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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

**Country Report
Germany**



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Index

1. Introduction	4
2. Background of the respondents	10
3. Status quo of the assessment and validation of digital competences at levels 1 and 2 with regard to persons with learning difficulties	12
4. Challenges and gaps regarding the assessment and validation of digital competences at levels 1 and 2 with regard to persons with learning difficulties	15
5. Extent of the assessment and validation of digital competences at levels 1 and 2 with regard to persons with learning difficulties	16
6. Conclusions	18
7. References	20

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.

One step to reach these aims is to examine the current state of digital inclusion of persons with learning difficulties in relation to the DigComp framework, specifically in relation to proficiency levels 1 and 2. In six reports (for Austria, Germany, Greece, Portugal, and Spain, and the pan-European level) the extent to which 'digital skills for all' with regard to persons with learning difficulties has already been achieved is explored.

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.

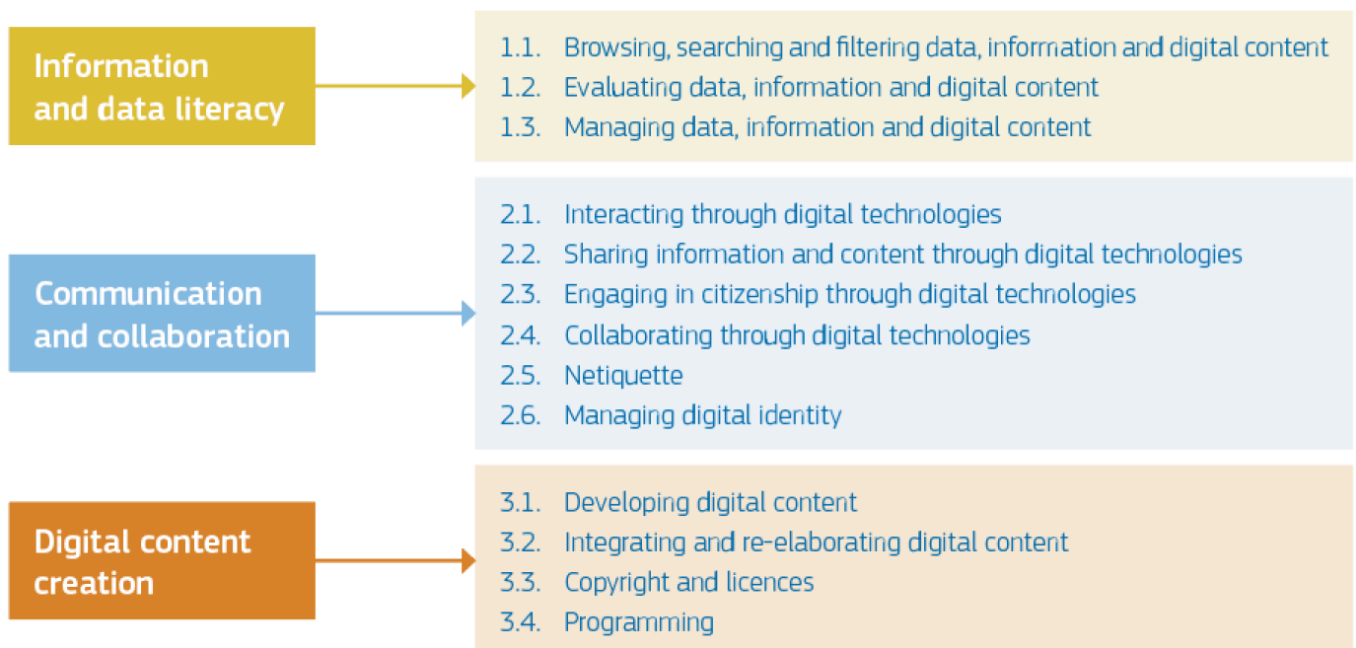
DigComp 2.2: The Digital Competence Framework for Citizens

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:	<ul style="list-style-type: none"> • choose simple digital tools and technologies for collaborative processes.
	2	At basic level and with autonomy and appropriate guidance where needed, I can:	<ul style="list-style-type: none"> • 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



