



Increase
Digital
Competences
to Promote Inclusion

InDiCo - Increase Digital Competences to Promote Inclusion

2023-1-AT01-KA220-ADU-000157647

Digital inclusion for persons with learning difficulties

Methodology handbook for validating basic digital competences at DigComp levels 1 and 2



Co-funded by
the European Union

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Project partners:



Chance B (Austria); European Platform for Rehabilitation (Belgium); Universität Klagenfurt (Austria);
Fundação AFID Diferença (Portugal); Fundación Rey Ardid (Spain); Mariaberg, e.V (Germany);
Theotokos Foundation (Greece)



Co-funded by
the European Union

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1 Introduction

The aim of the Erasmus+ funded project InDiCo is to increase the inclusion of persons with learning difficulties in the digital age, as they are at risk of digital exclusion and face particular difficulties in accessing needs-based educational programmes and/or assessment and validation procedures. Therefore, the InDiCo project consortium developed **a competence-based methodology for the validation of basic digital competences** taking into account the specific learning needs of persons with learning difficulties.

This methodological handbook serves as a conceptual background for the InDiCo validation framework, which is tailored to the **relevant digital competences of persons with learning difficulties at levels 1 and 2 of the EU DigComp**, the European digital competence framework for citizens. This document provides the methodological basis for learner-centred, competence-based facilitation of learning and for the validation of basic digital competences.

Before we briefly explain the methodology for the InDiCo validation framework, we would like to explain some relevant terms and concepts:

- The InDiCo project consortium has agreed to use the term **persons with learning difficulties** instead of persons with intellectual disabilities. According to Lenhard & Lenhard (2013), learning difficulties encompass a range of challenges to learning that result from a variety of factors, which may be genetic, neurobiological, cognitive, motivational, affective, or socio-economic. It includes both general learning difficulties and specific challenges such as reading, spelling or numeracy difficulties;
- **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. 14-18). **Assessment** is usually referred to as the stage where an individual's learning outcomes are compared against specific reference points and/or standards (p. 16);
- **Validation of non-formal and informal learning**¹ can be conceptualised as a powerful tool to support marginalised and vulnerable adults. This group of adults has often been disadvantaged in formal education or even excluded from formal education or parts of it. Thus, Andersson (2017) highlights the importance of introducing and advocating for alternative pedagogical approaches where the validation of learning (prior and in situ) is

¹ Formal, non-formal and informal learning are mainly policy terms. Formal learning takes place mainly in (compulsory/initial) general education, initial vocational education and training, and higher education. Adult education, including general education and continuing vocational education and training, is usually regarded as non-formal learning. Informal learning takes place in the context of daily activities - work, family or leisure or volunteering activities - that are not explicitly designated as learning activities.

seen “as a learning process”. This allows for education to be tailored to individual needs and empowers individuals by building on what they already know, understand and can do. There is now a greater awareness and also some significant projects in the Member States of the European Union to reach out to disadvantaged groups (European Commission & Cedefop, 2024, pp. 33-36).

- **Validation requires a reference point or standard.** The InDiCo project considers the EU DigComp, the digital competence framework for citizens (Vuorikari et al., 2022), as a relevant framework, while prioritising the professional expertise of those working with persons with learning difficulties and the voice of the learner. This balance between standardisation and individual learning needs refers to the current state of the validation of non-formal and informal learning (Villalba-García & Bjornavold, 2023) and is at the heart of the InDiCo project.

For the development of the methodology presented here and the InDiCo validation framework, the InDiCo project consortium drew on the findings on the *[delete: current]* situation and challenges related to the implementation of the EU DigComp strategy for persons with learning difficulties with regard to the status quo of

- the EU DigComp framework implementation on levels 1 and 2, and
- the assessment and validation of digital competences at levels 1 and 2 for persons with learning difficulties,

as presented in the InDiCo reports for Austria, Germany, Greece, Portugal, Spain, and at pan-European level² as well as in sections 2.1 and 2.2 of the InDiCo policy recommendations³.

Despite significant or some progress in implementing a digital inclusion strategy at national level 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. There are **significant gaps and challenges in the digital inclusion of persons with learning difficulties** that hinder adequate capacity building. Therefore, collaboration between government/policy makers, providers and practitioners, and adult education providers appears to be key to the digital inclusion of persons with learning difficulties. These results support the **importance of developing a framework** for the validation of basic digital competences that is **tailored to the needs of persons with learning difficulties**.

