Increase
Digital
Competences
to Promote Inclusion

InDiCo - Increase Digital Competences to Promote Inclusion

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Status quo of the EU DigComp framework implementation

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Austria

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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.

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.

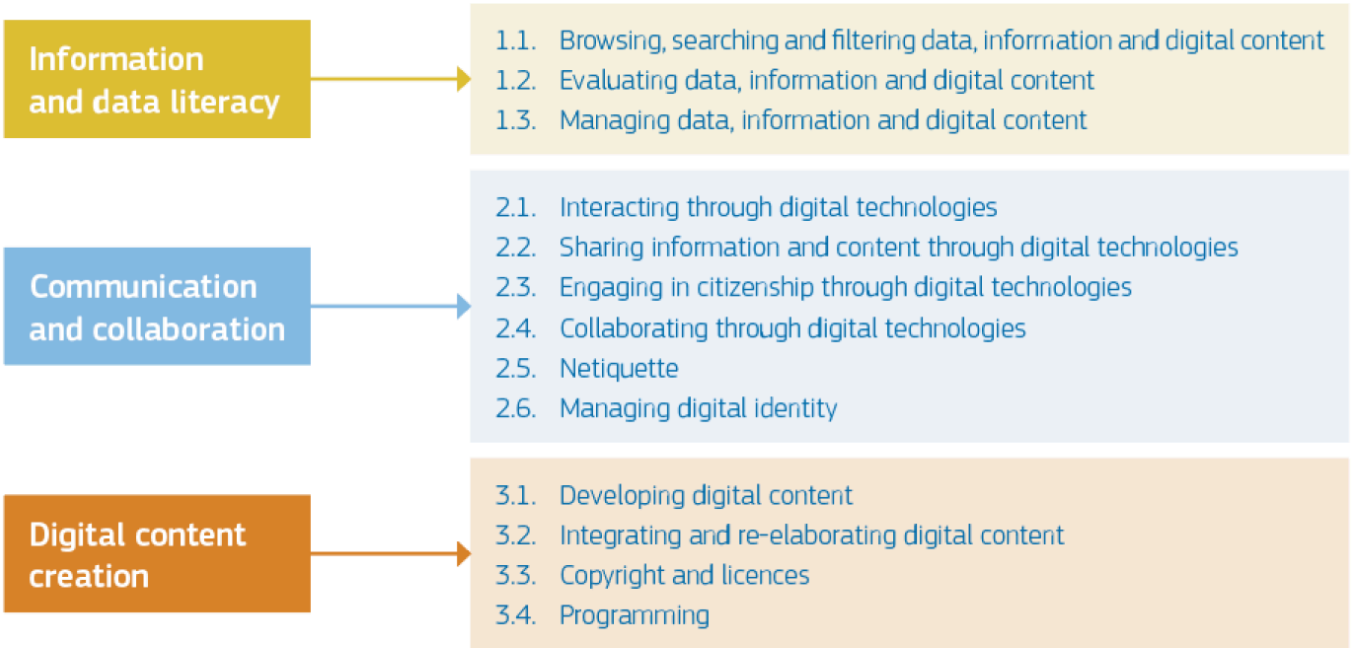
DigComp 2.2: The Digital Competence Framework for Citizens

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:	• **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).

- How is the EU DigComp strategy implemented? Does a national DigComp framework exist or is it being developed? How is the national framework linked to the National Qualifications Framework (NQF)? And: What is the current state at the pan-European level?

- Are there any gaps or challenges in the implementation of the DigComp strategy/framework at levels 1 and 2?

- What bottom-up initiatives are working towards the digital inclusion of persons with learning difficulties with a focus on promoting digital competences at levels 1 and 2?

The following data collection steps were taken:

- We conducted web searches for policy papers, reports, studies and information on policy-driven projects, as well as 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, and documented these materials (Prior, 2011, p. 95).

- We have used the following search terms, among others, and in various combinations: digital inclusion for all; digital competences; digital skills; digital literacy; digital initiatives for persons with learning difficulties; adult basic education; National Qualifications Framework; and validation of non-formal and informal learning;

- We surveyed the project's associated partners and identified key informants (Fetterman, 2008), in particular policy makers, digital strategy experts, service providers for persons with learning difficulties, and validation experts, through the web searches.

- Drawing on a question-based interview guide (Morgan & Guevara, 2008), we conducted interviews with selected key informants. Together we explored the effectiveness of (national) strategies for enhancing digital competencies, particularly focusing on initiatives for persons with learning difficulties, and delved into the challenges and (possible) key stakeholders to (further) promote digital inclusion, and explored issues of assessing and validating digital competencies for persons with learning difficulties and strategies to ensure their inclusion in digital environments.

For the data analysis process, we selected the most relevant documents in terms of understanding the current situation and included the recorded key informant interviews as the base material for analysis.

We followed the method of qualitative content analysis (Julien, 2008) and applied a basic form of interpretation, the "summary". The objective of such a "summary" is to "reduce the material in such a way that the essential contents remain, in order to create through abstraction a comprehensive overview of the base material which is nevertheless still an image of it" (Mayring, 2014, p. 64).

In order to provide answers to the research questions, we analysed the base material and identified the key messages that emerged from the documents and the key statements or comments that emerged from the interviews as the basis for this report to shed light on the status quo of the digital inclusion of persons with learning difficulties in relation to the EU DigComp framework, specifically in relation to proficiency levels 1 and 2.