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

2 Background of the respondents

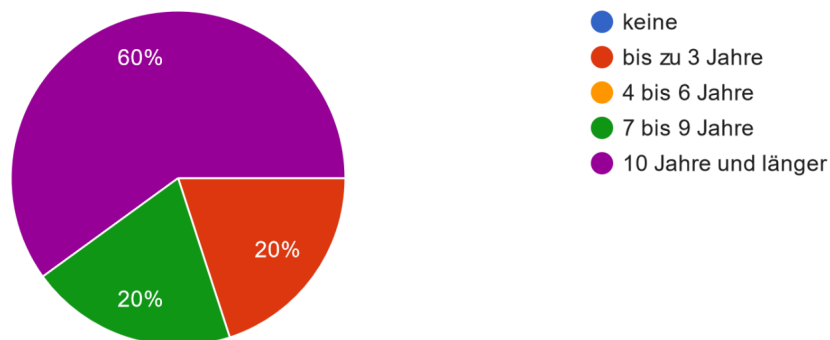
A total of 20 individuals employed in vocational training at various educational institutions supporting persons with learning difficulties were contacted. A total of five individuals completed the questionnaire. As the number of questionnaire responses is relatively small, the results are not representative. These results merely indicate a trend.

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

The respondents have accumulated considerable experience in the field of education, training, qualification, and skills development (adult education/non-formal learning) over an extended period. Three of the respondents have accumulated over 10 years of professional experience in adult education. One respondent indicated that he had between seven and nine years of professional experience with the target group. One respondent indicated that he had been engaged in the field for a period of three years.

Auf wie viele Jahre der Berufserfahrung können Sie in den Bereichen Training, Ausbildung, Weiterbildung, Qualifizierung (Erwachsenenbildung/nicht-formales Lernen) zurückgreifen?

5 responses

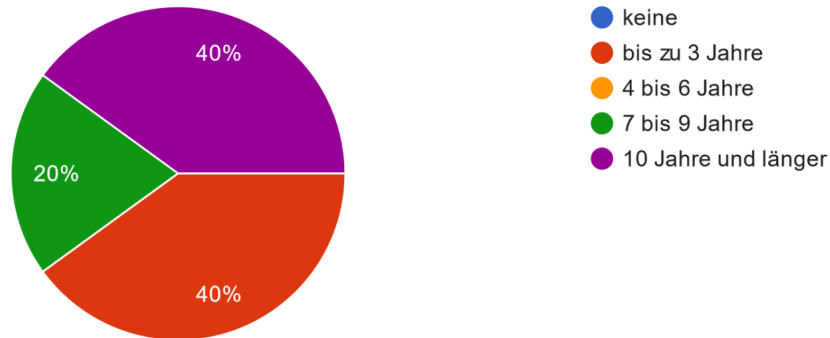


Years of professional experience of the respondents in assessing and/or validating basic digital competences

In the course of this, the survey revealed that the people working in the field of adult education have had experience in the assessment and/or validation of basic digital skills since the beginning of their work. Two people have more than 10 years of experience, two people have a maximum of three years. One person has professional experience in the assessment and/or validation of basic digital skills for 7-9 years.

Auf wie viele Jahre der Berufserfahrung können Sie im Hinblick auf die Bewertung und/oder Validierung von grundlegenden digitalen Kompetenzen zurückgreifen?

