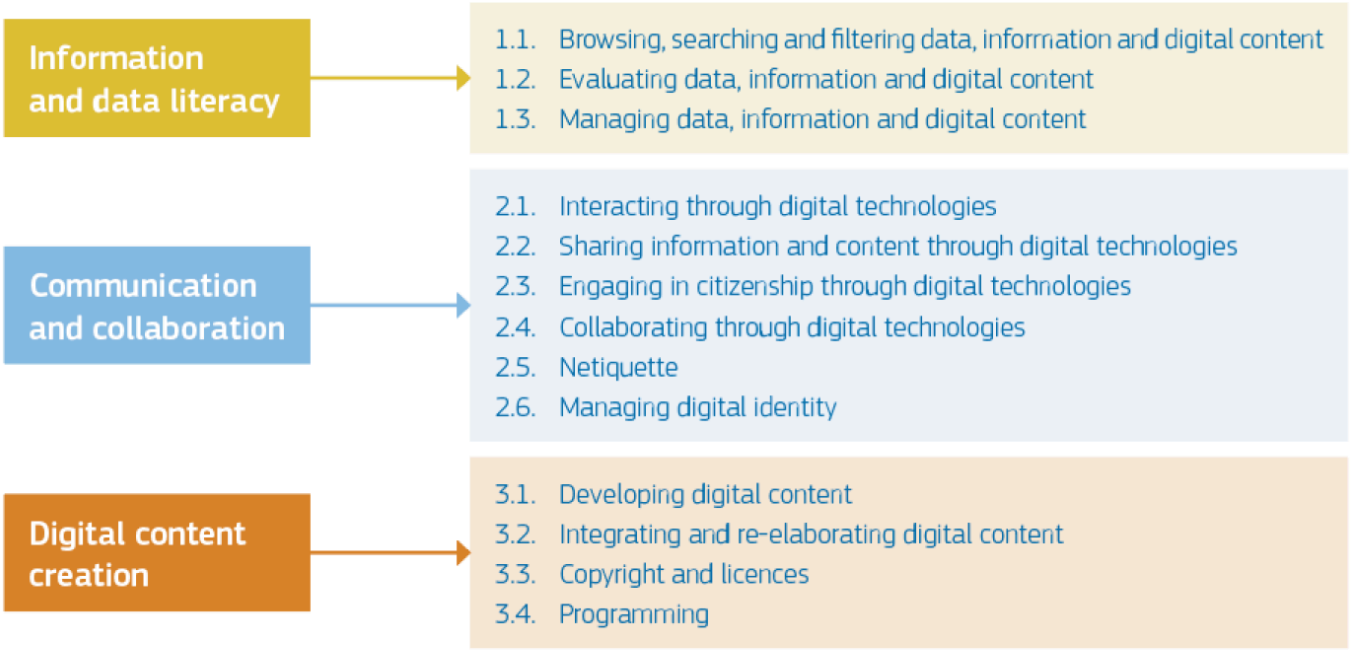
DigComp 2.2: The Digital Competence Framework for Citizens

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. 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 (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 to date is DigComp 2.2, the digital competence framework for citizens (Vuorikari et al., 2022). It is 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 level 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).

Assessment and 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 assessment and 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 (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 assessment and validation of learning outcomes. However, we also intend to include 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 recognise the value of other relevant frameworks, such as the UNESCO (2021) framework for media and information literacy.

Methodology

Drawing on qualitative social research (Given, 2008) and addressing the digital inclusion of persons with learning difficulties as a social issue (Bloor, 2011), the following research questions guided the data collection and analysis process to gain an understanding of the current state of digital inclusion of persons with learning difficulties in relation to the EU DigComp framework, specifically in relation to proficiency levels 1 and 2. The findings are presented in six reports (for Austria, Germany, Greece, Portugal, Spain, and at a pan-European level).

- 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?

- What are the challenges and gaps regarding the assessment and validation of digital competences at levels 1 and 2 of the DigComp framework for persons with learning difficulties?

- To what extent are digital competences currently assessed and validated with persons with learning difficulties?

We conducted web searches for information on relevant bottom-up initiatives for persons with learning difficulties (project websites, evaluation reports and the like) based on relevant keywords, screened the content with regard to the promotion, assessment and validation of basic digital competences, and documented these materials (Prior, 2011, p. 95).