2 Implementation of the EU DigComp strategy with regard to persons with learning difficulties

Austria has reaped the benefits of its digitalisation journey by establishing its direction early on, maintaining an unwavering strategy and adopting a proactive attitude to planning and coordination since the early 2000s (Digital Austria, 2024a). Currently, around 63% of 16-74 year olds in Austria have basic digital skills. The European Commission wants to increase this figure to 80% by 2030, while Austria has the ambitious goal of bringing all citizens up to this basic level by 2030. As part of the 'Digital Skills Initiative for Austria' (Digitale Kompetenzoffensive), the 'Office for Digital Skills' (Geschäftsstelle Digitale Kompetenzen) was set up at the 'Austrian Agency for Education and Internationalisation' (OeAD Agentur für Bildung und Internationalisierung), in October 2023 to actively promote the goal of digital skills for all. This initiative is supported by the Federal Ministry of Finance, the Federal Ministry of Labour and Economic Affairs, the Federal Ministry of Education, Science and Research, and the Federal Ministry of Arts, Culture, the Civil Service and Sport. The OeAD Office for Digital Skills assumes the central coordination function and provides operational support for the implementation of the Digital Skills Initiative (Digital Austria, 2024b).

The work programme of the office until 2026 includes the support of the implementation of the Digital Skills Initiative and the Digital Skills Model, the development of a concept for securing and certifying digital skills, the establishment of a Digital Skills Network involving various stakeholders and initiatives and the active participation in the European Commission's Digital Skills and Jobs Coalition (Digital Austria, 2024c).

DigComp 2.3 AT – the Austrian version of the EU DigComp framework

The current version of the Austrian DigComp framework, DigComp 2.3 AT, is the further development of the European and Austrian DigComp 2.2 reference framework. In 2018, the Austrian DigComp 2.2 AT model was created in two stages on behalf of the then 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, a practice-oriented further development and update took place as version DigComp 2.3 AT on behalf of the fit4internet association on the basis of over three years of practical and field work. DigComp 2.3 AT aims to outline the field of digital competences of citizens as general, complete and comprehensive as possible (Nárosy et al., 2022, pp. 7–8).

In addition to the five competence areas (as presented in the introduction) that are the same as in the EU DigComp framework, Austria has introduced a sixth area. To ensure consistency in numbering between the Austrian and the European model, the competence area "Basics, access and digital literacy" has been given the number 0 (p. 8).

Competence area 0 comprises the following competences:

- 0.1. Understanding concepts of digitalisation
- 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 develop appropriate judgement skills

In total, the competence areas comprise 27 competences (0.1 to 5.4.).

The need for the implementation of the competence area 0 was also reinforced by key informants in the interviews. They explained that this was seen as a relevant broadening of this framework towards raising awareness and promoting understanding of digital competences, also with regard to inclusive approaches.

The EU DigComp describes the competences on eight levels and thus correlates with the eight levels of the European Qualifications Framework (EQF). Therefore, the DigComp AT also correlates with the National Qualifications Framework (NQF) which refers to the EQF (Nárosy et al., 2022, p. 10). This standardisation, both the European (European Commission, 2018) and the corresponding Austrian, ensures transparency and comparability of digital competences.

Capacity building: From the 'Digital Skills for All' pilot project to the 'Digital everywhere' (Digital überall) initiative

In autumn 2023, the 'Digital Skills for All' pilot project was launched as an immediate measure of the 'Digital Skills Initiative for Austria' (Digitale Kompetenzoffensive). This pilot project was implemented nationwide with around 800 cost-free workshops by December 2023. The workshops were aimed at digital beginners, especially at hard-to-reach groups or learners. A total of around 8,500 participants were registered. Workshops in this pilot phase were offered by 36 (educational) organisations. Topics included digital education for senior citizens, e-government and (safe) use of digital media for parents and young people (Digital Austria, 2024c).

In addition to the many workshops offered during the pilot phase, a quality guideline for educational programmes in the area of basic digital competences was also presented (Aschemann, 2023). This quality guideline aims to support providers in designing the programme in such a way that learners are reached and that participants' motivation to learn is effectively increased (p. 4). Guiding principles are the learner centredness of provision and its alignment with the DigComp AT (p. 5).

The initiative of capacity building is being continued under the new name 'Digital Everywhere' (Digital überall), a nationwide programme offering cost-free workshops tailored for digital beginners, delivered by a variety of adult education organisations. These workshops provide

accessible training opportunities, designed to cater to individuals who may not currently engage with non-formal educational offerings. They aim to help those who may not yet have adequate self-learning practices to acquire the necessary digital skills for everyday life. The first phase of the initiative is planned to run from March to June 2024 and will include around 800 basic digital literacy workshops delivered by 54 learning providers. Tenders are currently being invited (May 2024) for the planning, organisation and delivery of around 3,700 basic digital skills workshops for adults. The workshops will cover five main topics: digital literacy for senior citizens, e-government, online safety, living with digitalisation, and artificial intelligence (OeAD, 2024).

There are plans to further strengthen the initiative by launching the 'Digital Everywhere PLUS' (Digital überall PLUS) initiative, by offering tailored workshops for those who want to further improve their digital competences, and by improving quality through training for trainers (Digital Austria, 2024b).