² The reports are available on the InDiCo project website:

<https://www.epr.eu/project/indico-increase-digital-competences-to-promote-inclusion/>

³ The policy recommendations “Bridging the Digital Divide

Enhancing Digital Competence Development and Validation for Persons with Learning Difficulties in Europe” are available on the InDiCo project website: https://www.epr.eu/wp-content/uploads/InDiCo_Policy-Recommendations.pdf

To develop such a tailored framework, the **most relevant basic digital competences for the target group were identified**. This involved a screening of the dimensions of the EU DigComp on levels 1 and 2 by consulting a panel of experts in each partner country and at a pan-European level to identify the most relevant digital competences for persons with learning difficulties. This step was followed by a participatory process in focus groups in each partner country in which service users further identified relevant basic digital competences and their specific learning needs.

This process of developing a validation framework for persons with learning difficulties has been fuelled by the key findings gained in an Austrian pilot project (Schmölz, Schukoff & Gugitscher, 2022), conducted by Chance B and the ‘Austrian Institute for Vocational Education Research’ (Österreichisches Institut für Berufsbildungsforschung, öibf). In this pilot project, Chance B's KomKom approach for training and validation of vocational qualifications at levels 1, 2 and 3 of the Austrian National Qualifications Framework, aimed at empowering marginalised and vulnerable adult learners, was used to develop a catalogue of basic digital competences on the basis of the Austrian version 2.2 of the DigComp.

Based on these findings, the InDiCo validation framework in line with the DigComp framework and in relation to the learning needs of persons with learning difficulties was developed. Learning outcomes and criteria were defined to assess these competences in a standardised way in relation to established validation approaches for marginalised and vulnerable adults.

2 Key principles for the validation of basic digital competences for persons with learning difficulties

Validation can be seen as an essential part of the lifelong learning process and, alongside existing political, institutional, financial and legal arrangements, should above all place the learner at the centre of the process (Villalba-García & Bjornavold, 2023, p. 42).

Two key dimensions of learning are involved in validation. On the one hand, **formative validation** refers to the assessment, appraisal and recognition of the **individual learning progress** by educational professionals in order **to promote the development of competences**. The second dimension is recognition of learning in the form of an official certification of learning outcomes. Such evidence is based on **summative validation**, i.e. the **verification of learning** outcomes against a specified reference point or standard (p. 49).

The InDiCo validation framework allows for the use of **assessment for learning**, to support learner-centred, competence-based learning processes (formative), and at the same time allows for the **assessment of learning** with the aim of validating learning outcomes to a specific standard (summative). *[delete: , namely the InDiCo validation framework.]*

In any validation process, a reference point or standard plays a key role. This can be a formal or non-formal educational or occupational qualification, a training curriculum or an assessment

framework. Both educational and occupational standards are by definition fully and transparently described in terms of expected learning outcomes. However, educational standards typically cover a wider range of expected learning outcomes than occupational standards, reflecting the broad responsibilities and tasks of initial education and training (Cedefop, 2023, p. 37). The InDiCo validation framework is designed as an educational standard, describing competences related to work, learning, leisure and well-being that promote inclusion and participation in our digital society (Vuorikari et al., 2022). Development of the InDiCo validation framework began in 2024, using EU DigComp 2.2 and DigComp 2.3 AT as starting points. Section 4 explains how the updates in EU DigComp 3.0 (published by the end of 2025) and DigComp 3.0 AT (June 2026) have been incorporated into the InDiCo methodology. .

As **validation is a learner-centred process**, taking into account past experiences and prior learning as well as personal growth and reflection, the **individual perspective** must be prioritised and maintained. **Procedures** therefore should be **flexible and adaptable to personal preferences and specific needs**, and methods should be used that provide learners with individualised and personalised support and guidance as needed (Villalba-García & Bjornavold, 2023, pp. 41-43). The current situation of validating non-formal and informal learning with regard to marginalised and vulnerable persons shows that there is still considerable room for improvement, despite targeted outreach and awareness-raising activities. Challenges are mainly found in a general lack of awareness of validation opportunities and in the fragmentation of activities for marginalised and vulnerable groups. These include insufficient coordination, lack of recognition of validation as a policy priority and insufficient resources to reach disadvantaged groups (European Commission & Cedefop, 2024, pp. 33-36). The InDiCo validation framework took up this challenge in the form of a European project, specifically addressing the needs of persons with learning difficulties, which are highly at risk of digital exclusion.