5 responses

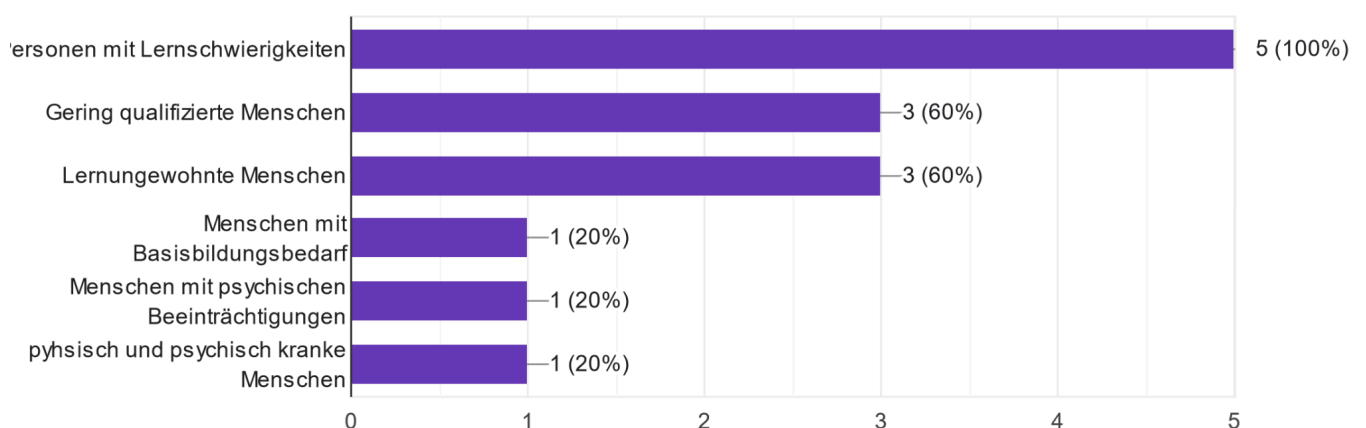


Target group(s) that the respondents mainly work with (multiple answers were possible)

All key informants work with persons with learning difficulties. Three respondents work with people with low qualifications and three respondents work with people who are unaccustomed to learning. Individuals with basic educational needs, people with mental disabilities and people with physical and mental illnesses were also mentioned in the survey.

Für welche Zielgruppe(n) arbeiten Sie vorwiegend (Mehrfachnennungen sind möglich)?

5 responses



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, 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 in Germany, especially with regard to persons with learning difficulties.

General findings

Germany has implemented a 'Digital Strategy' (Digitalstrategie) which, as an umbrella strategy, sets out the overarching framework for digital policy in Germany. The aim of this strategy is to improve the framework conditions and contribute to ensuring that the digital transformation can be organised in a gender-equitable and non-discriminatory manner in the interests of a sustainable, diverse, inclusive and democratic society (pp. 4-5). The digital strategy will also promote a 'National Education Platform' (Nationale Bildungsplattform - NBP) (p. 14) and conduct regular monitoring to identify and improve digital literacy. The results of the monitoring, combined with research and practical development, should be used to develop targeted measures for groups at increased risk of being left behind digitally (Digital Strategy, 2023, p. 15-16). There is no reference to the EU DigComp strategy in the Digital Strategy for Germany.

The 'Digital Germany | Monitoring the Digital Skills of the Population' (Digitales Deutschland | Monitoring zur Digitalkompetenz der Bevölkerung) project was launched to achieve the goals set out in the Digital Strategy. Digital Germany collects and analyses data on the media and digital skills needed by the population to live confidently in the face of digital change. The aim of the project is to create a basis for promoting the skills of the population as a whole in the face of digitalisation. Digital Deutschland compiles studies and specialist literature in a database and develops further empirical studies and expert reports (Digital Deutschland, n.d.).

In the publication of the joint project Digital Germany 'The Compass: Artificial Intelligence and Competence 2023 - Attitudes, Behaviour and Competence Development in the Context of AI' (Der Kompass: Künstliche Intelligenz und Kompetenz 2023 – Einstellungen, Handeln und Kompetenzentwicklung im Kontext von KI), which supports the digital policy of the Federal Government and forms the basis for good and holistic competence development, competence dimensions are identified (Cousseran et. al., 2023, p. 16), which are structured as follows:

- Instrumental skills dimension: This includes the operation of digital media and systems.
- Cognitive dimension: This includes cognitive engagement with digital media and systems, such as media knowledge and awareness, and visual literacy.
- Affective dimension: This emphasises the management of emotions that arise when using media (e.g. empathic behaviour).

- Creative dimension: This emphasises self-determined, independent and creative use of media.
- Social dimension: This includes the skills and abilities individuals need for collaboration, participation and digital communication.
- Critical-reflective dimension: This includes skills that enable people to view and evaluate media critically, both in relation to society and to their own lives.

The dimensions mentioned are interrelated, build on each other and sometimes overlap. They serve to provide an overarching view of the abilities, skills and knowledge formulated in the different competence concepts. However, no reference to the EU DigComp framework for digital competences or the German qualifications framework can be identified.

In terms of self-assessment of digital skills, we identified a number of companies that offer online digital self-assessment and assessment tests as part of the screening process. These are mainly used in the context of vocational aptitude diagnostics or other HR issues and are less suitable for persons with learning difficulties without support. Nevertheless, they are mentioned here as a way of assessing digital skills.