Digital skills workshops specifically dedicated to persons with learning difficulties

In the 'Digital Skills for All' pilot phase and the 'Digital Everywhere' initiative, 'atempo' offered workshops dedicated to the digital inclusion of persons with learning difficulties. 'atempo' is an association that has been advocating for people with disabilities, including persons with learning difficulties, for over 20 years, aiming for a world in which all people can work, live and reside equally (atempo, 2024a).

The workshops are supporting young people and adults with learning difficulties to get to grips with digital tools and devices and aim to contribute to more digital participation. The following topics are covered: Artificial Intelligence for all; Digital literacy for all; Our digital footprint; Guidance in the digital nursery; Digital literacy for the elderly; Internet safety for all (atempo, 2024b).

Certification of digital skills based on the DigComp AT

Dig-CERT is a standardised procedure for certifying general digital knowledge in everyday life and work. Experts from the organisation 'fit4internet' have defined skills that are considered essential in Austria in order to participate in the digital world of life and work. The DigComp AT is used as a reference model to ensure measurability and comparability. The 60-minute multiple-choice test, which is subject to a fee, is taken online (BFI Wien, 2024).

The Austrian Dig-CERT covers all six competence areas needed in everyday life and the world of work, as defined in the DigComp AT. 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. Competence levels 3 to 5 are required for professional compatibility, regardless of industry, function or individual educational background. However, the Dig-CERT can be used to demonstrate digital knowledge up to proficiency level 5 for both

personal and professional use. As it is based on a Europe-wide standardised reference framework, it is comparable across EU countries (Dig-Cert, n.d.).

Pilot project for assessing and validating digital competences of persons with learning difficulties

Chance B, a social service provider in Styria, offers social services for all phases of life to enable people with disadvantages to live at the centre of society (Chance B Gruppe, 2022). Based on Chance B's expertise in providing support in the areas of education and work, and in close cooperation with the University of Klagenfurt and another social service provider, Chance B has developed KomKom, a training curriculum an assessment and validation tool that is easily accessible and process-oriented and enables educationally disadvantaged people including persons with learning difficulties to obtain specific qualifications aligned with levels 1 and 2 of the National Qualifications Framework.

In 2022, a methodology to validate previously acquired digital competences at levels 1 and 2 according to this KomKom model was piloted. In the course of the pilot project initiated by ÖIBF, a non-profit research institute in the field of educational research and related disciplines as well as labour market and vocational research (ÖIBF, 2019), the structure of the KomKom framework was aligned with the structure of the DigComp 2.2 AT. 25 learning outcomes with 185 assessment criteria in the 6 competence areas were defined.

In order to assess and validate levels 1 and 2, a catalogue of competences was developed, as the distinction between the two levels of competence is determined by the degree of responsibility and autonomy, i.e. whether or how much guidance is required for candidates to carry out the activities described in the assessment criteria. These assessment criteria, originally provided by ÖIBF, were reviewed and complemented in a participatory approach by various Chance B practitioners (support staff for persons with learning difficulties, basic educators, an expert in easy-to-read language) as well as by persons with learning difficulties to ensure the focus on the basic digital skills that persons with learning difficulties need for digital participation in their daily lives. (Schmölz et al., 2022)

The results of this pilot project encouraged Chance B to continue working in the field of validation of the basic digital competences of persons with learning difficulties and to apply for the Erasmus+ Key Action 2 project InDiCo together with the University of Klagenfurt and five other European partner organisations.

Digital inclusion missing from the National Disability Action Plan

By ratifying the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) in 2008, Austria committed itself to protecting, promoting and ensuring the human rights of persons with disabilities, including the right to education (Article 24) (BMSGPK, 2022, p. 76).

The National Action Plan on Disability (NAP) is the disability strategy of the federal government for the implementation of the UNCRPD. It was drawn up with the involvement of experts from the nine Austrian provinces, and the Ministry of Social Affairs, which is responsible for the coordination of the NAP and for the coordination of the UNCRPD, also ensured the participation of civil society, particularly the involvement of representatives of persons with disabilities (BMSGPK, 2022, p. 4).

In a working group with representatives from member and partner organisations, other civil society organisations and experts from the field, the 'Austrian Disability Council' (ÖBR - Österreichischer Behindertenrat) formulated proposals for goals, specific policy measures and indicators (to measure progress) that should be included in the NAP 2022-2030 in order to ensure the participation of people with disabilities in the opportunities offered by digitalisation and AI, since these new technological developments offer many opportunities for people with disabilities to participate in society. The cross-cutting issue of digitalisation affects many areas of society, such as the world of work, the education and healthcare systems, transport, etc. Prior to the publication of the NAP 2022-2030, the ÖBR therefore emphasised the importance of including all people in this area and called for digital literacy to be promoted in Austria in general, as well as digital empowerment for people with disabilities (ÖBR, 2021a).

However, the objectives, measures and indicators the working group on digitalisation and KI mentioned in the document 'NAP Disability 2022-2030: Proposals of the Austrian Disability Council on the topic of digitalisation and AI' (NAP Behinderung 2022-2030: Vorschläge des Österreichischen Behindertenrats zum Thema Digitalisierung und KI), such as the promotion of organisations that provide cost-free training for people with disabilities and their social environment to learn digital skills (including social media) by the public sector, or the financing and implementation of a digital literacy campaign for people with disabilities, with the aim of ensuring that inclusive services from relevant providers are accessible across the board by 2025 (ÖBR, 2021b), have not been included in the NAP on Disability 2022-2030 (BMSGPK, 2022).