A prerequisite for capturing complex individual learning in a standardised way is the comprehensive orientation of validation. Therefore, validation consists of the following four distinct phases: identification, documentation, assessment, and certification (Cedefop, 2023, 14).

- **Identification:** Validation begins with the identification of prior learning and serves to make individuals more aware of their achievements to date. This stage is crucial because each person may already have achieved different learning outcomes in different contexts. Such identification could begin by comparing the individual's learning outcomes with a given standard, or by taking a closer look at the individual's learning outcomes (Cedefop, 2023, p. 15). The identification of prior learning can be organised as educational guidance and allows the tailoring of learning provision to the individual, making it a powerful tool for learners and learning facilitators.

The **InDiCo validation framework** supports this phase by allowing an individual stocktaking of basic digital competences against the given standard. However, in this

initial phase, the InDiCo validation framework should not be used as a testing tool. Rather, it should be understood as a framework that helps to **create transparency about further learning needs** with regard to basic digital competences.

- **Documentation:** The documentation stage usually complements the identification stage by adding **evidence and proof of acquired learning**. This can be done by compiling a portfolio, which usually includes a CV and an overview of the career to date, supplemented by various types of evidence, ranging from written documents to work samples and practical demonstrations (Cedefop, 2023, pp. 15-16).

The **InDiCo validation framework** does not only support the identification phase, but also provides a document that informs about individual achievements and further learning needs with regard to basic digital competences according to the given standard based on self-assessment. In this phase as well, the InDiCo validation framework should not be used as a testing tool. Rather, it can help to **create transparency about individual learning achievements in the learning process** and to decide on **next steps** to achieve learning outcomes as defined in the relevant standard, again for both, the learners and the learning facilitators.

- **Assessment:** Assessment is usually referred to as the stage where an individual's learning outcomes are compared against specific reference points and/or standards. This task needs to be designed to capture and assess the learning that is specific to each individual, so different tools need to be considered. In some cases, written tests will be sufficient; in others, demonstrations, practical tests or the assessment of other forms of evidence will be required. The assessment phase depends on the standard or reference point used. (Cedefop, 2023, pp. 16-17).

The **InDiCo validation framework** is based on learning outcomes and thus enables assessment of what a learner knows, understands and is able to do with regard to basic digital competences at a variable point during the learning journey.

- **Certification:** The final phase of the validation is certification. This can take a number of forms but usually involves the issuing of a formal (partial) qualification. Validation can be carried out by a competent authority or body which certifies that an individual's learning outcomes, achieved in a non-formal or informal context, have been assessed against established criteria and meet the requirements of a validation standard (Cedefop, 2023, pp. 17-18).

The **InDiCo validation framework** allows to issue a certificate and a supplement that informs about individual achievements against the given standard.

The identification and documentation phases are more formative in nature and tend to focus on self-awareness and personal development, thus empowering the learner. The focus on assessment and certification tends to be more summative in nature, as the main aim of summative validation procedures is to certify learning outcomes. However, both approaches can coexist (Cedefop, 2023, p. 20).

As explained above, the **InDiCo validation framework** allows for the use of **assessment for learning**, supporting learning processes of persons with learning difficulties and thus the formative nature of validation, and at the same time it allows for the **assessment of learning** with the aim of certification of basic digital competences, thus supporting the summative nature of criteria.

3 Learning outcomes and assessment criteria underpinning the InDiCo framework

The shift towards learning-outcomes-based qualifications in most European education and training systems is critical for the implementation of validation (Cedefop, 2023, p. 34). According to the EQF recommendation (2017), learning outcomes are statements of what an individual should know, understand and/or be able to do at the end of a learning process, which are defined in terms of knowledge, skills and responsibility and autonomy. Additionally, Cedefop (2025a) specifies competences as “knowledge, know-how, information, values, skills and competences an individual has acquired and/or is able to demonstrate after completion of a learning process, either formal, non-formal or informal”.

