



Working paper series

No 8 / January 2022

**BRIDGING LIFELONG GUIDANCE
AND VALIDATION OF NON-FORMAL
AND INFORMAL LEARNING
THROUGH ICT
OPERATIONALISATION**

Nikos Mouratoglou and
Ernesto Villalba-Garcia

The **European Centre for the Development of Vocational Training** (Cedefop) is the European Union's reference centre for vocational education and training, skills and qualifications. We provide information, research, analyses and evidence on vocational education and training, skills and qualifications for policy-making in the EU Member States.

Cedefop was originally established in 1975 by Council Regulation (EEC) No 337/75. This decision was repealed in 2019 by Regulation (EU) 2019/128 establishing Cedefop as a Union Agency with a renewed mandate.

Europe 123, Thessaloniki (Pylea), GREECE
Postal: Cedefop service post, 570 01 Thermi, GREECE
Tel. +30 2310490111, Fax +30 2310490020
Email: info@cedefop.europa.eu
www.cedefop.europa.eu

Jürgen Siebel, *Executive Director*
Nadine Nerguisian, *Chair of the Management Board*

Please cite this publication as:
Mouratoglou, N. and Villalba-Garcia, E. (2022). *Bridging lifelong guidance and validation of non-formal and informal learning through ICT operationalisation*.
Luxembourg: Publications Office of the European Union.
Cedefop working paper; No 8. <http://data.europa.eu/doi/10.2801/692674>

Luxembourg: Publications Office of the European Union, 2022

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PDF ISBN 978-92-896-3290-4
ISSN 1831-2403
doi:10.2801/692674
TI-BA-22-001-EN-N

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CHAPTER 1.

Introduction

Over recent years, lifelong guidance has become increasingly valued in European education and training, as well as within employment and social inclusion policies. The expected impact of lifelong guidance includes the development of career management skills, labour market integration, effective management of transitions, social inclusion, increasing individuals' employability and participation rates in education and training, reducing the number of NEETs and preventing early leavers of education and training (ELET). The implementation of validation of non-formal and informal learning is connected to similar expected impacts and objectives. It has also increasingly come to play a relevant role in education and in employment and social inclusion policies (Villalba and Bjornavold, 2017).

The common trend towards the individualisation of learning (European Commission, 2020a) and employment (Genov, 2014) gives guidance and validation an important role in supporting individuals in their effective navigation of the increasing number of transitions between education, employment and unemployment. The individualisation of learning opportunities requires equal individualisation in the support provided through guidance and validation services (ELGPN, 2012; Cedefop, 2019) that consider the heterogeneous backgrounds, prior experiences and needs of individuals in order to maximise the effectiveness of the services (ELGPN, 2012; Cedefop, 2019; Cedefop, 2020).

On 1 July 2020, the European Commission published the Communication on the European skills agenda (European Commission, 2020a) with 12 actions for the next 5 years to 'help individuals and business develop more and better skills' (ibid.). Guidance and validation are explicitly mentioned as important elements in realising several of these actions. They are especially relevant as elements to encourage and facilitate participation in education and training as well as enhancing lifelong learning. In the proposal for individual learning accounts as a way to empower people to build skills and manage labour market transitions throughout life, guidance and validation constitute relevant supporting services (European Commission, 2020a).

Within the skills agenda, the proposal for a communication 'A bridge to jobs – Reinforcing the Youth Guarantee' is linked to the continuing implementation of the European Pillar of Social Rights and specifically the active support to employment (European Commission, 2020b). The proposal is structured in four phases: mapping, outreach, preparation and offer. Guidance and validation are important elements in the preparation phase. This includes the process of matching

individuals' needs with tailored, individualised, and holistic approaches for a wide range of services (counselling, guidance, mentoring and upskilling) considering individuals' situations, as well as stereotypes related to gender and vulnerable youth (European Commission, 2020b).

The communication proposal on vocational education and training (VET) for sustainable competitiveness, social fairness and resilience (European Commission, 2020c) suggests that high quality lifelong guidance services that use digital means may contribute to raising the attractiveness of VET by providing clear and user-friendly information on learning and career opportunities, as well as on validation opportunities. Validation is also needed to create flexible and progressive personalised VET programmes. Modules or units of learning outcomes acquired through validation could be transferred and stackable, with the aim of obtaining a full/partial qualification or microcredentials ⁽¹⁾.

The interlink between validation and guidance, however, is not new. Already in the Common European principles on the identification and validation of non-formal and informal learning (Council of the European Union, 2004), the provision of guidance, counselling and information about validation systems and opportunities is considered necessary for stakeholders. Since then, most policies in relation to validation have included guidance provision as an important element in the development of validation systems: examples are the Council's Recommendation on validation, 2012, the Conclusions of the Latvian EU Presidency, 2015, and the Estonian EU Presidency, 2017).