In the 2023 position paper, the ÖBR again calls for specific training courses to people with disabilities to improve their digital skills to be offered free of charge (ÖBR, 2023).

3 Gaps and challenges in the implementation at levels 1 and 2 with regard to persons with learning difficulties

The key informants interviewed emphasised that the increasing digitalisation makes life more difficult for persons with learning difficulties. As described in chapter 2, there are already some policies in place to promote digital competences for all. However, key informants pointed out a number of shortcomings that make it difficult to implement such initiatives specifically for persons with learning difficulties.

The need for access to digital devices

Handheld devices are widely available for persons with learning difficulties, but access to more complex hardware such as laptops or computers is more difficult. A study exploring the use of digital devices by persons with learning difficulties in social service providers (Kalcher & Kreinbucher-Bekerle, 2021, p. 1) found that persons with learning difficulties were much less likely to use digital devices than people without disabilities, and almost one in five persons with learning difficulties did not have a digital device, despite frequently expressing a desire to do so (p. 13).

The need to raise awareness of needs of persons with learning difficulties

According to the UNCRPD, appropriate learning opportunities should be available for all, but this is often not the case as providers do not consider persons with learning difficulties as a target group. The relevance of digital (basic) competences for persons with learning difficulties is often doubted, which leads to this target group being neglected, whereas assistive devices for persons with physical disabilities are nowadays relatively well developed. So, a major gap is therefore the lack of awareness of the persons with learning difficulties target group and the need to actively work towards their digital inclusion.

The need to consider persons with learning difficulties in national policies with regard to digitalisation

The digital inclusion of persons with learning difficulties is not explicitly mentioned as an objective of the ‘Digital Skills Initiative for Austria’ (Digitale Kompetenzoffensive), and vice versa the National Action Plan on Disability 2022-2030 does not contain objectives, measures and indicators regarding capacity building in terms of basic digital competences.

The need for financial resources for reaching out to persons with learning difficulties

The lack of awareness of the needs of persons with learning difficulties and of political support for persons with learning difficulties leads to gaps in financial resources. Austria's goal is for all citizens to have basic digital competences by 2030. Nationwide workshops (as presented in chapter 2) are a very important component of this ambitious goal. The pilot phase of the

workshop initiative ‘Digital skills for all’ has shown that senior citizens can be reached very well. Due to the short-term nature of the tender and the limited funding for the workshops themselves in the pilot phase, there was little incentive to design workshops for harder-to-reach target groups. These include persons with learning difficulties or citizens with other forms of disability, citizens who speak German as a second language and people with a low level of (formal) education. It is also questionable whether a one-time and short workshop is an appropriate format for people who may need repetition or or whose individual learning interests and capacity building need more attention.

The need for digital professionalisation of practitioners supporting 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.

A shift in mindset may also be required: away from the idea that adult educators or support staff need to know everything, towards an emphasis on professional facilitation of learning. Often resistance to promoting the digital inclusion of persons with learning difficulties is not only due to a lack of digital competences among practitioners, but also to a fear of change. It is therefore also important to reflect on and address individual reservations.

The need for pedagogical support for practitioners supporting persons with learning difficulties

Practitioners need pedagogical support because it is crucial to find digital applications and tools that directly benefit the lives of persons with learning difficulties. Learning for fun, out of curiosity or to solve specific problems are relevant drivers for learning, because in these cases learning actually makes a positive, tangible difference. It is therefore important to integrate digital applications and tools into existing processes or programmes, or to provide information in easy-to-understand language, in order to lower the threshold for using digital technologies and increase uptake.

In addition, 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.

The need for accessible assessment procedures for persons with learning difficulties

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. They often are too high-threshold for persons with learning difficulties and not fully accessible for a number of reasons:

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.

High-quality validation of digital competences is a challenge

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.

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.

Employability as the main motivation for funding of lifelong learning

There is little political interest in funding the training of digital competences at levels 1 and 2, as policies and initiatives often aim to promote employability, and the labour market relevance of (digital) competences only starts at level 3, analogous to the mapping of formal qualifications to the NQF. This is one of the reasons why Dig-CERT focuses on levels 3 to 5. However, for persons with learning difficulties, digital inclusion means acquiring basic digital competences that are necessary to cope well in everyday life and to participate in society including the world of work.

4 Bottom-up initiatives working towards the digital inclusion of persons with learning difficulties

By bottom-up initiatives, we mean activities and projects that are developed and implemented 'from below', by practitioners who have acquired relevant expertise in working with marginalised and vulnerable target groups, in particular with persons with learning difficulties. Key informants emphasised the importance of a bottom-up perspective for educational development and research in order to effectively address the needs of persons with learning difficulties, both in conceptualising the provision of basic digital competences and, where appropriate, in validating learning outcomes.

Based on the screening, we were able to identify a number of initiatives in Austria that provide support services, training and/or assessment or validation of basic digital skills for persons with learning difficulties and other disadvantaged groups and whose approach can be categorised as bottom-up. Below we present an overview of Austrian bottom-up initiatives that caught our attention during the screening process. This is only a small selection and does not claim to be an exhaustive list. It should also be borne in mind that Austria is made up of nine federal provinces and that there are some regional or local initiatives that do not cover the whole country.