Learning outcomes are used in qualification standards and curricula as a representation of goals and expectations and to define and describe educational, training and learning objectives (Cedefop, 2023, p. 38). The assessment of learning outcomes is the “process of appraising knowledge, know-how, information, values, skills and competences [...] against relevant standards” and typically leads to certification (Cedefop, 2025b).

This shift towards learning-outcomes-based qualifications puts the **focus on the knowledge and skills** that the individual must have, rather than on how, where and when the learning took place. This signals that **a qualification can be achieved in different ways**: not only through formal education and training but also through learning at work, in leisure time activities and at home (Cedefop, 2023, p. 34). In addition, learning outcomes should be transferable to make validation a valuable asset as part of the individual's lifelong learning process (Villalba-García & Bjornavold, 2023, p. 42). The **InDiCo validation framework** consists of learning outcomes that correspond to the EU DigComp framework. These learning outcomes are supported by observable and identifiable criteria that can be assessed.

An assessment criterion in education and training is “a description of what is expected of the learner and at what level to demonstrate achievement of a learning outcome” (Cedefop, 2025c).

In the **InDiCovalidation framework**, assessment criteria provide evidence of digital competences that can be observed and identified in a learning setting or in a learner's work (behaviour). These assessment criteria are related to work, learning, leisure and well-being (Vuorikari et al., 2022), but also include criteria that may not (yet) be present in the target group but are relevant according to the relevant standard (e.g. engaging in citizenship through digital technologies). Each assessment criterion describes one piece of observable and identifiable evidence and therefore is clear, concise, unambiguous, and ultimately, verifiably. Learning objectives need to be achievable, therefore measurable and active verbs are used to formulate criteria.⁴ To meet the needs of persons with learning difficulties, easy to read language is used.

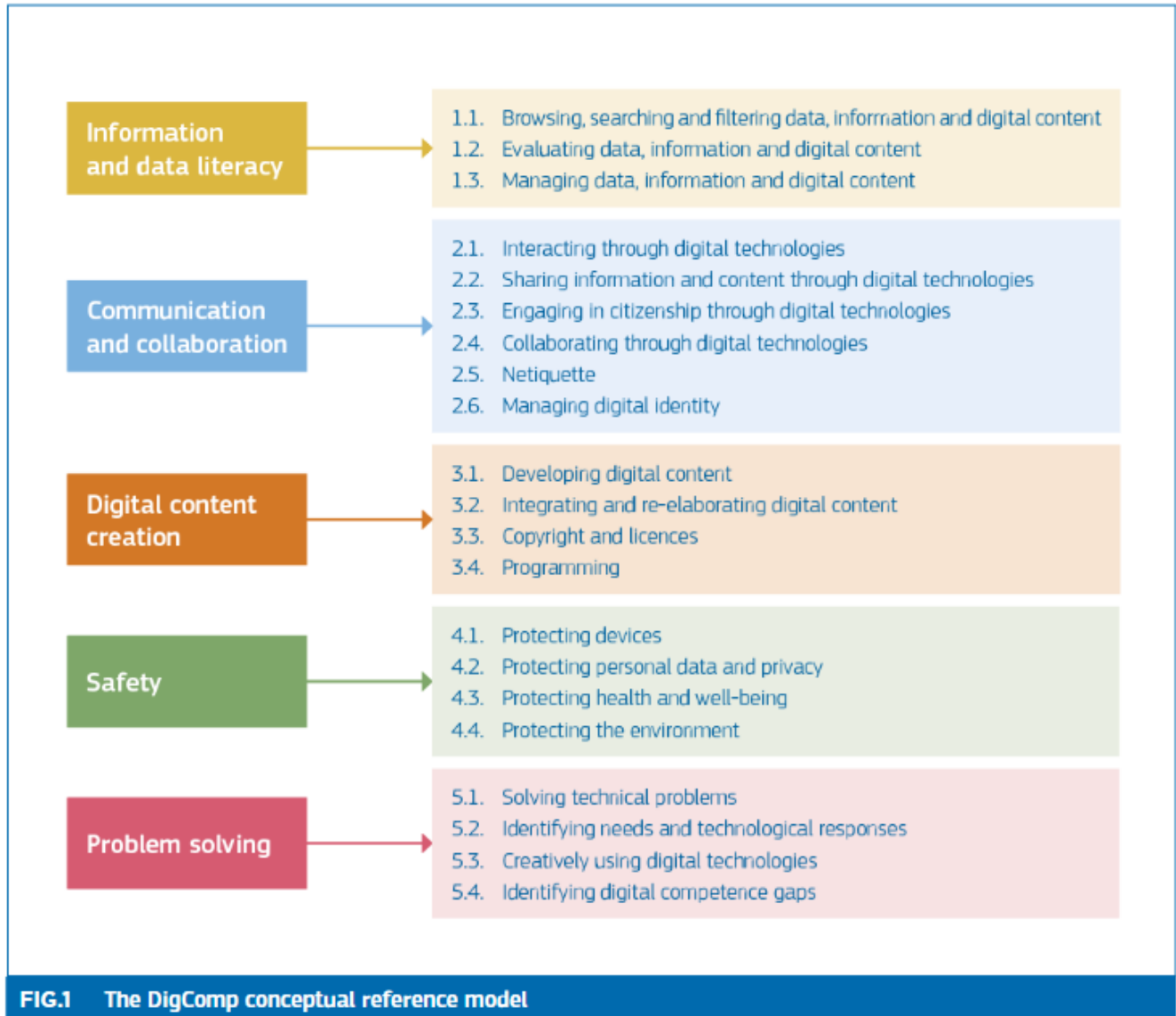
Providing learning outcomes and assessment criteria in the InDiCo validation framework has several benefits. Sharing learning outcomes and assessment criteria with learners at the beginning of their **educational journey** is an effective way of helping learners to gain transparency about their own capabilities against a given standard (identification and documentation). When assessment criteria are clear and explicit, learners can see what is important and valued in the validation framework that serves as a core curriculum for the learning provision of basic digital competences. Learners can focus their efforts on key learning outcomes and assess their own performance and learning progress through self-assessment and reflection, especially when feedback from others is provided. In non-formal learning settings (adult education), the learning outcomes and assessment criteria serve as **guidelines for tailoring the educational programme to the specific learning needs** of their learners, while maintaining a relevant and common standard.