Despite progress in the development and implementation of both, career guidance systems and validation of non-formal and informal arrangements, the provision of services remains fragmented in guidance (OECD, 2004; Hooley, 2014; Barnes et al, 2020), as well as in validation (Cedefop; European Commission and ICF, 2019). In most cases, guidance and validation remain separated services at an organisational or institutional level. This increases even further the services' fragmentation and creates asymmetries of information (Cedefop, 2019). In its different updates, the European inventory on validation has explored to what extent, guidance is an element within a validation process. Although there has been some progress, more evident in CVET and adult education between 2016 and 2018, guidance is not often a requirement within validation arrangements, while career guidance provision (in public employment services, in educational

⁽¹⁾ Microcredentials are defined as 'documented statements that acknowledge a person's learning outcomes, which are related to small volumes of learning and that for the user are made visible in a certificate, badge, or endorsement (issued in a digital or paper format)' (European Commission, 2020a).

institutions) tends to be even less connected to validation practices (Cedefop; European Commission and ICF, 2019).

The existing fragmentation hinders the potential and efficiency of both services and makes it difficult for individuals to benefit from them. A coordinated form of the two services may lead to several benefits for the individual, the organisations and the system in general (Cedefop, 2019). An integrated approach of guidance and validation services will contribute to better informed individual career decisions. It will allow for clearer and more tailored information to the specific individual's needs and goals in terms of education, training and labour market pathways. A continuum between the two services would eliminate potential pitfalls and increase the possibility of enabling and empowering individuals to unlock their future. Similarly, coordinated provision of the services will improve efficiency, by increasing synergies, connections and sharing common processes and resources between guidance and validation. At a systemic level, more efficiency will also mean more impact, providing efficiency gains and further possibilities for quality improvement.

In the current context, digital transformation is having a considerable impact on guidance and validation practices. The COVID-19 pandemic has exacerbated the digital transition and career guidance services, which had to adapt to distance service delivery (Cedefop, 2020; Cedefop et al. 2020; OECD, 2021). In this context, all services are changing to a new reality in which ICT becomes an embedded component of the service, not just a different form of service delivery. Barnes and colleagues (2020) include ICT operationalisation as one of the 11 key features of a lifelong guidance (LLG) system in their study of EU practices. They define ICT operationalisation as 'how technology is used and for what purposes in a LLG system' (ibid., p. 7) including four dimensions: the informative, in which ICT tools are used to deliver information; the communicative, in which ICT is used as a medium for one-to-one communication; the collaborative, where it is a medium for facilitating interactive communication and information sharing; and the transformative, in which the emphasis is on transforming guidance provision. In this paper, the authors explore the way(s) that ICT operationalisation might contribute to effective coordination of lifelong guidance and validation of non-formal and informal learning. The focus is mainly on the use of ICT in terms of its transformative potential to render a service that interlinks and works smoothly with validation provision.

CHAPTER 2.

Coordinating lifelong guidance and validation of non-formal and informal learning through ICT operationalisation

Guidance refers to a continuous process that enables citizens at any age and at any point in their lives to identify their capacities, competences and interests, to make educational, training and occupational decisions, and to manage their individual life paths in learning, work and other settings in which those capacities and competences are learned and/or used (Council of the European Union, 2008). It covers a range of individual and collective activities relating to information provision, counselling, competence assessment, and support, as well as the teaching of decision-making and career management skills. This transversal approach reflects the different policy contexts (education, training, employment) in which guidance may operate. Validation of non-formal and informal learning is defined as the process of confirmation by an authorised body that an individual has acquired learning outcomes measured against a relevant standard. The process consists of four distinct phases: identification, documentation, assessment and certification (Council of the European Union, 2012).

The Nordic Network for Adult Learning (2015) indicates that guidance and validation share several common aims, including self-awareness, decision-making, career management, enhanced employability and flexibility; they also support empowerment, social awareness and democratisation. Cedefop (2019) further elaborated on the relationship of career lifelong guidance activities and validation phases. The identification and documentation phases of validation resemble the beginning of the counselling process within career services. Guidance starts with clarifying the needs, goals, feelings and expectations of the individuals in order to gain self-awareness and build and/or maintain a positive self-image. During this screening/profiling process, career counsellors use, *inter alia*, open questions and techniques that promote reflection, as well as assessment tools and competence tests (standardised or not) to support individuals in becoming aware of their strengths and weaknesses, defining their life-career goals and exploring the available alternatives and strategies to achieve these goals. The content of this assessment may refer to prior personal, educational and vocational experiences and trajectories that contributed to the general development of individuals' competences and profiles. The outputs of this initial phase, along with other documents that individuals may create or introduce during the process, may

support not only the development of a portfolio, but also the necessary skills for critically reviewing it and updating with new additions. Similarly, the aim of the identification and documentation phases of validation is to increase individuals' awareness around their prior learning achievements and provide evidence of the learning outcomes that they have acquired (Cedefop, 2019).

These shared goals of guidance and validation may be manifested through three different forms of cooperation, depending on the level of coordination between the two services. The first two forms include (at least) two distinct and independent organisations that have established formal or an informal cooperation, while the third form describes the integration of services within one organisation. Table 1 presents the characteristic features of those forms (Cedefop, 2019).