We identified key informants (Fetterman, 2008) as possible respondents with first-hand knowledge of 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 an online questionnaire using Google Forms and the survey data was processed anonymously.

As the data was collected mainly through narrative responses to open-ended questions, the online survey is considered a qualitative method (Julien, 2008a, p. 846).

- The first questions collected information about the respondents' professional background.
- The next questions collected information about their professional expertise: How they promote the digital competences of persons with learning difficulties (or other vulnerable or marginalised groups) to contribute to digital inclusion; what elements of their project, initiative or work are key to promoting the digital inclusion of persons with support needs; what challenges they have encountered in their project, initiative or work related to the assessment and/or validation of basic digital competences and how they have dealt with them; and finally, what further challenges do they see for the assessment and validation of basic digital skills for persons with learning difficulties (or other support needs).
- The following set of questions explored whether a standard or reference framework is being used to assess and/or validate basic digital competences in their project, initiative or work. And if so, which standard or reference framework is being used. This was followed by a question on whether they were familiar with DigComp, the European digital competence framework, and if so, what is the relevance of DigComp in their project, initiative or work. This was followed by a question on whether they use a national standard or reference framework for digital competences and if so, they were asked to provide the name of this national standard or reference framework and its relevance to their project, initiative or work.
- The last two questions explored respondents' expertise by asking what they thought was the potential of assessing and validating basic digital competences for persons with learning difficulties (or other support needs). And what they think could be helpful to further promote the assessment and validation of basic digital skills for people with learning difficulties (or other support needs).

In order to provide answers to the research questions, we analysed the responses using the qualitative method of content analysis (Julien, 2008b). The respondents' knowledge, experiences and thoughts are presented in this report to shed light on the status quo of the

assessment and validation processes of basic digital competences with regard to persons with learning difficulties.

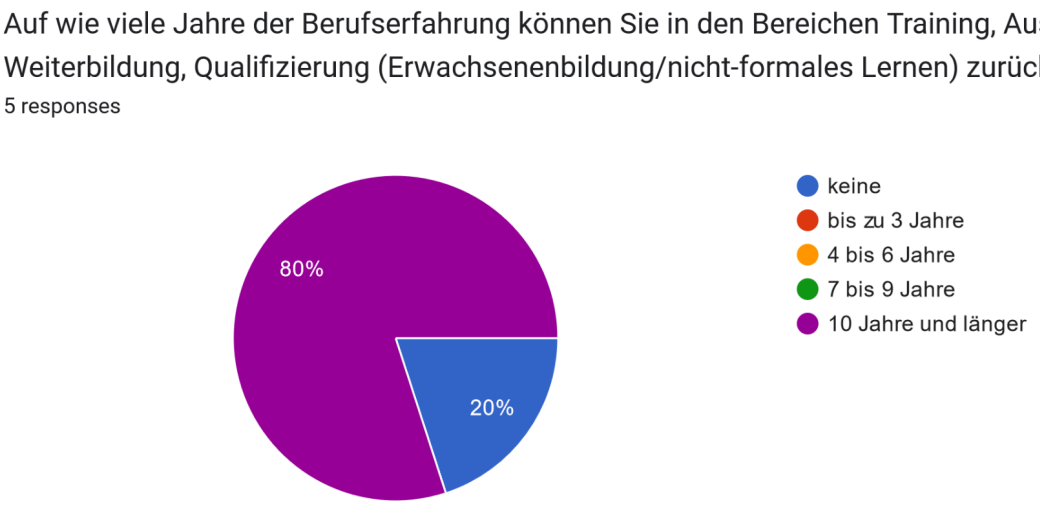
2 Background of the respondents

For the online survey we contacted twelve key informants with first-hand knowledge of the training and/or assessment and validation of basic digital competences, and five key informants answered the questionnaire.

In this section, we present the respondents' professional experience and expertise.