4 Differences in the structure between DigComp framework and InDiCo framework

As explained above, the validation of non-formal and informal learning must be based on a reference point or a standard. For the InDiCo validation framework, the EU DigComp served as the relevant standard. The EU 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 (Ferrari, 2013, p. 14). *[delete: and presents a detailed framework with an in-depth description of the different aspects of 21 digital competences (pp. 15–36).]*

The five competence areas and the 21 digital competences of the EU DigComp version 2.2, on which the InDiCo methodology was initially based, were as follows (Vuorikari et al., 2022, p. 4):

⁴ It is not possible to go into the development of taxonomies of educational objectives in detail here. They trace back to Bloom's taxonomy of 1956 (Krathwohl, 2002), which focuses on cognitive processes. However, human learning also includes affective dimensions and psychomotor skills, for which taxonomies have also been developed.



In the updated version DigComp 3.0, that was published in November 2025, the structure with 5 competence areas and 21 competences remained unchanged, while the wording of these elements was updated to reflect current technological trends (Cosgrove et al., 2025, p. 17):

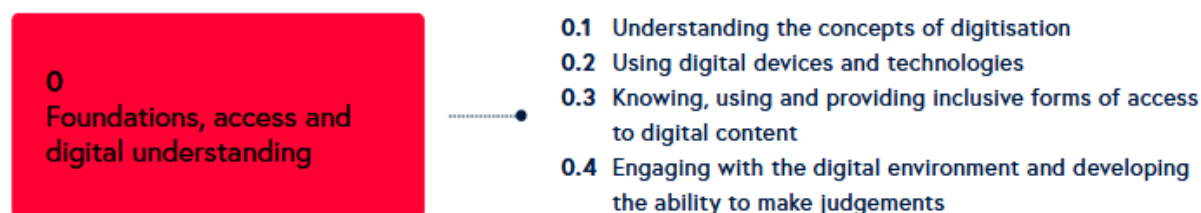


Source: JRC own elaboration.