The DigCompCheck (DCC) provided by *gepedu* measures digital competence in a very detailed and valid way 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. The test procedure can be used in self-assessment, in personnel selection or in personnel development, for example to sensitise employees to the topic or to identify training needs. Further information (in German): <https://www.gepedu.de/digitale-kompetenz#framework>

The Digital Competence Check (DCC-SAT) of the CJD 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. More information (in German): <https://ichdigital.cjd.de/online-testen>

Results of the survey

With regard to our questions on the assessment and validation of digital competences, according to the key informants there is little orientation towards national standards or reference frameworks. Only one person of the four respondents stated that they use a standard as a guide. However, they did not specify which standard they use.

The lack of knowledge about EU DigComp is also reflected in the responses to the online survey. When asked whether our respondents are familiar with the EU DigComp framework for digital skills, all of them answered with 'No'. None of our key informants refer to a national standard or a reference framework for digital competences.

To the question "Based on your expertise and experience, what is the potential of assessing and validating basic digital competences for persons with learning difficulties (or other support needs)?" one key informant responded that the target group can prepare even better for the job market with digital skills and proof of these skills and that they are also better received by potential employers. A similar response was that certification of a certain level of expertise could lead to better placement in the world of work.

Another response was that there is great potential and that it "must be well integrated".

In addition, one respondent stated that teaching digital skills to our target group encourages them to be well positioned in everyday life, as more and more digitalization is taking place here too, such as the use of online portals, applications to the employment agency, etc.

Another person stated that the participants are very fit on their mobile devices; this should be used and expanded.

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

Our survey identified a number of gaps and challenges. The results are presented here.

When asked what challenges respondents have encountered in their project, initiative or work related to the assessment and/or validation of digital literacy and how they are dealing with them, the responses were as follows:

One key informant stated that the target group does not have sufficient technical equipment. "Trainees often don't have the necessary hardware; they usually have a smartphone." Not everyone has sufficient data volume either; there are also financial barriers to downloading paid apps and thus the refusal to use them. Another answer was that there are many reservations on the part of the trainers. This was also mentioned in report 2.1, that it is absolutely essential that employees working with persons with learning difficulties are trained and have a certain level of expertise. One key informant replied that it is difficult to make comparisons between participants as they all have an individual starting position. It is therefore more a subjective "assessment-feeling" than a fundamental validation.

There are a number of challenges in assessing and validating basic digital skills for people with learning difficulties or other support needs. Interviewees highlighted several aspects related to this issue, firstly emphasising that methods such as watching videos, talking and using worksheets help to make the learning content clearer and easier to understand. Another obstacle is the frequent lack of financial resources, which makes it difficult to implement appropriate programmes and training. There is also a need to overcome trainers' reluctance to create an open and supportive learning environment. A key issue is standardisation: how can digital literacy be assessed in a standardised way? Many of those key informants expressed uncertainty and admitted that they did not know what exactly to assess and how to do it. These challenges require careful consideration and innovative approaches to adequately assess and support the digital skills of people with special needs.

To further promote the assessment and validation of basic digital skills for people with learning difficulties or other support needs, several helpful approaches were suggested. One key aspect was to organise the learning process into short, manageable steps in order to be able to teach in detail. This would allow for more thorough and individualised support for learners. The development and provision of programmes and applications in easy-to-understand language was also seen as important. These should include step-by-step instructions to facilitate the learning process. At the same time, it is emphasised that access to hardware and the Internet should be guaranteed for everyone to enable digital participation. Another important point is the establishment of common standards for the assessment of digital literacy. This would allow for consistent and comparable assessment. Finally, the need for a clear plan and curriculum is

stressed, complemented by training in didactic methods for teachers. According to our key informants, these measures could help to improve the quality and effectiveness of digital education for people with special needs, and to adequately capture and promote their skills.

To summarise, it can be said that, according to our respondents and key informants, the assessment and validation of digital skills at levels 1 and 2, especially with regard to persons with learning difficulties or other vulnerable or marginalised groups, encounters various challenges and gaps:

- Lack of consideration of diversity: most existing assessment and validation tools for digital skills insufficiently take into account the diversity of needs and abilities of persons with learning difficulties or other marginalised groups.
- Accessibility of assessment and validation tools: Most digital assessment and validation tools are not designed to be accessible and therefore may not be accessible to people with certain types of disabilities, such as visual or motor impairments. This can lead to a bias in the results and affect the accuracy of the assessments.
- Lack of sensitivity to social and cultural differences: Assessment and validation tools currently do not sufficiently take into account the social and cultural differences of vulnerable or marginalised groups, which can lead to an unfair assessment of their digital skills.
- Lack of flexibility and adaptability: Existing assessment and validation tools are not flexible enough to meet the individual needs and learning styles of people with disabilities or other marginalised groups.