Table 1. **Features of cooperation forms**

	Features
Formal cooperation	<ul style="list-style-type: none"> • Takes place between independent services • Cooperation is supported through a shared project/operational framework and/or a network of regional/sectoral stakeholders • Guidance is typically provided before and during validation; some cases may have a follow-up • Referrals between services are systematic or formalised (following standardised procedures) • Both services may use common qualifications or competence standards, occupational standards or other reference frameworks, increasing the coherence between their outputs and enabling information sharing/transfer. The latter can be supported through a digital system
Informal cooperation	<ul style="list-style-type: none"> • No formal link or institutional cooperation exists between services • Individual practitioners may cooperate on an informal basis; for instance, guidance practitioners may recommend clients to undergo a validation procedure • Guidance is usually provided before validation and does not include a follow-up of clients • Sometimes guidance is fragmented (delivered by practitioners from different organisations) • Although outputs produced within guidance do not have a formal value for the validation process, they can develop the client's CMS and support further choices related to learning and work
Integration	<ul style="list-style-type: none"> • Services are typically provided by a single organisation and integration can be enshrined in legislation or be based on lengthy experience in carrying out VNIL • Processes, procedures and methods are clearly defined and harmonised and referrals between services are not relevant as guidance and validation are integrated • Guidance is provided before and during, sometimes also after validation • Outputs can have varying coherence: in some cases, they are based on common qualifications or competence standards, occupational standards or other reference frameworks; in others, they are used to inform the next stage • Guidance practitioners have an important role because they are involved at each step of the practice and may sometimes act as mentors for the beneficiaries

Source: Cedefop, 2019.

2.1. The use of ICT as a coordination tool

The utilisation of ICT in lifelong guidance may take the form of interactive online tools, online wikis, mobile applications, social media utilisation and e-portfolios. These serve various purposes including online counselling provision, personalised information storage, connection with third parties (LMI, PES, etc) and their combination with offline elements (Cedefop, 2018). The use of ICT in validation mainly focuses on the identification and documentation of competences but might also include assessment and, in some cases, certification (Luomi Messerer, 2019). In some countries, the identification phase is supported by the use of standardised ICT tools for self-assessment. Even though these tools may have the potential to reach more people with fewer costs, they may fail to identify and value individuals' competences (Cedefop, 2015), so it is common that this phase requires the involvement of counsellors in order to support individuals with the appropriate options and tools.

At an organisational level, ICT systems and tools contribute to the coherence of the 'guidance-validation' coordination, assisting the two-way flow of information in order to support individuals. Given that guidance and validation may function supplementary to each other, some outputs of specific activities of the one service (e.g., skills identification) may feed the process of the other service (skills assessment). For instance, through the development of e-portfolios, competences may be documented against some predefined assessment standards to support the transferability of this work to the certification phase of the validation process (Cedefop, 2019).

CHAPTER 3.

Methodology

Against this background, and considering the current policy developments (European Commission, 2020a; 2020b; 2020c), the paper analysed 12 practices to illustrate the potential for connecting guidance with validation through the use of ICT, embedded in national practices. The 12 practices analysed relate to guidance and validation to different extents, with few focusing on guidance provision while others focus more on validation. They were all selected as examples for the interaction of validation and guidance, providing different forms of coordination between the two services (Cedefop, 2019).

Table 2 presents an overview of the practices, along with the key challenges that each practice addresses and their target groups.

Table 2. **Overview of the selected practices**

Overview of the selected practices		
Practices	Key challenges addressed	Target groups
<i>Du kannst was!</i> (Austria)	<ul style="list-style-type: none"> Upskilling with the aim of obtaining an apprenticeship qualification Promoting the integration of migrants, refugees, minorities, people with special needs 	Employed, unemployed, immigrants, refugees, minorities, people with special needs
CVV Education for Everybody Centre (Czechia)	<ul style="list-style-type: none"> Providing affordable career guidance to all who need it Providing a regional accurate and up-to-date list of learning opportunities (courses) for adults 	All people 14+, employed, unemployed, young people, guidance counsellors, school students, parents
SIMHE Metropolia (Finland)	<ul style="list-style-type: none"> Improving the identification and recognition of prior learning among highly educated immigrants Supporting immigrants to higher education and/or into national/regional labour markets 	Immigrants
TAKK (Finland)	<ul style="list-style-type: none"> Ensuring that labour market has skilled and competent workers and strengthening social cohesion & equity Supporting adults to acquire a competence-based qualification (cbq), a formal vocational qualification 	Employed, immigrants, unemployed, adults