[new illustration added]

In addition to the five EU DigComp areas, **Austria had initially introduced a sixth competence area** in the Austrian versions of the DigComp (2.2 AT and 2.3 AT). In order to ensure consistency in numbering between the Austrian and the European model, the additional competence area 'Foundations, access and digital understanding' had been given the number 0 (Nárosy et al., 2022, p. 8). As the InDiCo validation framework aims to promote basic digital competences of persons with learning difficulties at levels 1 and 2, this **competence area 0 was considered a relevant addition** to the five areas of the EU DigComp framework and was therefore also **included in the InDiCo validation framework**.

In version 2.3 of the Austrian DigComp the competence area 0, 'Foundations, access and digital understanding', was structured as follows (Federal Chancellery of Austria, 2024, p. 20):



Apart from the additional competence area 0, there were other minor differences in the Austrian reference framework. These differences were taken into account when developing the InDiCo validation framework for persons with learning difficulties.

In June 2026, DigComp 3.0 AT was published. Unlike the previous versions 2.2 and 2.3, DigComp 3.0 AT now also comprises five competence areas like EU DigComp 3.0. Competence area 0, the sixth competence area which was specific to the Austrian DigComp 2.2 and 2.3, no longer exists in version 3.0 AT. Its content has been integrated into various learning outcomes within the remaining competence areas of DigComp 3.0 AT (Grundschober et al., 2026).

Despite the development of DigComp 3.0 AT, **the InDiCo validation framework retains competence area 0**. Although the InDiCo framework is no longer fully consistent with DigComp 3.0 nor DigComp 3.0 AT, **this deviation was deliberately endorsed and accepted** by the InDiCo consortium. This is due to the fact that development work carried out within the project **highlights how relevant competence area 0 is for the target group** of persons with learning difficulties when it comes to addressing their learning needs.

Our consortium's professional expertise indicates that DigComp 3.0 (EU and AT) proceeds from the unspoken assumption that foundational digital readiness (concepts, device operation, navigation) is present, thereby setting an entry threshold above the starting point of many learners in our target group.

Retaining competence area 0 therefore does not represent a departure from the DigComp philosophy. The InDiCo assessment and validation framework does not add any new elements or content, but **continues to make those fundamentals explicitly visible**, which DigComp 3.0 AT has implicitly integrated into the competence areas 1 to 5.

For many persons with learning difficulties, however, precisely these basic prerequisites are not a given. **Competence area 0 thus forms the foundation for further competence development**, and retaining it also serves an **educational policy function**. It signals the relevance of these competences for persons with learning difficulties and makes it clear that these must not be taken for granted.

This **visibility** serves, on the one hand, to raise awareness of fundamental prerequisites (corresponding to an entry level) for building digital competences and participating in a more and more digital world. On the other hand, it provides important guidance for the design of further training programmes, which must always be based on the learners' respective learning prerequisites.

In DigComp 3.0 AT, the content of 'Foundation, access and digital understanding' has been integrated into various competence areas, which may lead to additional complexity for InDiCo's target group and make it more difficult to find one's way around. If basic prerequisites such as device operation, the fundamentals of digital technologies, a basic understanding of AI, or accessibility are spread across different competence areas, this leads to reduced **transparency**, which can make it harder for both learners and their support staff to find their way around.

However, the InDiCo validation framework was developed precisely with the aim of **providing guidance for competence assessment, the planning of learning pathways, and the development of competences or educational programmes**.

Retaining the competence area 0 also supports the **principle of modularity**: if the basic prerequisites were to be distributed entirely across areas 1 to 5, it would no longer be guaranteed that they are systematically recorded or promoted. A separate competence area 0 allows these fundamental prerequisites to be addressed independently.

The standard defined by DigComp as a general reference model works for the vast majority of European citizens, but research carried out as part of the InDiCo project and the expertise of the project partners working in the field shows that persons with learning difficulties remain at risk of exclusion in an increasingly digital world.

Conclusion: For reasons of accessibility, modularity, transparent competence assessment and educational planning, the InDiCo validation framework explicitly identifies the fundamental prerequisites for acquiring basic digital competences. The **retention of learning outcomes and assessment criteria in competence area 0** does not represent a deviation from the objective of DigComp 3.0 EU and AT, but rather a **target-group-specific elaboration in the spirit of inclusive education and digital participation**.

5 The InDiCo tool for validating basic digital competences of persons with learning difficulties

As described above, learning outcomes and assessment criteria are at the heart of the InDiCo validation framework.