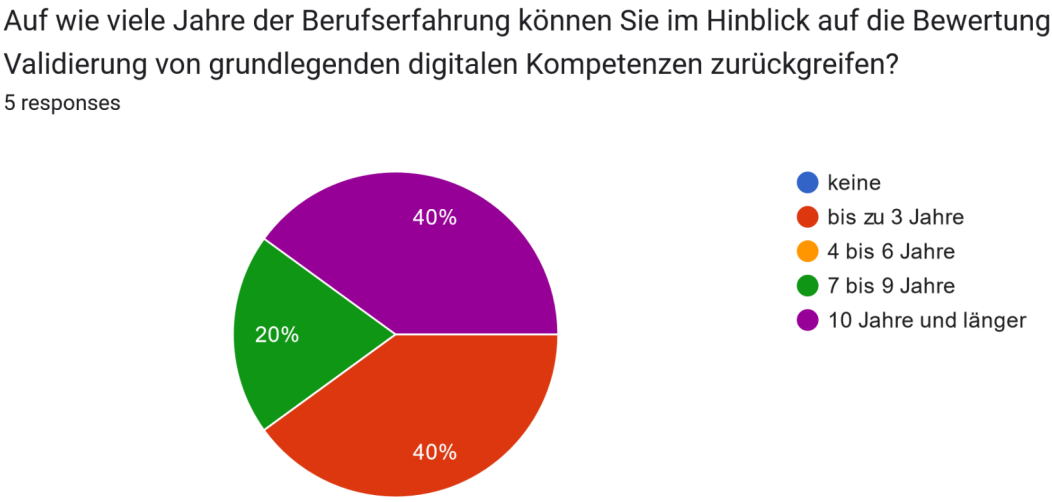
Years of professional experience of the respondents in the field of education, training, qualification, skills development (adult education/non-formal learning)

Four respondents have ten years or more of professional experience in the field of education, training, qualification, skills development (adult education/non-formal learning). One respondent indicated that they had no professional experience in this field.



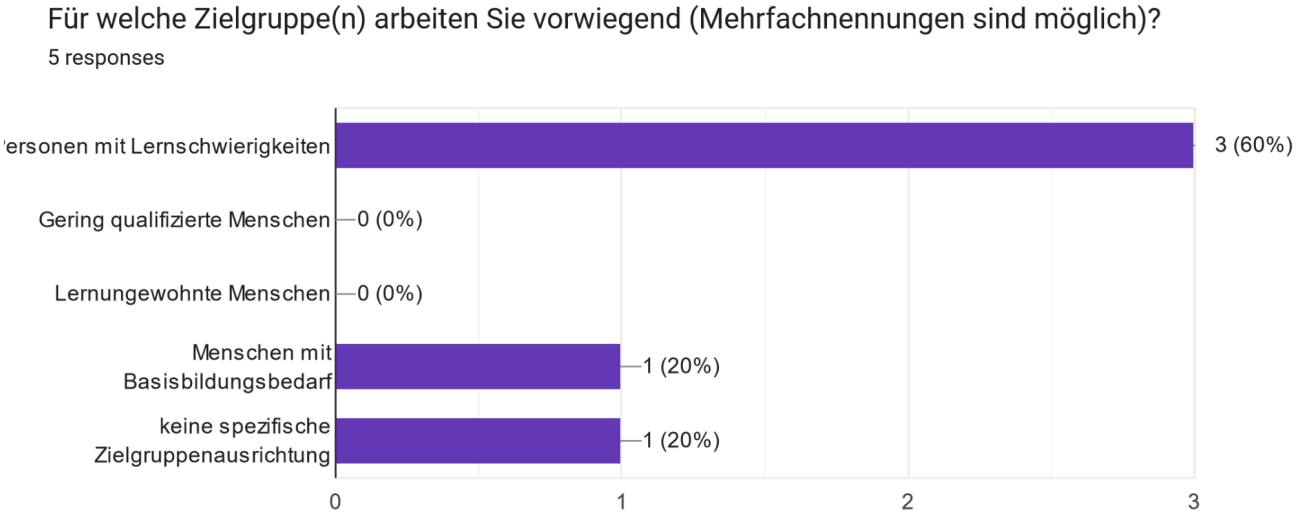
Years of professional experience of the respondents in assessing and/or validating basic digital competences

All five respondents have professional experience in assessing and/or validating digital competences. Two respondents have up to three years of professional experience, one respondent has seven to nine years of professional experience, and two respondents have 10 years or more of professional experience in assessing and/or validating digital competences.