Offers targeted at persons with learning difficulties

The following section describes initiatives that take an inclusive approach to education by supporting and fostering access to tailor-made education to develop basic digital competences, mainly targeted at persons with disabilities including persons with learning difficulties.

- In addition to the workshops specifically for persons with learning difficulties in the ‘Digital Skills for All’ pilot phase and the ‘Digital Everywhere’ initiative (as presented in chapter 2), ‘atempo Education’ (atempo Bildung) provides training to prepare students with disabilities, learning difficulties and autism for the transition from school to work with a strong focus to work on a computer (or in catering). Further training, with a strong focus on digital learning, is offered in computers for beginners, preparation for the International Certification of Digital Literacy (ICDL), formerly known as the European Computer Driving Licence (ECDL), image processing or application training. The pedagogical approach is labelled as person-centred and strives to encompass learners as an active, creative and co-responsible actor in a learning process. Find out more (in English): https://www.atempo.at/en/produkt/atempo-bildung/

- FRISBI, the centre for leisure, sport, education and training, is part of the Protestant social welfare organisation 'Evangelisches Diakoniewerk'. FRISBI's 'Job Fit Programme' offers a range of vocational training courses for persons with disabilities, designed to recognise and develop already existing competences. The programme also includes courses on how

to use digital devices (computers, tablets and smartphones) and how to surf the internet safely. All courses are conducted in an easy-to-understand language and the duration of the courses can be adapted to the individual learning objectives of the participants, which are defined in a pre-course dialogue. Computers and tablets are provided by FRISBI, only smartphones need to be brought to the course. Find out more (in German only): https://www.diakonie.at/unsere-angebote-und-einrichtungen/frisbi-zentrum-fuer-freizeit-sport-bildung

- 'Learning for Life' (LebensLernen) is an inclusive educational programme initiated by LebensGroß GmbH and open to everyone. The wide range of courses on offer (e.g. language courses, human rights, presentation techniques or museum visits) is aimed at developing new skills and fostering personal growth. With DigiLab, Digi4Us and other computer courses, the educational programme also focuses on digital inclusion. The courses are tailored to the needs of the participants. For example, as part of the digital on-call seminar, individual appointments can be booked and digital topics can be tailored to participants' suggestions and needs. Find out more (some information available in English): https://www.lebensgross.at/en/training/
or https://www.lebensgross.at/bildung/lebenslernen/

- 'biv - the academy for integrative education' (biv - die Akademie für integrative Bildung) stands for education, information and networking, and offers educational courses, information and counselling. Its services are aimed at people with disabilities, carers/support staff and relatives, and adult educators. Courses include basic digital competences. The 'computer for beginners' course aimed to facilitate the use of digital devices, surfing the Internet and using various applications software. In addition, a series of workshops aimed to promote access to the digital world. There are cost-free workshops on how to use tablets and smartphones in everyday life. Find out more (in German only): https://www.biv-integrativ.at/kurse

- BFI Salzburg - vocational training institute (BFI - Berufsförderungsinstitut Salzburg) offers a basic digital training programme for persons with disabilities in collaboration with integrative (social) enterprises that prepare persons with a wide range of disabilities for the labour market (Digitale Kompetenzen für Menschen mit Beeinträchtigung & integrative Betriebe). This offer consists of three different modules to choose from: digital job applications, online communication tools, and digital consumption and (critical) financial literacy. The training is learner-centred and adapted to the specific needs of the target group. Depending on the support needs of the learners, support staff can participate in the courses. Find out more (in German only): https://www.bfi-sbg.at/bildungsprojekte/digitale-kompetenzen

Offers targeted at marginalised and vulnerable groups

The following section presents initiatives that also take an inclusive approach to education. These offers are not directly targeted to persons with learning difficulties, however persons with learning difficulties may be part of the target groups of these programmes or initiatives.

- Adult basic education (ABE) is a low-threshold and inclusive approach to education. The first ABE programme in Austria was designed in the late 1980s. From the outset, digital tools (e.g. learning software or writing on a computer) were part of the educational programme alongside literacy and numeracy. The national ABE programme, the 'Initiative for Adult Education' (Initiative Erwachsenenbildung), was launched in 2012 as 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 who have never graduated from a lower secondary education to continue their basic education or to complete their compulsory education.The ABE programme has a curriculum that defines basic digital competences in addition to literacy and numeracy (BMBWF, 2024). The project 'Central Advice and Service Center for ABE' (Zentrale Beratungs- und Servicestelle für Basisbildung und Alphabetisierung), organised by 'B!LL - Institute for Educational Development' (B!LL - Institut für Bildungsentwicklung), offers free telephone advice on course offerings and serves as an information hub for providers, adult educators, and learners as well as for media representatives and the public. Find out more (in German only): https://www.alphabetisierung.at/