The table below illustrates the structure of the InDiCo catalogue of competences with a few examples for the three categories. The first two dimensions reflect the structure and wording of the DigComp (Austrian version 2.3 for competence area 0, and version 3.0 for the other competence areas). The assessment criteria in column 3 are tailored to the specific needs of persons with learning difficulties and describe pieces of observable and identifiable evidence for the respective competences in easy to read language.

Competence areas	Competences (learning outcomes)	Assessment criteria
0. Foundations, access and digital understanding	0.1 Understanding the concepts of digitalisation	01.1 The word 'digitalisation' has several meanings. For example, in technology, information is changed so that it can be used by a computer or a mobile phone. In everyday life, digitalisation means: I'm using a computer more and more. Or a mobile phone. Or similar devices. I know of examples of digitalisation. I give some examples.
		0.1.1 There are digital devices. And there are devices that aren't digital. I explain the difference.
		0.1.2 ...
	0.2 Using digital devices and technologies	0.2.1 ...
		0.2.4 I know when to tap or swipe on my mobile phone or tablet. I know which way to swipe.
	0.3 ...	0.3.1 ...
	0.4 ...	0.4.1 ...
1. Information and data literacy	1.1 Browsing, searching and filtering data, information and digital content	1.1.1 A browser is a computer programme. I can use a browser to go online and visit websites. For example, the website of an online shop. Or a company's website. I type the website address into the browser. I open the website.
		1.1.2 ...
	1.2...	1.2.1...
	1.3...	1.3.1...
2. ...		

Overall, the InDiCo framework consists of 25 learning outcomes, each with at least assessment criteria, making it very extensive. This means that a considerable amount of time must be allocated when using the InDiCo validation framework.

In order to digitally assess the learning progress and keep track of the achievements of the learners, the InDiCo validation framework makes use of the existing software solution, that was specifically programmed for the KomKom qualifications (Chance B), as explained in the introduction. All specifications of this application correspond to the conceptual background presented here. The application allows for self-assessment and for the assessment by others.

In the EU and AT DigComp framework the proficiency levels are derived from the EQF. Even though the eight-level differentiation in DigComp 3.0 is becoming less important (Cosgrove et al., 2025), differentiation within the first of the four levels remains of central importance to the InDiCo

approach. In DigComp 3.0 AT, the proficiency levels one and two (Basic) are described as follows (Digital Austria, 2026):

- At the basic level 1, a person has basic knowledge and fundamental skills and can complete simple tasks with direct guidance.
- At basic level 2, a person remembers simple tasks and carries them out with little or no guidance.

In the InDiCo validation framework, levels 1 and 2 are based on the same set of assessment criteria. Differentiation is made by assessing the degree of autonomy, i.e. whether or how much guidance is needed to carry out the activities described in the assessment criteria. Differentiation is achieved through four different sets of responses, as detailed in the table below:

	Level 0	Level 1	Level 2	Level >2
Set A	I am not able to do this, even with guidance.	I am able to do this with a lot of guidance.	I am able to do this with little guidance.	I am able to do this autonomously.
Set B	I am not able to do this even if someone reminds me.	I am able to do this if someone reminds me often.	I am able to do this if someone reminds me from time to time.	I am able to do this without anyone having to remind me.
Set C	Never	Sometimes	Often	Always
Set D	No	Yes	Yes	Yes

The answering options are displayed as text and additionally symbolised with icons. The level is automatically calculated based on the responses given in the software solution (InDiCo tool).

When the InDiCo tool is used to certify learning outcomes against the given standard, the assessment by others, carried out by the learning facilitator (Assessor 1), and the self-assessment of the learner (Assessor 2) are combined. A pedagogical dialogue based on the results of self-assessment and the assessment by others is an essential step in the validation process. The InDiCo tool supports this step by generating detailed reports as a basis for this joint reflection of the learning process.

The InDiCo tool can issue a certificate and a supplement informing about the individual competences against the relevant standard, the InDiCo validation framework of basic digital competences for persons with learning difficulties. These documents and achievements are discussed and valued in a pedagogical dialogue.

To meet the learning needs of persons with learning difficulties, each area of digital competence can be validated separately. This allows learners to take and celebrate smaller steps. It also

allows learning providers to offer specialised learning settings for one or two areas of digital competence or to modularise their educational programme as such.