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

Based on the results of the screening and the respondents, it can be said that although there are a large number of programmes, projects and initiatives in Germany to promote digital competences among the civilian population, the comprehensive national strategy covering all areas of society and including the EU DigComp strategy still need to be expanded or are still being developed. Regarding the assessment and validation of digital skills a standardised process could help identify which digital skills can be assessed and how.

With reference to the question ‘How do you promote the digital competences of persons with learning difficulties (or other vulnerable or marginalised groups) to contribute to digital inclusion?’ our respondents answered as follows.

One respondent likes to work with tutorials as work material. For the next person, it is important to practise using common programs on the PC (Word, Excel) and to look at email

programs (sending attachments). Seminars are also held here on the subject of social media, particularly with regard to data protection. Online applications are also practised, as the employment agency would like to receive job applications online. Participants are also trained in researching and evaluating jobs on the internet.

One respondent stated that the trainee booklet is a good program to contribute to digital integration. The trainee booklet is the digital report booklet. Here, the rehab trainees can write and send their weekly reports on their smartphone.

One person replied that the target group is introduced to PC basics (Word, Excel, PowerPoint). The use of social media is addressed and work is carried out with the Digital Training Campus. This is a learning platform.

The survey also identified a number of elements that are critical to promoting the digital inclusion of people with support needs. One respondent highlighted the importance of having a wide range of materials to adequately support the target group. Another respondent stressed the importance of using didactic approaches specifically tailored to the needs of the target group. Preparing participants for their future careers was also mentioned, as was teaching everyday skills in using PCs and social media. It was also highlighted that the report booklet is available online. However, the use of the learning platform was viewed critically, as it had been implemented but had not yet been used in practice. Another comment pointed out that there is still a lot of room for improvement in this area and that there is currently a lack of structure and equipment.

6 Conclusions

It is becoming apparent that a few colleagues in vocational education need training and further education in order to be able to teach their target group digital skills in the best possible, safe and competent way. The extent to which assessment tools are used depends heavily on the measure and the target group (young people or adults).

It is also clear here that neither the national nor the EU strategy are known. It would be desirable to do more advertising here in order to get into the heads of the employees involved.

Another problem is that there is often a lack of financial resources for suitable hardware to enable high-quality work. Another criticism is that a learning platform is available, but is not being used or expanded.

In summary, the challenges identified in Report 2.1 have been revisited in this report.

- Mandatory barrier-free design of digital products and services
- Training and awareness-raising: Training and awareness-raising campaigns are important to raise awareness of the needs of persons with learning difficulties and to ensure that developers, designers and other professionals in the digital industry have the appropriate skills to develop accessible products.
- Access to technology and infrastructure: persons with learning difficulties need access to appropriate technology and infrastructure in order to use digital services. This can include the provision of special hardware or software as well as the adaptation of existing devices and systems to make them more accessible for people with disabilities. It is important to note that we are still struggling to connect to high-speed internet in many rural areas.
- Financial support: Governments and non-profit organisations can provide financial support to promote the development and implementation of accessible digital products and services. This can take the form of grants, funding programs or tax incentives.
- Partnerships and collaboration: It is important that governments, businesses, non-profit organisations and persons with learning difficulties work closely together to advance digital inclusion. Through partnerships, resources can be pooled and synergies created to achieve common goals.
- Monitoring and evaluation: It is important to continuously monitor and evaluate progress in the digital inclusion of persons with learning difficulties to ensure that the measures taken are effective and that adjustments can be made if necessary.



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The overall aim of these measures is to create a more accessible digital environment for people with disabilities and to ensure that technological progress benefits all members of society.

Germany is making an effort and seems to have many ideas, but there is currently little evidence of implementation of some of the goals. In particular, the focus on our target group is neglected. Although they are included in goals such as equality and equal opportunities for all, they are not specifically mentioned.

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