Bilan de compétences (France)	<ul style="list-style-type: none"> Maintaining balance between labour supply and demand Supporting individuals to develop an action plan that is matched to current labour market needs 	Employed, employed looking for a career change, unemployed, employers
IDAN (Iceland)	<ul style="list-style-type: none"> Providing appropriate career guidance and encouraging beneficiaries to complete studies based on VPL results Raising confidence in learning that shortens study pathways 	Employed, immigrants, unemployed
Upskilling through PES (Italy)	<ul style="list-style-type: none"> Upskilling of unemployed low-skilled/qualified adults registered at PES 	Adults, unemployed, low-skilled, qualified
LeerWerkLoketten (Netherlands)	<ul style="list-style-type: none"> Promoting cooperation among employers, education/training providers to support individuals Promoting work-based learning, career guidance and validation schemes for skills and competence assessment 	Employed, employed looking for a career change, employers, higher education students, school students/parents, immigrants, unemployed, young people
Career guidance and VET exam (Poland)	<ul style="list-style-type: none"> Upskilling adults by obtaining a vocational qualification through exams Recognising competences acquired in other than school contexts, either via training or professional work 	Immigrants, unemployed
Qualifica (Portugal)	<ul style="list-style-type: none"> Qualifying and upskilling the population by promoting adult learning leading to formal certification Raising the rates of participation in formal, non-formal and informal learning 	Low-skilled adults (employed or unemployed), NEETS
Branschvalideringen (Sweden)	<ul style="list-style-type: none"> Addressing skills shortcomings and bottlenecks in sectors and trades Ensuring a competent workforce with knowledge, skills and competences that meet the needs of the labour market 	Employed, employed looking for a career change, immigrants, unemployed
My WoW (UK, Scotland)	<ul style="list-style-type: none"> Web-based career information and advice platform for developing career management skills (CMS) Promoting self-assessment (interests, skills and strengths) 	Young people and adults, immigrants, people that want to change their careers, refugees, parents, teachers

Source: Authors, based on Cedefop (2019).

CHAPTER 4.

Dimensions and functions of ICT operationalisation

Based on the analysis of the 12 practices ⁽²⁾, common characteristics and ICT components were identified and classified in broader categories as illustrated in Table 3. Eight categories, with associated functions of ICT operationalisation, were inductively developed. However, these categories should not be considered as mutually exclusive, rather as supplementing or extending each other's ICT functions. For example, administrative systems that are used for registration might be a necessary element for personalisation tools; also, self-assessment tools might be featured together with personalisation tools or specific-purpose software. The point here is that the different elements might contribute together or individually to better coordination of the services. In an ideal-case scenario, all functions would be interconnected.

Table 3. **Dimensions and functions of ICT operationalisation**

Categories	Functions
Service provision tools	<ul style="list-style-type: none">• Information provision• Reaching out/making initial contact• Delivery of services• Dissemination and promotion of services
Administrative systems	<ul style="list-style-type: none">• Registration and submission of applications• Access to resources (tools and services)• Creation of a register of individuals' data• Aggregation of statistical data
Data transfer systems	<ul style="list-style-type: none">• Maintenance of online storage for resources (internal level)• Information and outputs transfer of previous phases to the upcoming (internal level)• Signposting individuals to other services and institutions (external level)• Interconnecting the organisational system with other information systems (external level)
Databases	<ul style="list-style-type: none">• Collation of available learning and validation opportunities• Aggregation of labour market information (e.g. job vacancies)• Management of education and training provision• Cross-check of individuals' data (e.g. completed courses)

⁽²⁾ The information derives from the studies indexed in the Annex; they were carried out by a consortium led by 3s Unternehmensberatung GmbH, along with includes ICF S.A., under Cedefop's framework service contract No 2017-0150/AO/DLE/EVGAR-PMD/Validation&Guidance/003/17.

Categories	Functions
Specific-purpose software	<ul style="list-style-type: none"> • Individual screening (personal data, prior learning experiences) • Quantitative profiling of individuals • Documentation of information and data • Access to outputs provided to individuals
Self-assessment tools	<ul style="list-style-type: none"> • Competence tests • Career interests and profiles test • Self-assessment against specific standards/learning outcomes • Self-assessment in relation to current needs and future arrangements
Personalisation tools	<ul style="list-style-type: none"> • Portfolio development and maintenance • Development of individualisation plans • Monitoring/tracking progress during a process • Ownership and repurposing of data
Follow-up and Monitoring	<ul style="list-style-type: none"> • Standardised satisfaction questionnaires/surveys (web-based) • Follow-up phone interviews • Internal data/information pools • Broader organisational reviews and evaluations

Source: Authors.

4.1. Service provision tools

A first use of ICT is as a way of providing services. Service provision tools refer to the use of emails, telephone, websites and social media in order to achieve and improve communication, offer information and aid service provision to those interested. Kettunen (2017, 2021) differentiates five general approaches to ICT and social media in guidance as a service provision tool: a passive approach, an information approach, a communication approach, collaborative career exploration and co-careering. In most cases reviewed, it seems that an information or communication approach is more common, and there is limited evidence of co-careering approaches; however, further in-depth study of the practices would be required to provide conclusive evidence. The focus in this section is limited to the way guidance is accessed and provided using ICT, permitting delivering both guidance and validation services.

Emails tends to be the main form for initial contact in most of the practices, sometimes serving as an official point of departure for the provision of the service, as in the case of SIMHE. The web pages might have specific applications that permit some interaction with the user, providing initial steps in the guidance and validation process, which is then evaluated by the professional counsellor. In this way, face-to-face guidance delivery is normally combined with delivery of services via email or other remote forms. The CVV practice, for example, offers guidance through emails. As with other services, support is provided free of charge within 5 days, while privacy and individual expert responses are guaranteed. CVV also runs

a web-based helpline, where anyone can send an inquiry about courses or validation opportunities. It offers individually tailored responses (never generic/automatic or templates) and its main function is to guide through the options available, not to provide ready-made answers or advice. In the IDAN practice, guidance and/or validation practitioners assist individuals during the documentation phase in describing their work, education and leisure time experiences in a portfolio. This support may be delivered through emails and telephone conversations.