Target group(s) that the respondents mainly work with (multiple answers were possible)

Three responses indicated that respondents work with persons with learning difficulties. One response indicated that its respondent works with persons with basic education needs, and one response stated that no specific group is targeted.



3 Status quo of the assessment and validation of digital competences at levels 1 and 2 with regard to persons with learning difficulties

As already mentioned in the introduction, this report is based on the results of an online survey and of a screening to explore the promotion, assessment and validation of basic digital competences at levels 1 and 2 with regard to persons with learning difficulties.

General findings

The main results of the screening, which included web searches for information on relevant policies on the one hand and bottom-up initiatives for persons with learning difficulties, and the identification and interviewing of key informants, are presented at the beginning of this chapter before the results of the survey.

The status quo of the assessment and validation of basic digital competences with regard to persons with learning difficulties has to be considered against the background of the 'Digital Skills Initiative for Austria' (Digitale Kompetenzoffensive). Austria has adopted the European digital skills strategy, and has proactively formulated an even more ambiguous goal: to make all citizens digitally fit by 2030 (OeAD, 2024).

To this end, the ‘Office for Digital Skills’ (Geschäftsstelle Digitale Kompetenzen) actively promotes the goal of digital competences for all by supporting the implementation of the Digital Skills Initiative and the Digital Skills Model, and by developing a concept for securing and certifying digital skills (Digital Austria, 2024). The Austrian DigComp framework, which is based on the European DigComp, serves as a reference standard (Nárosy et al., 2022).

Currently, the assessment and validation of digital competences within the DigComp AT framework is mainly carried out using online tools that can be used either for certification or for self-assessment. Such self-assessments are used to determine one's current level of competence and to search for training programmes to further develop competences in specific areas.

Dig-CERT 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 to ensure measurability and comparability (Dig-Cert, n.d.). The fee-based 60-minute multiple-choice test is taken online (BFI Wien, 2024). It assesses all six competence areas, and the pool of questions covers aspects of everyday life and the workplace, such as the use of smartphones, e-government procedures, job application procedures, politics and civil society, working in companies or at home, collaboration at work, and data security or organisation at work (Dig-Cert, n.d.).

In theory, the Austrian Dig-CERT can be used to demonstrate digital competences at proficiency levels 1 to 5 for both personal and professional use. However, despite efforts to adapt the sections assessing proficiency levels 1 and 2 to the needs of persons with learning

difficulties, this assessment and validation tool is mainly suitable for certifying levels 3 to 5, which are required for professional compatibility (employability).

Based on the screening, a number of Austrian initiatives were identified that provide training and/or assessment or validation of basic digital competences for persons with learning difficulties and other disadvantaged groups were identified. Two of these bottom-up initiatives offer online solutions to assess basic digital competences. Neither was developed specifically for persons with learning difficulties, but persons with learning difficulties may be part of the target groups of these initiatives.

The 'digital toolbox' (Digitale Werkzeugkiste) is an online platform that is accessible free of charge which provides four online learning modules (Getting started in the digital world / Internet and emails / Digital security /Finding a job digitally) and a validation tool for basic digital skills. Find out more (in German only): https://werkzeugkiste.arbeitplus.at/

The DiWi-Pass project focuses on the development, assessment and validation of basic digital competences based on DigComp 2.2 AT (JKU, n.d.). An online platform provides materials for targeted digital training on the one hand and certifies digital competences on the other. The DiWi-Pass offers three tools for self-assessment, online learning and for validation and certification, which are interlinked but can also be used independently. In the self-assessment phase, the current level of knowledge is determined, a selection of tailor-made learning materials is made available according to the results of the self-assessment, and in the validation phase, a certificate can be obtained through an examination. The programme is largely free of charge. Find out more (in German only): https://www.frauenstiftung.at/de/innovationen/diwi-pass.php

We conclude from the results of the web searches and key informant interviews that there are currently no online assessment and validation options in Austria that are specifically tailored to the target group of persons with learning difficulties.

Results of the survey

Following these general remarks based on the results of the screening, the results of the questionnaire on the status quo of the assessment and validation of digital competences at levels 1 and 2 for persons with learning difficulties are now presented.