- The 'digital toolbox' (Digitale Werkzeugkiste) is an online platform that is accessible free of charge which provides an online training and validation tool for basic digital skills. The digital toolbox was developed in the course of the Digi+ project by arbeit plus - Soziale Unternehmen Niederösterreich together with the Fachhochschule St. Pölten (Ilse Arlt Institute for Social Inclusion Research), funded by the Project fund Labour 4.0 of the Chamber of Labour (Projektfonds Arbeit 4.0 der Arbeiterkammer) of Lower Austria, one of the nine Austrian provinces. Four learning modules (Getting started in the digital world / Internet and emails / Digital security /Finding a job digitally) are offered free of charge and certificates can be obtained at the end of the course. The target groups of the Digi+ project are social enterprises who offer transition jobs for long-term unemployed and often low-qualified persons to support their (re-)integration in the first labour market. The project has been funded by the regional network of arbeit plus NÖ since March 2022. Find out more (in German only): https://werkzeugkiste.arbeitplus.at/

- The DiWi-Pass project, initiated by the 'Steyr Women's Foundation' (Frauenstiftung Steyr) and developed by the Johannes Kepler University Linz, 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. The overall aim is to improve the career opportunities of people who are disadvantaged in the labour market, most of whom have been unemployed for a long time and are now employed in so-called transition jobs in social enterprises and have low/medium digital skills. This project is funded by the Upper Austrian Chamber of Labour's Future Fund 'Arbeit-Menschen-Digital". Find out more (in German only): https://www.frauenstiftung.at/de/innovationen/diwi-pass.php

5 Conclusions

Austria has adopted the European digital skills strategy, demonstrating the country's proactive stance on digitalisation. Key highlights include the establishment of the 'Digital Skills Initiative for Austria' and the implementation of the 'Office for Digital Skills'. With a clear roadmap until 2026, Austria aims to ensure that all citizens have basic digital skills by 2030.

Implementation of the EU DigComp strategy with regard to persons with learning difficulties

The development of the DigComp 2.3 AT framework, based on the EU DigComp framework, reflects Austria's commitment to tailor digital competences to its specific context, including the introduction of a sixth competence area to map and address basic digital competences. 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, and certification through Dig-CERT, based on the DigComp AT framework, aim to ensure widespread access to training and validation of digital skills.

Furthermore, the alignment of the DigComp AT with the EQF and subsequently the NQF ensures transparency and comparability of digital competences, thus providing a solid basis for capacity building and digital inclusion of all citizens.

Despite significant progress in implementing a national strategy and pursuing the ambitious goal of ensuring that all citizens have basic digital skills by 2030, challenges remain in effectively implementing digital inclusion initiatives and reaching out to marginalised and vulnerable citizens, especially persons with learning difficulties. Thus, there are significant gaps and challenges in the digital inclusion of persons with learning difficulties that hinder adequate capacity building and digital inclusion.

Gaps and challenges in the implementation at levels 1 and 2 with regard to persons with learning difficulties

There are some policies in place to promote digital competences for all. However, there are a number of gaps and challenges that highlight the need for targeted efforts towards inclusive education by means of reaching out to persons with learning difficulties and by promoting basic digital competences for persons with learning difficulties in a tailored and learner-centred approach.

- Despite the availability of handheld devices, persons with learning difficulties face challenges in accessing more complex hardware such as laptops or computers. This lack of access hinders their participation in digital initiatives and exacerbates existing inequalities in (basic) digital competences.
- There is a significant gap in awareness of the digital needs of persons with learning difficulties among policy makers and in national policies. The lack of recognition of the relevance of digital competences for persons with learning difficulties leads to their neglect in digital inclusion efforts.
- The lack of explicit objectives for digital inclusion of persons with learning difficulties in national policies highlights the need for targeted measures to address their specific needs and provide for capacity building and digital inclusion.
- Limited funding for outreach to persons with learning difficulties and short-term initiatives such as one-time and short workshops pose challenges in designing inclusive workshops tailored to the needs of persons with learning difficulties. Lack of appropriate funding further hampers efforts to effectively reach and support this vulnerable group.
- Practitioners working with persons with learning difficulties often lack the necessary digital skills themselves, which hinders their ability to create inclusive learning environments and to support persons with learning difficulties to take advantage of digitalisation in their daily lives or work contexts.
- Apart from the digital professionalisation, practitioners lack pedagogical support for supporting persons with learning difficulties which is crucial for effectively integrating digital applications and tools into existing processes and programmes to ensure that they meet the diverse learning needs of persons with learning difficulties and make a positive contribution to their lives, as learning for fun, out of curiosity or to solve specific problems are relevant learning drivers.
- Assessment should be an integral part of supportive training programmes, but current online assessment tools are often inaccessible and inappropriate for persons with learning difficulties, highlighting the need for tailored and accessible assessment procedures embedded in supportive training programmes.

- Embedding validation within the learning process and tailoring it to the specific needs of persons with learning difficulties is essential for effective empowerment, but high-quality validation of basic digital competences for persons with learning difficulties is challenging and resource intensive and calls for fair cost-benefit considerations.
- Such cost-benefit considerations challenge the predominant focus on employability in funding lifelong learning initiatives. The sole argumentative figure of employability neglects the importance of basic digital competences for persons with learning difficulties in everyday life and social participation beyond the labour market.

Bottom-up initiatives working towards the digital inclusion of persons with learning difficulties

Initiatives 'from below' are based on extensive expertise in working with and supporting persons with learning difficulties, and therefore play a crucial role in addressing gaps and challenges in digital inclusion efforts.