In the SIMHE-Metropolia practice, individuals are able to participate in the guidance and counselling services by email service (contact, information, mapping the situation) too, but also by personal guidance discussions (face-to-face) and/or participating in the Guidance generala lectures, a form of group guidance. This is also evident in the activities of the Leren en Werken practice. In the SIMHE-Metropolia practice, guidance counsellors produce a summary of the personal guidance discussion; this includes, for example, key findings, agreements on next steps and individual's own aims, as well as links to relevant sources of information and other necessary information. This summary is written by counsellors in a non-standardised form; it can be sent via email to the participant, who can use it for the imminent RPL process.

The use of social media has proved a useful channel in spreading the news about some of the practices. Former, highly satisfied individuals seem to spread the message among their own networks. Another way of disseminating information on the services is evident in the My WoW resource. School pupils that are selected by participating schools act as My WoW ambassadors in order to promote the resource to parents, teachers and other pupils.

4.2. Administrative systems

Administrative systems refer to digital systems and web applications that allow individuals to register and/or submit their applications in order to receive a service. They entail the creation and maintenance of user registries to ensure customer service and aggregate statistical data. These are common in any services and often used in the examples explored. They capture a variety of information from the individual and might be used as a system to register in the service or might provide records of progress and the individual's achievements.

Potential candidates at TAKK use an electronic application system and web-based application forms to apply for a competence-based qualification. The form includes personal information, contact information, educational background, work experience, current working status, employer, profession and a description of the motivation for the desired studies. In the Polish Career guidance and VET exam

practice, adults seeking employment may ask advice from the *poviat* labour office of their place of residence. They need to register at the labour office in person or by filling in an online questionnaire. At the end of the registration process, a date is set for a meeting with a client counsellor. In the My WoW resource, one of the available means for individual registration is completed online, where users set up an individual account that allows independent access to some of the tools.

In the SIMHE-Metropolia practice, a register of customer data is maintained for customer service and compilation of statistics. The register includes personal data (gender, nationality, age, mother tongue, field of previous studies and level of education), communication data (email address) and services' data (initial contact, dates, forms of services, delivering organisation, participation in other SIMHE services). Another indicative example of a register is the SIGO system (*Sistema Integrado de Informação e Gestão da Oferta Educativa e Formativa*). The *Qualifica* practitioners register individuals in SIGO, which issues certificates of completion of successful training courses and automatically registers it in the individual's qualifications passport.

4.3. Data transfer systems

Data transfer systems refer to online systems that are used to ensure and enhance data transfer among the professionals of the organisation (internal level), as well as between other partners/institutions/information systems (external level) based on their role and degree of engagement. Such systems may contribute to the coherence of the process by transferring the information and outputs of previous phases to the upcoming ones, allowing for a more adequate link between validation and guidance service provision, as information of the two processes is shared in a common space.

For instance, the data transfer system in the *Du Kannst was!* practice refers to online storage rooms where the staff has access to shared resources, such as the DKW checklists. The transferring checklist, a self-evaluation sheet based on the relevant occupational profile to explore whether participants meet the minimum criteria for successful participation in the next phases of the process (identification and documentation) is placed in those storage rooms, so the info can be used for both services. The TAKK practice utilises a special digital system, *StudentaPlus*, to ensure the accurate and effective transfer of student-related information and documents that will be used during all phases of the studies within the TAKK.

Sometimes, the transfer systems are used to share data and information with external partners and institutions. For instance, in the *Du Kannst was!* practice, their storage space facility allows practitioners to signpost individuals to other services and institutions, while in TAKK, even though all relevant parties have

access to the *StudentaPlus* system, they access certain parts of the documents, depending on their role. In the Upskilling through PES practice, the profiling of the client is uploaded in the ICT-based system of the PES (also linked to the ANPAL national platform) and remains available until the individual is discharged by the PES. One of the criteria for the accreditation of the field local offices is to have an appropriate ICT infrastructure that ensures the connection to the two relevant information systems ⁽³⁾ (e.g. regional employment platforms) used in active labour policies. The analysis of evidence undertaken during the validation process, the evidence gathered during the verification, and the results of the analysis are uploaded in the regional platform for issuing the certifications according to a specific format.

4.4. Databases

Databases can be considered as structured sets of data that are stored digitally and are accessible in various ways. In this paper, this category refers to the administration and/or use of databases related to the available learning and validation opportunities, as well as databases of labour market information (job vacancies). Databases related to the administrative systems detailed above are not considered here, although the interaction of administrative data with such databases is used to meet individual needs better.

The CVV practice administers a database of learning opportunities and runs a helpline related to it, for adults in the South Moravian Region. It uses this online database to recommend the most relevant and appropriate courses to clients and encourage them to contact the respective awarding body to have their learning validated. Another method of supporting clients to find employment includes the use of job portals and the NSK register. The register is the main tool of the VNFIL system and provides information on the vocational qualifications (assessment standards) currently included in the register (1253 vocational qualifications as of September 2018) as well as on how to and where to apply for examination (for validation of prior learning).