Standard or reference framework to be used in the respondents' project, initiative or work

Three respondents indicated that they do not use a standard or reference framework to assess and/or validate basic digital competences in their project, initiative or work.

Two respondents indicated that they use a standard or reference framework. Both respondents referred to the national digital competence framework DigComp AT.

One respondent indicated that, in addition to the national digital competence framework, they also use the framework for digital competences within the Austrian Initiative for Adult Education (Initiative Erwachsenenbildung).

The Austrian Initiative for Adult Education is a cooperation between the Austrian Federal Ministry of Education and the nine Austrian provinces. Its aim is to enable adults who lack basic competences or never graduated from a lower secondary education to continue their basic education or to complete their compulsory education.The Adult Basic Education programme has a curriculum that defines basic digital competences in addition to literacy and numeracy (BMBWF, 2024). The area of digital competence in this curriculum includes the basics and orientation for everyday life, using computers and standard applications, dealing with information and data on the Internet, communication (e-mails, digital identity/security, emoticons), using online services and creating digital content (pp. 39-44).

However, the two respondents using a national standard or reference framework as mentioned above did not elaborate on the relevance of this standard or reference framework for their project, initiative or work.

Familiarity of respondents with the European Digital Competence Framework (EU DigComp)

Three respondents indicated that they were familiar with the European digital competence framework, the EU DigComp. These respondents explained that the EU DigComp is relevant for the national version of the digital competence framework, the DigComp AT; that they use the EU DigComp as a basis for conceptualising courses; and that they understand the EU DigComp as the overarching framework for the area of digital competences within the national Adult Basic Education programme and its curriculum for the digital competences.

Potential of assessment and validation of basic digital competences for persons with learning difficulties (or with other support needs)

Based on their expertise and experience, all five respondents believe that the assessment and validation of digital basic competences for people with learning difficulties (or with other support needs) has considerable potential and identified different aspects. These aspects are: enabling or supporting social inclusion; ensuring access to the full range of digital opportunities and digital participation; and contributing to personal and professional development.

4 Challenges and gaps regarding the assessment and validation of digital competences at levels 1 and 2 with regard to persons with learning difficulties

As already mentioned in the introduction, this report is based on the results of an online survey and of a screening to explore the promotion, assessment and validation of basic digital competences at levels 1 and 2 with regard to persons with learning difficulties.

General findings

The main results of the screening, which included web searches for information on relevant policies on the one hand and bottom-up initiatives for persons with learning difficulties, and the identification and interviewing of key informants, are presented at the beginning of this chapter before the results of the survey.

Assessment should be an integral part of supportive training programmes. Online tools for (self-)assessment and certification usually do not meet the needs of persons with learning difficulties. These online tools often are too high-threshold for persons with learning difficulties and not fully accessible for a number of reasons:

Perhaps the most fundamental barrier is the need to know how to turn on a device, access the internet, open a website and navigate the website. Proficiency level 1 is characterised by definition that the learning provision includes a high level of support. This means that there is a necessity that trainers or tutors are available during online self-study phases or online assessment to provide appropriate support.

Even if the language is easy-to-understand, language challenges remain for persons with learning difficulties, e.g. technical terms for which a glossary would be needed. Assessments that randomly mix basic level questions with higher level questions lead to frustration among participants, who may abandon the test before reaching a question that is relevant to their proficiency level. Online tests that require participants to register and pay a fee, take place at a fixed time and date for a fixed duration, and require the infrastructure to go online with a computer or laptop with a webcam are barriers for persons with learning difficulties. Handheld devices are widely available for persons with learning difficulties, but access to more complex hardware such as laptops or computers is more difficult.

Validation in itself is a challenging process. This is even more true for the validation of basic digital competences for persons with learning difficulties. In order to be of high quality, especially with regard to disadvantaged learners, validation needs to be tailored to the specific needs of the target group and to empower them. Ideally, it is embedded in the learning process.

For the reasons set out here, the assessment and validation process places high demands on the staff who provide support to persons with learning difficulties or facilitate learning provision for the promotion of basic digital competences for persons with learning difficulties.

