European Commission

Digital Skills and Jobs Coalition

Digital Skills certification and DigComp implementation in Austria

Outcome paper

Community-led event

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Digital skills for all

Digital skills for the labour force

Digital skills for ICT professionals

Digital skills in education

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COMMUNITY-LED EVENT - DIGITAL SKILLS CERTIFICATION AND DIGCOMP IMPLEMENTATION IN AUSTRIA, 13TH & 27TH JANUARY 2021

ORGANISED BY THE AUSTRIAN NATIONAL DIGITAL SKILLS AND JOBS COALITION

1 Executive summary

The European Digital Skills and Jobs Coalition supports actions to reduce the digital skills gap at a national level, as carried out by National Digital Skills and Jobs Coalitions of which there are 25. The Community-led Events jointly organised by National Coalitions and the DSJC aim to engage members, broaden the stakeholder network, and provide new insights and contributions to specific relevant topics and themes.

The Austrian National Coalition is currently led by the Austrian Federal Ministry of Digital and Economic Affairs and supported by fit4internet, a non-partisan and independent association with government support who is also a member of the European Digital Skills and Jobs Coalition. Their objective is to enable the competent use of digital technologies and ensuring broad participation of the entire society in digitalisation. fit4internet works in close cooperation with companies, institutions and organisations and functions as a platform that has committed itself to improving digital competences in Austria.

One of their particular areas of work within the National Coalition is qualifying and quantifying digital literacy among the Austrian population and assisting citizens in assessing their digital skills. As part of this, fit4internet has been working to establish and implement a national digital skills certification framework (DigComp 2.2 AT), based on the European DigComp framework. They therefore called on Austrian and European digital skills actors to come together and provide inputs on their implementation of digital skills certification in Austria, particularly in the post-COVID landscape as part of a Community-led Event.

The Austrian Community-led Event has provided a great example of cooperation between all actors in the national digital skills community, public, private or third sector, together with an opportunity to learn lessons from other European countries on the topic of teaching digital skills and certifying these.

1.1 The role of digital skills and certifying them

The COVID-19 crisis and subsequent lockdowns have proven the importance of digital tools, and the need to equip all Europeans with the digital skills to be able to navigate the online medium efficiently. Global demand for online courses has increased by 6 times in March-April 2020, compared to the same period from 2019. In order to ensure coherence, it is essential to combine the training offered in online courses with standardised certification.

Several frameworks, methodologies and technologies have been developed by the EU, culminating with the Digital Competence Framework (DigComp). The Austrian National Coalition has been working to adapt the DigComp to the national context, by creating online self-assessment tools inspired by this framework. This will be a cornerstone of the €700 M

'Corona Jobs Offensive', a national upskilling programme aiming to reach almost 100,000 jobseekers.

Along with the Corona Jobs Offensive, several other initiatives for supporting the Labour Force in acquiring the digital competences they need were highlighted:

- Future.Apprenticeship.Austria,
- SAP upskilling programmes,
- ETC cloud computing training.

The key points that digital certification schemes are recommended to cover are:

- Access to all, ensuring inclusion through education and overcoming language or other barriers which add fuel to the fire of the problem of lack of digital infrastructure.
- Supporting companies, particularly SMEs, in achieving digital transformation through upskilling all of their staff, not just the IT departments.
- Adapting examinations and the subsequent certificate formats to the specific needs of each target group by age, occupation, etc.
- At the same time, applying a standardised approach, reproducible across sectors and borders, which is consistent with the European DigComp approach.

The concrete recommendations of participants and speakers to the event for successful digital upskilling and reskilling actions include:

- Starting digital skills training from an early stage in the education system.
- Ensuring the educational system is inclusive for all.
- Working together with companies, especially SMEs in upskilling their workforce.
- Offering certificates as a flexible option to validate the skills learned.
- Collaborative work between all public and private actors to ensure the digital nativeness of Austrians.
- Collaborating with vocational or dual apprenticeship training initiatives.

1.2 Lessons learned from implementing DigComp in Austria and beyond

The example of the implementation of DigComp in Spain provides some invaluable lessons to ensure the success of this process in Austria:

- All stakeholders need to be involved at all stages of the process, particularly at the beginning of the implementation.
- Reuse, reshape and share, consulting existing European associations and platforms that have already implemented such certification frameworks.
- Take the required time to build the community.

- Profile the end-users in order to trigger emotions and motivation in them, fostering participation and engagement with the scheme.
- Offer participants the time to self-reflect on their learnings to ensure they stick.

1.3 The way forward for the Austrian National Digital Skills and Jobs Coalition

Based on these learnings from the ongoing process, the Austrian National Coalition will be able to support the diversification of the digital skills certification processes, the validation of the tests, as well as the development and piloting of adapted or completely new formative validation strategies.

National Coalition Members can support the work in this area by:

- Sharing results and activities from their projects.
- Acting as a bridge connecting digital skills education with industry needs.
- Extending the Coalition networks at local, regional, national and international levels.

The Coalition should measure success through both quantitative measures, such as number of digital skills initiatives fostered, as well as qualitative analysis.

2 Introduction

2.1 Community-led Events

The Community-led events are jointly organised by National Digital Skills and Jobs Coalitions and the Digital Skills and Jobs Coalition to support the National Coalition in engaging members, broadening the stakeholder network, and providing new insights and contributions to specific topics and themes relevant to the corresponding National Coalition.