In the Qualifica practice, the diagnosis consists of basic and comprehensive screening to build the profiles of learners regarding their prior education and professional experiences, as well as their motivations, self-awareness and expectations. Practitioners collect information and documents to make a brief

⁽³⁾ The two relevant regional information systems are the SILER (*Sistema Informativo del Lavoro della Regione Emilia-Romagna*, labour information system Emilia-Romagna) and the SIFER (*Sistema Informativo della Formazione Emilia-Romagna*, vocational training information system Emilia-Romagna).

screening to insert data in the SIGO (*Sistema Integrado de Informação e Gestão da Oferta Educativa e Formativa*), an online database of information that supports the management of education and training provision, introduced by the New opportunities initiative.

In Iceland, during the screening phase of the IÐAN practice, career counsellors meet each individual to get familiar with his/her background, present the intake criteria, and explore his/her prior formal learning and eligibility for the VPL process. Individuals are expected to complete a self-assessment list for the sector at hand, while an overview of prior learning and the organisation of subjects within the curricula of the profession is reviewed. The courses that have been already completed by the candidate are deleted, based on information from INNA, the national database for upper secondary schools.

4.5. Specific-purpose software

The use of software for specific purposes is evident in delivering guidance and validation services and strengthens the coordination between them. Based on the reviewed practices, the specific purposes include basic screening and quantitative profiling of individuals, the documentation of information and data, as well as tracking functions, including access to the outputs of the process.

The Upskilling through PES practice consists of a range of activities including basic screening and quantitative profiling. The individual's screening is obtained through the data provided by the user when submitting the declaration of immediate availability to work (*Dichiarazione Immediata Disponibilità, DID*). This declaration can be completed directly online at the National Agency for Active Labour Policies (ANPAL) portal or at the PES with the help of the operator, and includes individual characteristics of the beneficiary (gender, age, education level, unemployment state). Similarly, during the diagnosis sessions in the Qualifica practice, guidance practitioners use the Qualifica passport. This online tool records the past educational and training experiences of adult learners in order to suggest possible education and training pathways in a flexible way, depending on the certification and qualifications that the individual can obtain and the academic and professional progress that can be achieved.

In the Upskilling through PES, there is specific software developed by ANPAL to perform quantitative profiling. This software takes into account both the individual characteristics of the beneficiary as stated in the DID and the main features of the local labour market (occupational rate, enterprise density, etc.) to produce a coefficient on the probability of the individual to remain unemployed and calculates the overall level of disadvantage. The resulting personal employability

profile indicates the distance of the beneficiary to the labour market ranging from 0, (ready to integrate the labour market) to 1 (furthest away from integrating to the labour market).

Another function featured in the Italian practice, allows individuals to have access to outputs from the practice, such as the personalised service agreement and an abilities and knowledge sheet. In the SIMHE-Metropolia practice, the client receives the results of the RPL process and the mapping of competences, in a completed standardised form. This form includes the individual's information on educational background and the results of competences mapping against qualification requirements, including the assessment of professional language skills.

4.6. Self- assessment tools

Self-assessment tools include digital tools in the form of tests, quizzes and questionnaires that explore an individual's competences, skills or, professional interests against specific standards and learning outcomes. The self- assessment tools not only support individuals in improving their self-awareness, but also inform the professionals involved (including guidance and/or validation practitioners) about the individuals' needs and hence the future arrangements and actions that need to be undertaken.

In the TAKK practice, individuals can demonstrate their vocational skills in competence tests, followed by preparatory training towards acquiring a qualification. One of the available options is an online tool that can be used for assessing competences. In the *Leren en Werken* practice, individuals may fill in their CV at the web-based portal and complete a competence test in order to enquire about available retraining options or courses where they can obtain exceptions. In the My WoW resource, under the heading of 'strengths', pupils undertake a quiz in which they respond to 72 statements relating to how well and how often they do certain tasks or activities, and how much they enjoy these tasks or activities. Upon completion, pupils can download a personalised report confirming main strengths and frequency of competence use.

In the Career guidance and VET exam practice the career counsellor might use the professional interest questionnaire KZZ (*kwestionariusz zainteresowań zawodowych*) during the skills audit. KZZ, developed by the Ministry of Labour and adjusted to the Polish labour market and cultural norms, is a diagnostic tool that analyses professional preferences and interests through approximately 200 closed questions in the form of a digitalised test. In the My WoW practice, individuals are encouraged to create a profile for their interests, skills and strengths using a range

of activities based on different datasets. User profiles are mapped against different predefined career profiles so that the individual can review career or subject choices, alone or with the support of career advisers.

In the IÐAN practice, a self-assessment tool that the candidate can complete on paper or electronically is used. At the beginning of the process, the tool asks for prior learning, courses taken, jobs and leisure-time activities. Then it focuses on self-assessment against specific standards/learning outcomes. Once completed, the self-assessment is handed over to the assessors to review and use during the assessment interview, in which the counsellor presents to the individual an overview of the curricula standards/learning outcomes recorded. Another example of a self-assessment process can be found in the Branchvalideringen practice, in which individuals undertake self-assessment through a tool that can be downloaded from the PES website. The self-assessment targets sectors as well as individual traits, while it determines whether there is a basis for validation referral.