Practitioners working with persons with learning difficulties (or persons with other support needs) often lack digital skills themselves. In order to create inclusive learning environments and to support persons with learning difficulties to take advantage of digitalisation in their everyday lives or work contexts, and to assess and validate learning processes and outcomes, practitioners may need to further develop their own digital competences.

On the one hand, practitioners need pedagogical support because it is crucial to find digital applications and tools that directly benefit the lives of persons with learning difficulties by integrating digital applications and tools into existing processes or programmes, or providing information in easy-to-understand language, in order to lower the threshold for using digital technologies and increase uptake.

On the other hand, practitioners supporting persons with learning difficulties need pedagogical support to further develop their competences to use assessment and validation of learning (prior and in situ) as an empowering practice, e.g. recognising existing competences and discussing possible learning pathways based on learning progress of learners.

Results of the survey

Following these general remarks based on the results of the screening, the results of the questionnaire regarding the challenges and gaps in the assessment and validation of digital competences at levels 1 and 2 for persons with learning difficulties are now presented.

Challenges in the assessment and validation of basic digital competences

All respondents indicated that they had encountered challenges related to the assessment and/or validation of basic digital competences in their project, initiative or work and explained how they had dealt with them, as summarised below:

- Developing tasks with appropriate relevance for the learners and providing tailored courses: This challenge highlights the difficulty of creating tasks or assessments that are relevant and engaging for learners, and underlines the importance of considering essential digital competencies and ensuring that tasks are relevant to learners' experiences and backgrounds.
- Lack of accessibility: This underlines the need to ensure access to necessary technical equipment and the importance of designing digital tasks and assessments in a way that is accessible to persons with disabilities or other accessibility needs.
- Physical disabilities and learning difficulties require assistive tools: This highlights the challenge posed by physical disabilities or learning difficulties among participants,

requiring the provision of appropriate assistive tools and accommodations to ensure equal access and participation.
- Heterogeneous levels of prior learning: This highlights the challenge of different levels of prior learning among participants.
- Constant updating of content: This underlines the need for continuous updating of content to accommodate the diversity of learners and to keep pace with evolving digital technologies.

Further challenges in the assessment and validation of basic digital competences

Responses to the question of what other challenges respondents saw for the assessment and validation of basic digital competences for persons with learning difficulties (or with other support needs) suggest that the challenges described above need to be understood as an ongoing effort rather than something that can be solved once and for all. Responses highlighted the heterogeneous levels of prior learning and the wide range of digital experiences of learners, reiterated the issue of ensuring access to all digital opportunities, and emphasised the need to tailor content to individual learning goals and needs. However, another important challenge was identified and added to the key challenges:

- Development or use of appropriate, accessible language: This highlights the challenge of assessing and validating basic digital knowledge, skills and competences that is related to literacy, which can be a challenge for persons with learning difficulties.

Promoting the assessment and validation of basic digital competences

In order to further promote the assessment and validation of basic digital competences for persons with learning difficulties (or with other support needs), respondents made the following key recommendations:

- Process-oriented approaches that facilitate and further promote learning: By focusing on the process of learning rather than just the outcome, participants can engage in a supportive and inclusive learning environment that fosters personal growth and learning progress.
- Harmonised standards that can be used as a reference point: These standards provide clarity and consistency for practitioners and can ensure equitable access for learners.
- Cost-free and accessible course provision, tailored to the needs of each individual learner: Cost-free and accessible courses are crucial to promoting inclusive adult basic education.
- Collaboration on course provision: Pooling resources and expertise could support this effort to assess and validate basic digital competences for persons with learning difficulties (or with other support needs).

5 Extent of the assessment and validation of digital competences at levels 1 and 2 with regard to persons with learning difficulties

As already mentioned in the introduction, this report is based on the results of an online survey and of a screening to explore the promotion, assessment and validation of basic digital competences at levels 1 and 2 with regard to persons with learning difficulties.

General findings

The main results of the screening, which included web searches for information on relevant policies on the one hand and bottom-up initiatives for persons with learning difficulties, and the identification and interviewing of key informants, are presented at the beginning of this chapter before the results of the survey.

The screening results showed that the relevance of digital (basic) competences for persons with learning difficulties is often doubted, which leads to this target group being neglected when it comes to providing either training offers specifically tailored to their needs or accessible assessment and validation tools.