By fostering collaboration, leveraging resources, and adapting existing approaches, these initiatives could help to build a more inclusive and accessible digital learning environment for persons with learning difficulties in Austria and move towards a more inclusive digital society, where all citizens, including persons with learning difficulties, can thrive.

Thus, collaboration between government/policy makers, persons with learning difficulties providers and practitioners, and adult education providers appears to be key to digital inclusion for persons with learning difficulties.

6 References

Andersson, P. (2017). Validation as a learning process. In R. Duvekot, D. Coughlan, & K. Aagaard (Eds.), The learner at the centre: Validation of prior learning strengthens lifelong learning for all (pp. 121–127). European Centre Valuation of Prior Learning/VIA University College.

AK Digioffensive & bfi Salzburg. (2023). Digitale Kompetenzen für Menschen mit Beeinträchtigung. Digitalisierung als Inklusionsbooster. https://digioffensive.ak.at/projekte/inklusion/Digitale-Kompetenzen-fuer-Menschen-mit-Beeintraechtigung.html

arbeit plus - Soziale Unternehmen Niederösterreich. (2024). Die digitale Werkzeugkiste. https://werkzeugkiste.arbeitplus.at/

Aschemann, B. (2023). Qualitätsleitfaden für Bildungsangebote im Bereich grundlegender Kompetenzen. OeAD Digitale Kompetenzen. https://oead.at/fileadmin/Medien/oead.at/KIM/Expertise/Digitale_Kompetenzen/Qualitaetsleitfaden_Final.pdf

atempo. (2024a). About atempo association. https://www.atempo-association.org/about-us/

atempo. (2024b). Digital Überall: Kostenlose Workshops. https://www.atempo.at/digital-skills-workshops/

Basisbildung und Alphabetisierung. (2017). Lernmaterialien für den Unterricht. https://www.alphabetisierung.at/lernmaterial/

BFI Salzburg (2024). Digitale Kompetenzen für Menschen mit Beeinträchtigung und integrative Betriebe. https://www.bfi-sbg.at/bildungsprojekte/digitale-kompetenzen

BFI Wien. (2024). Dig-CERT am BFI Wien: Vermessen Sie Ihre Digitalkompetenzen! https://www.bfi.wien/news-und-stories/dig-cert-am-bfi-wien-messen-sie-ihre-digitalkompetenzen

BIV - die Akademie für integrative Bildung (2024). Kurse für Menschen mit Behinderung. https://www.biv-integrativ.at/kurse

Bloor, M. (2011). Addressing social problems through qualitative research. In D. Silverman (Ed.), Qualitative research: Issues of theory, method and practice (3. ed., pp. 399–415). SAGE.

BMBWF - Bundesministerium für Bildung, Wissenschaft und Forschung. (2024). Initiative Erwachsenenbildung: Curriculum Basisbildung. https://www.initiative-erwachsenenbildung.at/DOWNLOADS/curriculum/Curriculum_2024-01.pdf

BMSGPK - Bundesministerium für Soziales, Gesundheit, Pflege und Konsumentenschutz. (2022). National Action Plan on Disability 2022–2030. Austrian Strategy for the Implementation of the UNCRPD. https://broschuerenservice.sozialministerium.at/Home/Download?publicationId=675&attachmentName=Nationaler_Aktionsplan_Behinderung_2022_2030_englisch.pdf

CEDEFOP. (2023). European guidelines for validating non-formal and informal learning (3rd ed.). Publications Office of the European Union. https://doi.org/10.2801/389827

Chance B Gruppe. (2022). Daten und Fakten. https://www.chanceb-gruppe.at/de/Chance-B-Gruppe/Ueber-uns/Daten-und-Fakten

Dig-CERT. (n.d.). Dig-CERT. https://dig-cert.at/en/about/home

Digital Austria. (2024a). The Success story of e-government in Austria. E-Government A-Z - Digital Austria. https://www.digitalaustria.gv.at/eng/insights/E-Gov-A-Z_EN.html

Digital Austria. (2024b). Digital fit werden mit der digitalen Kompetenzoffensive. Mach das Internet zu deinem Freund. https://www.digitalaustria.gv.at/kompetenzen.html

Digital Austria. (2024c). Seizing the opportunities of digitalisation together. Digital skills initiative for Austria. https://www.digitalaustria.gv.at/eng/strategy/Digital-Skills-Initiative-Austria.html

European Commission. (2018). The European qualifications framework: Supporting learning, work and cross-border mobility - 10th anniversary. Publications Office of the European Union. https://doi.org/10.2767/385613

European Commission. Directorate General for Communications Networks, Content and Technology. (2023). 2030 Digital Decade: Report on the state of the Digital Decade 2023. Publications Office of the European Union. https://doi.org/10.2759/318547

Ferrari, A. (2013). DIGCOMP: A framework for developing and understanding digital competence in Europe. Publications Office of the European Union. https://doi.org/10.2788/52966

Fetterman, D. M. (2008). Key informant. In L. M. Given (Ed.), The Sage encyclopedia of qualitative research methods (p. 477). SAGE.

Frauenstiftung Steyr. (2024). Diwi-Pass. https://frauenstiftung.at/de/aus--und-weiterbildung/diwi-pass.php

FRISBI - Zentrum für Freizeit - Sport - Bildung. (2024). https://www.diakonie.at/unsere-angebote-und-einrichtungen/frisbi-zentrum-fuer-freizeit-sport-bildung

Given, L. M. (Ed.). (2008). The Sage encyclopedia of qualitative research methods. SAGE.