4.7. Personalisation tools

Personalisation tools refer to digital tools that support the process of creating, maintaining and promoting tailored outputs of guidance and/or validation services, such as portfolios and individualisation plans. These tools allow the monitoring, control and repurposing of individuals' data throughout the process.

In the *Du Kannst was!* practice, partners systematically refer suitable candidates to each other, a process supported through clearly documented screening and testing procedures that build on each other; for instance, intermediate outputs (e.g., initial check-list, practical screening, competence check) are progressively reinforced in the development of a comprehensive portfolio and used to support the certification process as well as further measures. Similarly, based on the comprehensive screening in the CVV practice, possible steps are proposed and discussed, including the creation of a portfolio to identify and document skills and competences. A similar approach is adopted in the Qualifica practice, in which learning maps, diaries, and forms that are completed by individuals, become a part of the portfolio of each learner. Individuals receive support in these tasks, the majority completed using computers supplied at the Qualifica centre. In the IÐAN practice, guidance and/or validation practitioners assist individuals in describing their work, education and leisure time experiences in a portfolio, during the documentation phase.

During the interview in the TAKK practice, the applicant is provided with relevant guidance and information on next steps. All this information is documented

in an electronic student administration system and, if the candidate receives a study place at TAKK, the results of the interview can be included in the individualisation plan. The beneficiaries have access to this system, so they can check what their study plan looks like, what is coming up next, and which part has been already completed. In this way, individuals can monitor and track their current status and receive information on future arrangements.

In the Branchvalideringen practice, those that are registered at a job centre as jobseekers may undergo a so-called *branschvalidering* through a competence mapping procedure. A digital development plan is elaborated for each individual, with all the actions that need to be taken (including validation), while progress is constantly checked, until the stipulated goals are achieved. One of the outputs of the *My WoW* practice is the career development plan, confirming specific tasks or action points as well as the progress made by individual beneficiaries/users. The career development plan records decisions taken, and actions agreed, during a one-to-one career guidance session and reflects on the progress of the individual in developing specific career management skills (CMS).

The Leren en Werken practice foresees the mapping of a personalised roadmap for validation including self-assessment and skills-tests, while for guidance it includes mentoring/tutoring, basic profiling and brief screening. The most important tools refer to intake assessment, e-portfolio, portfolio training, competence tests, assessments, and work spot-observations. The e-portfolio is an effective way to let individuals keep control over their data, while at the same time they can use it when they contact institutions like VET-schools, universities, volunteering organisations, and companies. Within the *My WoW* practice, individuals may repurpose some elements of their data, for example by using skills statements within the CV builder or exporting a CV or strengths report. This element will be additionally useful following the imminent introduction of the extended skills dashboard, potentially forming the basis of a portfolio, which might then inform subsequent activities.

4.8. Follow-up and monitoring

ICT might also be used to improve monitoring and quality assurance mechanisms. This might include standardised satisfaction questionnaires, follow-up interviews and the use of internal data pools, as well as organisation reviews for collecting both formative and summative feedback.

In the SIMHE-Metropolia practice, quality assurance is arranged through regular feedback collected via web-based questionnaires addressed to individuals and cooperating organisations. Based on a standard satisfaction questionnaire,

feedback is welcomed both during and after the process covering both services (guidance and validation). In the *My WoW* practice, individual beneficiaries are requested to provide evaluative feedback on service provision, most often through an electronic feedback questionnaire. Additionally, in the *IDAN* practice, once a year those who have completed VPL receive a web-based survey on their satisfaction with the process.

In the *Bilan de compétences* practice, 6 months following delivery of the services, practitioners follow up with their clients/beneficiaries through a phone interview, in order to collect feedback. This is also evident in the *IDAN* practice, in which the professionals involved follow up with the individuals to ensure that the latter will complete their studies and obtain their full qualifications in a certified trade.

In the *Du Kannst was!* practice, the referral process is quality assured by providing sufficient information related to the current projects. A cloud resource serves as an information pool for all practitioners, with detail of timings for upcoming workshops and other news regarding the project. Another form of an internal data pool, but with different content, is evident in the *My WoW* practice. Quality assurance of the *My WoW* resource relies on user data, such as registration numbers and specific patterns of use that are monitored with a view to inform future developments. However, feedback is also collected when reviewing school partnership agreements (partnerships with individual schools that govern plans for the delivery of CIAG and CMS and which use the *My WoW* resource) or as a part of broader service evaluation of the SDS (Skills Development Scotland).

CHAPTER 5.

Conclusions

These illustrations of ICT operationalisation in guidance and validation practices help in understanding better how ICT can contribute to a better coordination of the two services. In particular, ICT operationalisation can contribute to better coordination of the two areas through improving three elements: comprehensiveness, coherence and quality (Cedefop, 2019).

Comprehensiveness refers to clear linkages between the two services, supported by an overarching policy strategy and/or a single legal framework. It is mainly manifested by defining roles, tasks and responsibilities, developing guidelines and operational frameworks, and allocating both human and financial resources. It also implies a holistic approach to both services, entailing information and guidance provision that support individuals throughout the whole validation process (Cedefop, 2019). Based on the analysis of the practices, the ICT categories that might contribute most to the comprehensiveness of the services are the administrative systems, the databases and the service provision tools.