Capacity building initiatives such as the 'Digital Skills for All' pilot project and the 'Digital Everywhere' programme, which provide cost-free workshops for digital beginners, are short one-time workshops focussing on specific topics and/or specific target groups which also include persons with learning difficulties to a certain extent. However, these offers do not include the certification of acquired competences.

Promoting the employability is one of the main motivations for assessing and validating digital competences. Validation entails high costs, not only in terms of staff time for personnel responsible for assessment and validation procedures, but also in terms of appropriate tools, materials, infrastructure, etc. This leads to cost-benefit considerations and the question of whether validation should be offered only in the area of vocational education and training leading to formal qualifications.

Since the labour market relevance of (digital) competences only starts at level 3, analogous to the mapping of formal qualifications to the NQF, there is little political will to offer assessment and validation procedures specifically for persons with learning difficulties.

Results of the survey

Following these general remarks based on the results of the screening, the results of the questionnaire regarding the extent of the assessment and validation of digital competences at levels 1 and 2 for persons with learning difficulties are now presented.

Fostering digital inclusion for persons with learning difficulties or other vulnerable or marginalised groups

Respondents use a range of digital inclusion strategies to promote basic digital competences for persons with learning difficulties or other vulnerable or marginalised groups:

- Involvement in development projects and research projects
- Providing tailored courses and conceptualising new training programmes, such as in-house training in organisations
- Providing training for practitioners (train-the-trainer)

Key elements for digital inclusion in the respondents' project, initiative or works

Respondents identified the following elements as key to promoting the digital inclusion of persons with support needs in their projects, initiatives, or work:

- Providing easy access to training programmes and offering in-house training in organisations
- Developing programmes specifically for participants with high and very high support tailored to their needs
- Incorporate a wide range of digital media into training programmes
- Adopting a validation approach that prioritises learners and their individual progression, thereby strengthening participation in the labour market and lifelong learning
- And again, providing training for practitioners (train-the-trainer) as a key component in promoting digital inclusion for persons with support needs.

6 Conclusions

Austria has adopted the European digital skills strategy, demonstrating the country's proactive stance on digitalisation. With a clear roadmap until 2026, Austria aims to ensure that all citizens have basic digital skills by 2030. The inventory on the assessment and validation of basic digital competences shows that the current situation is not ideal for the digital inclusion of persons with learning difficulties.

Status quo of the assessment and validation of digital competences at levels 1 and 2 with regard to persons with learning difficulties

Austrian initiatives provide online resources for digital training and assessment, though not explicitly tailored for persons with learning difficulties and especially not considering learning requirements at proficiency levels 1 and 2, thus falling short in addressing the learning needs of persons with learning difficulties. To the best of our knowledge, there are currently no assessment and validation options in Austria that are specifically tailored to the target group of persons with learning difficulties.

With regard to the results of the survey, all five respondents recognised the significant potential of assessing and validating basic digital competences for persons with learning difficulties or those with other support needs. They identified various benefits, including facilitating social inclusion, ensuring access to digital opportunities, and contributing to personal and professional development. Respondents to the survey highlighted the importance of standard or reference frameworks for assessing and validating basic digital competences. In terms of standard or reference frameworks, while three respondents indicated to not use any framework, two respondents indicated to rely on the national digital competence framework, the DigComp AT, and one respondent additionally indicated to utilise the framework for digital competences within the national Adult Basic Education programme.

Overall, these results shed light on the importance of utilising standardised frameworks, understanding their relevance for the promotion and the assessment of basic digital competences, and recognising the potential of digital competence assessment and validation for persons with learning difficulties and other vulnerable groups in society.

Challenges and gaps regarding the assessment and validation of digital competences at levels 1 and 2 with regard to persons with learning difficulties

Assessment is crucial within supportive training programmes, yet online tools often fail to meet the needs of persons with learning difficulties. These online tools are frequently inaccessible due to barriers such as technical complexity, language challenges, and registration/payment requirements. Furthermore, validation of basic digital competences for persons with learning difficulties is particularly challenging, requiring tailored approaches embedded within the learning process.