6 Key principles for the use of the InDiCo tool

Validation is a deeply pedagogical process and practice. Validation is learner-centred because it makes previous learning processes and outcomes visible, can provide valuable insights for planning educational programmes and learning processes, and can support learners in defining new learning goals. InDiCo harnesses this pedagogical potential of validation for the digital inclusion of persons with learning difficulties.

The InDiCo validation framework provides information on relevant learning outcomes for persons with learning difficulties. It identifies learning outcomes for navigating and participating in the digital world. The InDiCo validation framework has been developed by experts in the field with the participation of persons with learning difficulties. The framework provides a general orientation for facilitating learning and is at the same time standardised and well adapted to the needs of the service users. Standardisation of learning outcomes is necessary for validation. Standardisation can also help to revise existing educational programmes or to design new ones. The InDiCo validation framework allows for the modularisation of an educational programme along the standard. The six skill areas can be validated separately and it is hypothetically possible for learners to move from one educational provider to another.

The InDiCo tool has many uses in the learning process. It helps to determine the learner's level at the beginning of a learning process. A self-assessment can also be helpful during the learning process to identify what has already been learned and what the next learning steps should be. Finally, it can be used at the end of a learning process for certification, if desired or agreed with the learner. A structured induction phase is recommended before the assessment, to familiarise participants with the equipment and the platform's user interface. The evaluation of the piloting phase showed that a structured induction phase to familiarise participants with the equipment and the platform's user interface is recommended prior to the first assessment.

There are no entry requirements for the InDiCo validation procedure. Learners do not need to demonstrate any knowledge or skills to start the learning process. The aim is to acquire and develop basic digital competences. The learning outcomes and especially the assessment criteria are formulated in easy to read language and the InDiCo tool is easy to use if learners want to carry out a self-assessment. If the InDiCo tool is to be used at the beginning of a learning process to assess the status quo, a pedagogical dialogue with the learner should be conducted to ensure that the situation does not become too much like an examination.

The InDiCo validation framework serves as a core curriculum. It provides guidance for both learning facilitators and learners on the relevant basic competences for digital inclusion and participation. It provides clarity on relevant learning outcomes and information on relevant learning content underpinned by assessment criteria. However, learning processes need to be

tailored to the individual. Learning facilitators support learners on their individual educational journey and design the respective learning path together with the learners. This requires learning facilitators who support learning in a learner-centred, competence-based way, designing learning processes in a participatory way together with the learners.

The InDiCo validation framework respects the principle of voluntary participation of learners. There is no obligation for learners to take the assessment or to certify learning outcomes. The InDiCo validation framework is not meant to be a certification tool. Its main purpose is to support the learning process (assessment *for* learning). Therefore, individual pedagogical guidance is needed to determine whether certification as the ultimate step of a learning journey makes sense for the learner. Those who wish to obtain an InDiCo certificate must be well advised by the learning provider at the beginning of the learning process. Educational providers can issue a confirmation of attendance that provides information about the content taught. Unlike a confirmation of attendance, the InDiCo certificate and supplement provide information about what a learner knows, understands and is able to do.

Pedagogical dialogue is an indispensable element of learning outcomes orientation. The pedagogical dialogue between the learner and the learning facilitator takes the learner's self-assessment as an impulse to reflect on the learning process and the learning progress, the distance travelled since the beginning of the educational journey, to jointly determine the learner's level of achievement and to jointly plan the next learning steps.

An assessment is best carried out in the learning situation itself. The InDiCo tool offers the possibility of self-assessment and assessment by others, carried out by the facilitator of learning. If the InDiCo tool is used for assessment as part of a learning process, a pedagogical dialogue should be planned in which the results of the self-assessment are discussed. If the InDiCo tool is used for certification, the results of the self-assessment and assessment by others as well as the InDiCo certificate and the InDiCo supplement are jointly discussed in a pedagogical dialogue.

Validation takes time to become effective as a pedagogical process and practice. Adult learning providers and learning facilitators need to be aware of this. Validation of non-formal and informal learning is not about being able to issue a certificate quickly. The aim is to use the InDiCo validation framework to support good, learner-centred and competence-oriented facilitation of learning and to promote individual competence development.

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