The use of digital administrative systems can provide a single point of access to individuals, allowing them to register in the services, submit their applications and make use of the online resources. Such systems might promote access for a wide range of individuals, providing them with the opportunity to receive services by different means. This constitutes a potential easy way of connecting the two services. Service provision tools, such as emails, websites, telephone helplines and social media are used to achieve and improve communication, offer information, and facilitate services provision to those interested; follow up can help in making the service comprehensive. Databases offer a common way to aggregate and manage labour market information and learning resources, that can enrich and broaden the services with current opportunities and support individuals effectively.

Coherence is referred to here as the continuity across the two services and in the overall process, where the outputs produced on each stage, build on the previous and are considered as an input for the following activities and/or stages. In this way, information traceability is guaranteed, while duplication of work is prevented (Cedefop, 2019). The illustrated practices suggest that the ICT categories that may most contribute to coherence include data transfer systems, the specific purpose software, self-assessment tools, as well as personalisation tools, all interconnected through an adequate administrative registration system and supporting databases.

Data transfer systems are the practice most used to promote coherence between the two services. Either internal or external, transfer systems contribute to the connectivity of different professionals, stages/phases, services and information systems to ensure that the previous work completed in earlier stages will be considered in the upcoming ones (Cedefop, 2019). Specific purpose software is mostly associated with profiling and documentation; self-assessment tools, as the name suggests, cover assessment that improves individuals' self-awareness. Personalisation tools partly serve the purpose of documentation, through the creation of portfolios, while at the same time offering individuals the opportunity to monitor and track their progress, enhancing their self-regulation and sense of ownership during the process.

To remain coherent, these digital tools require the use of common qualifications, competence standards, occupational standards or other reference frameworks (Cedefop, 2019). This 'common language' partially reflects the organisational and semantic interoperability (Bruno et al., 2020) that needs to be in place to ensure that the existing processes, data and information may be of use in the subsequent phases. In this way, professionals and individuals may use the outputs of each process and minimise the resources needed (human, temporal, financial); they may also have a preventive impact by limiting the possibilities of service discrepancies and individual dropout. These frameworks and 'common language' can be supported with databases or thesaurus online.

Common standards are also associated with quality assurance. Elaborating common guidelines and quality criteria may strengthen the effectiveness of the services, while data collection and monitoring may provide performance evidence (Cedefop, 2019). Based on the illustrated practices, administrative systems may provide monitoring functions that are manifested through the creation of registries and the collection of statistical data. Databases are also used to manage education and training provision in the organisations, and to provide interoperability with other systems to cross-check individuals' data. Established quality assurance mechanisms were evident in the practices reviewed, acting either as enablers or as feedback channels. Internal data pools contribute to the smooth operation of services by providing information such as the scheduling of upcoming activities, registration numbers and specific patterns of use that inform future developments, while broader organisation evaluations offer feedback collection. This is largely done through standardised satisfaction web-based questionnaires/surveys (Barnes et al., 2020), while follow-up phone interviews were also in place. Through these feedback mechanisms, organisations may promote their understanding and ownership on the strengths and weaknesses of services provision, and plan advancements to increase their effectiveness.

The ICT dimensions and functions identified should not be considered as isolated features, but as complementary. This interoperability of the ICT components is also evident in comprehensiveness, coherence and quality, where those three factors interrelate in coordinated forms of services. ICT tools may have multiple functions that create more coherent, comprehensive, user-centric and qualitative services not only for individuals, but also for the professionals and the organisations involved.

It will be important in this context for countries to map the existing ICT components that are already used in services provision and their functions. Evaluating and identifying ways in which existing ICT infrastructure can be repurposed to extend their functions can promote the comprehensiveness, coherence and impartiality of the services. The categories presented here might serve as a first base to determine the functions in place as well as the potential functions. These analyses should be accompanied by an exploration of the skills and competence requirements for both practitioners and users/clients, especially in terms of digital competences. Equally important will be the provision of adequate training for the practitioners in using those digital tools and embedding them in their daily routines.

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Annex

List of case studies (unpublished)

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BRIDGING LIFELONG GUIDANCE AND VALIDATION OF NON-FORMAL AND INFORMAL LEARNING THROUGH ICT OPERATIONALISATION

In this paper, the authors explore the way(s) that information and communication technologies (ICT) might contribute to effective coordination of lifelong guidance and validation of non-formal and informal learning. Based on 12 national practices, the paper illustrates the potential for connecting guidance with validation by embedding ICT tools in practice. The 12 practices were selected as examples of the interaction of validation and guidance, providing different forms of coordination between the two services. Eight main categories of ICT function are identified and the paper examines in what way these might contribute to the coordination of validation and guidance by improving their comprehensiveness, coherence and quality.



Europe 123, Thessaloniki (Pylea), GREECE
Postal: Cedefop service post, 570 01 Themi, GREECE
Tel. +30 2310490111, Fax +30 2310490020
Email: info@cedefop.europa.eu

www.cedefop.europa.eu



Publications Office
of the European Union



ISBN 978-92-896-3290-4
9 789289 632904