This places significant demands on staff supporting persons with learning difficulties, who may themselves lack digital skills. In order to create inclusive environments and empower persons with learning difficulties, practitioners need to develop their own digital competences and receive pedagogical support, focusing on finding accessible digital tools, integrating them into programmes, providing information in easy-to-understand language, and using assessment and validation as empowering practices to recognise existing competences and discuss learning pathways.

Respondents to the survey highlighted several challenges encountered in assessing and validating basic digital competences for persons with learning difficulties or persons with other support needs. These challenges encompass the following:

- It is essential to develop tasks with appropriate relevance for the learners and provide tailored courses that are engaging for learners. This emphasises the importance of considering essential basic digital competencies and ensuring that tasks align with learners' experiences and backgrounds.
- There is a lack of accessibility highlighting the need to ensure access to necessary technical equipment and design digital tasks and assessments in an accessible manner for persons with learning difficulties or other accessibility needs.
- Physical disabilities and learning difficulties among participants require the provision of appropriate assistive tools and call for accommodations to ensure equal access and participation.
- It is essential to take into account the heterogeneity of participants' prior learning and to meet the pedagogical challenge of addressing these both in learning provision and in assessment and validation procedures.
- There is a necessity for continuous updating of content to accommodate the diversity of learners and keep pace with evolving digital technologies.

Respondents suggested that these challenges need to be understood as an ongoing effort rather than something that can be solved once and for all. In addition to the challenges mentioned above, respondents identified another key challenge:

- The development or use of appropriate, accessible language is key for the assessment and validation of basic digital knowledge, skills and competences, as it relates to literacy, which can be a challenge for persons with learning difficulties.

In order to further promote the assessment and validation of basic digital competences for persons with learning difficulties, respondents to the survey made the following key recommendations:

- Focusing on the learning process, rather than just the outcome, helps to create a supportive and inclusive learning environment that encourages personal growth and learning progression.

- Harmonising standards can serve as a reference point, providing clarity and consistency for practitioners and ensuring equitable access for learners.
- Providing cost-free and accessible courses tailored to the needs of individual learners helps to promote inclusive adult basic education.
- Pooling resources and expertise through collaboration helps to support efforts to assess and validate basic digital competences for persons with learning difficulties or those with other support needs.

Extent of the assessment and validation of digital competences at levels 1 and 2 with regard to persons with learning difficulties

The screening results revealed a widespread doubt regarding the relevance of digital (basic) competences for persons with learning difficulties, resulting in neglect of this group in tailored training and accessible assessment and validation tools. Although national capacity building initiatives like the 'Digital Skills for All' pilot project and 'Digital Everywhere' programme include persons with learning difficulties to a certain extent, these offers do not include certification options.

Employability is a primary motivation for assessment and validation of digital competences, but the costs involved raise questions about offering validation exclusively in vocational education and training leading to formal qualifications. The findings suggest that the political reluctance to offer assessment and validation of basic digital competences for persons with learning difficulties may stem from the perception, with regard to the Austrian NQF, that labour market relevance only begins at level 3.

Respondents employ various strategies for fostering digital inclusion and providing basic digital competences for persons with learning difficulties or those with support needs,

- including involvement in development and research projects,
- provision of tailored courses and new training programmes (such as in-house training in organisations),
- and provision of training for practitioners (train-the-trainer).

In their projects, initiatives, or work, respondents to the survey highlighted the following key elements for promoting digital inclusion among persons with support needs:

- Facilitating easy access to training programs and providing in-house training within organisations
- Designing programmes tailored to the needs of participants requiring high or very high support
- Integrating a diverse range of digital media into training programmes
- Implementing a validation approach that prioritises learners and their individual progression, fostering participation in the labour market and lifelong learning

- Offering training for practitioners (train-the-trainer) as a crucial component in promoting digital inclusion for persons with support needs.

In conclusion, while Austria has demonstrated a proactive commitment to digitalisation through the adoption of the European digital skills strategy and a clear roadmap for digital inclusion, there remains a pressing need to address the gaps not only in the promotion of basic digital competences for persons with learning difficulties, but also in making use of assessment and validation as an empowering practice. This requires tailored approaches, inclusive learning environments, and ongoing collaboration to ensure equitable access and participation in the digital age.

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