Julien, H. (2008). Content analysis. In L. M. Given (Ed.), The Sage encyclopedia of qualitative research methods (pp. 120–122). SAGE.

Johannes Kepler Universität Linz (n.d.) Validierung des DiWi-Passes. https://www.jku.at/linz-school-of-education/forschung/bildungsforschung/forschungsprojekte/validierung-des-diwi-passes/

Kalcher, M., & Kreinbucher-Bekerle, C. (2021). Die Nutzung digitaler Medien von Menschen mit Lernschwierigkeiten in der Behindertenhilfe. Ergebnisse eines partizipativen Forschungsprojekts. MedienPädagogik (Occasional Papers), 1–16. https://www.medienpaed.com/article/view/1143/1003

LebensGroß GmbH. (2024). LebensGroß - Learning for life. https://www.lebensgross.at/en/training/

Lenhard, W., & Lenhard, A. (2013). Learning difficulties. In Oxford Bibliographies Online Datasets. https://doi.org/10.1093/obo/9780199756810-0115

Mayring, P. (2014). Qualitative content analysis: theoretical foundation, basic procedures and software solution. https://nbn-resolving.org/urn:nbn:de:0168-ssoar-395173

Morgan, D. L., & Guevara, H. (2008). Interview guide. In L. M. Given (Ed.), The Sage encyclopedia of qualitative research methods (pp. 469–470). SAGE.

Nárosy, T., Schmölz, A., Proinger, J., & Domany-Funtan, U. (2022). Digitales Kompetenzmodell für Österreich: DigComp 2.3 AT (2022). Medienimpulse, 60(4), 1–103. https://doi.org/10.21243/mi-04-22-23

OeAD - Agentur für Bildung und Internationalisierung. (2024). Digital überall. https://oead.at/en/expertise/geschaeftsstelle-digitale-kompetenzen/digital-ueberall

ÖBR - Österreichischer Behindertenrat. (2021a). NAP Digitalisierung und KI. https://www.behindertenrat.at/2021/05/nap-digitalisierung-und-ki-2/

ÖBR - Österreichischer Behindertenrat. (2021b). Österreichischer Behindertenrat. (2021). NAP Digitalisierung und KI. https://www.behindertenrat.at/wp-content/uploads/2021/05/NAP-AG-Digitalisierung-und-KI.pdf

ÖBR - Österreichischer Behindertenrat. (2023). Positionspapier 2023. Forderungen des Behindertenrates im Überblick. https://www.behindertenrat.at/wp-content/uploads/2019/08/Positionspapier_Oesterreichischer_Behindertenrat_2023.pdf

ÖIBF - Österreichisches Institut für Berufsbildungsforschung. (2019). About us. https://oeibf.at/en/

Prior, L. (2011). Using documents in social research. In D. Silverman (Ed.), Qualitative research: Issues of theory, method and practice (3. ed., pp. 93–110). SAGE.

Schmölz, A., Schukoff, P. & Gugitscher, K. (2022). Von der Validierung informeller Kompetenzen zum Dig-CERT und DigComp-CERT – Validierungsprozesse. Projektabschlussbericht des Österreichischen Instituts für Berufsbildungsforschung. Wien: öibf.

UNESCO. (2021). Media and information literate citizens: think critically, click wisely! Media & information literacy curriculum for educators & learners. UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000377068

Villalba-García, E. (2021). Validation of non- formal and informal learning: The hero with a thousand faces? European Journal of Education, 56(3), 351–364. https://doi.org/10.1111/ejed.12468

Vuorikari, R., Kluzer, S., & Punie, Y. (2022). DigComp 2.2 – The Digital Competence framework for citizens: With new examples of knowledge, skills and attitudes. Publications Office of the European Union. https://doi.org/10.2760/115376

Zentrale Beratungsstelle für Basisbildung und Alphabetisierung (2024). Zentrale Beratungsstelle für Basisbildung und Alphabetisierung. https://www.alphabetisierung.at/

7 Annex

Key informants interviewed for this report

Name of the key informant	Organisation and/or area of expertise	Associated partner	Date	Duration	Setting
Birgit ASCHEMANN	Conedu - Verein für Bildungsforschung und Bildungsmedien (association for educational research and media); expert on digital professionalisation in adult education	yes	07 February 2024	61 min	online
Nadja BERGMANN	L&R Sozialforschung (institute for social research); social researcher involved in evaluating a programme under the Digital Skills Initiative for Austria	no	24 April 2024	25 min	online
Anneliese FRANZ	atempo (social enterprise which develops products in the areas of general education, integration into the labour market, accessibility and evaluation of social services); head of the digital education department of atempo	no	02 April 2024	47 min	in person
Patrick REISINGER	OeAD Geschäftsstelle für Digitale Kompetenzen; head of digital skills office at the Austrian Agency for Education and Internationalisation	no	05 February 2024	52 min	online
Alexander SCHMÖLZ	ÖIBF - Österreichisches Institut für Berufs-bildungsforschung (Austrian Institute for Vocational Training Research); managing director of ÖIBF, researcher and trainer in the field of digitisation, digital skills and media didactics	yes	12 March 2024	56 minutes	online