The events consist of two online sessions set two weeks apart: the first outlines the topic and challenges to be debated, through a series of presentations, as well as panel discussions; the second addresses received inputs (through surveys or similar methods) and provides a forum in the form of expert panel discussions.

2.2 Role of the National Digital Skills and Jobs Coalitions

Currently, there are 25 active National Coalitions across the EU. These communities bring together relevant actors at a national level to address digital skills challenges, promote and stimulate initiatives, and support the development and implementation of digital strategies.

Figure 1 EU Member States with active National Coalitions (in dark blue)

Each National Coalition, initiated under the New Skills Agenda, is unique in their structure, activities, and membership. This is due to their local nature where stakeholders have come

together to address the evolving nature of digital skills. The activity within the National Coalitions may be coordinated by either a public body, a business or sectoral association, or a combination of both in a collaborative structure.

They bring together companies, education and training providers, policy makers, trade and business associations, social partners, and any other relevant actors to carry out initiatives aimed at reducing the digital skills gap on a national level.

They carry out actions to strengthen digital skills at a national level such as awareness events, sharing knowledge on digital skills training and upskilling initiatives, or the submission of DSJC pledges.

2.3 The Austrian National Coalition

Austria's National Coalition ("Allianz für digitale Skills und Berufe" in German) was launched in October 2020 in midst of the COVID 19 crisis. Led jointly by the Austrian Ministries for Digital and Economic Affairs (BMDW), Labour (BMA), and Education, Science and Research (BMBWF), the coalition aims at addressing important fields of action for digital qualification to increase the digital resilience of society, companies and public administration.

Therefore, building basic digital skills for all job profiles is highly ranked on the agenda. Further focus areas are improving advanced skills in data science, cyber security and e-commerce.

The main responsible Federal Ministers, Margarete Schramböck, Martin Kocher and Heinz Faßmann, explicitly see the coalition as an actor to help re-qualify workers who lost their jobs during the pandemic towards an ICT career and build on broad cross-ministries-collaborations. The work of the Coalition is also expected to facilitate exchange within different regions of Austria, as well as with other National Coalitions, on the topic of digital skills and jobs.

Another founding member and key supporter of the National Coalition is fit4internet, a non-partisan and independent association with the objective of qualifying and quantifying digital literacy among the Austrian population. Their primary goal is to enable the competent use of digital technologies and ensure a broad participation of the entire society in the digitalisation process. fit4internet works in close cooperation with companies, institutions and organisations and functions as a platform that has committed itself to raising digital competences in Austria. The initiative was launched with support from the Austrian government in 2019 and confirmed as the Austrian National Digital Skills and Jobs Coalition in February 2020.

2.4 DigComp in Austria

fit4internet has been working to establish a national digital skills certification framework (DigComp 2.2 AT), based on the European DigComp framework in collaboration with the three federal ministries BMDW, BMA and BMBWF. The aim is to serve as a springboard for upskilling

and reskilling activities to support the Austrian labour force and their needs, as well as improving the general digital skills of the overall population.

2.5 Expected event outcomes

With this in mind, fit4internet called on Austrian and European digital skills actors to come together and provide inputs on their implementation of DigComp and digital skills certification in general in Austria, particularly in the post-COVID landscape in the form of a Community-led Event, organised in cooperation with the European Digital Skills and Jobs Coalition in two online sessions on the 13th and 27th of January 2021.

The event attendees were mostly from Austria (75%), 50% of which came from within the Vienna region. In terms of priorities, the participants were mostly focused on three of the DSJC target groups: All Citizens (39%), Labour Force (33%) and Education (23%), with a small fraction of respondent organisations working on ICT Specialist Skills (5%).

Figure 2. Opening of the Austrian Community-led Event by Minister Schramböck

3 Digital certification to improve the skills of Austrians

3.1 The role of digital skills certification

3.1.1 Background

DIGITAL SKILLS NEEDS OF AUSTRIANS

The digital skills of population can be divided into three tiers:

1. Technical skills: database architecture, web design, coding, data gathering, etc. These competences come with a clear curricula, but concern a minority of workers.
2. Cross sectorial skills: data protection, cybersecurity, media competences, etc. These transferrable skills are evolving very fast. To acquire these competences, it is often easier to use a learning by doing methodology.
3. Soft skills: digital interaction for participation to the online world, collaboration, etc. This group of skills is the most difficult to define within a specific framework and certify.

The first step upskilling Austrians is raising awareness of the benefits of digital skills. While designing digital skills training programmes, it is crucial to consider careful usage, standards and values around the immersion of technology, in order to avoid unwanted risks coming with the use of digital tools. Defining the skills needs and quantifying the skills frameworks with appropriate standards of the frameworks is a key step.

Upskilling actions should also consider how the risks of using digital tools can be mitigated. For example, citizens should be trained to be able to distinguish between fake news and evidence-based news. The power of fake news to appear believable and misguide users in relation to facts is concerning. In recent years, a significant degree of mistrust towards facts has been seen in digital media and this is accelerated by the heavy use of digital tools.

THE POST-PANDEMIC LANDSCAPE

The labour market was severely hit by the pandemic in 2020, producing a negative effect on the economy, employee incomes and employment rates, despite significant emergency measures introduced by the government,. The resilience of the economy and society normally depends on investing in education, and the need for investment has been accelerated by the current situation.

The COVID-19 crisis has highlighted the importance of digital transformation for the full functioning of our economies and societies and accelerated the changes digital brings to global markets, ways of working, business as well as all other areas of life. The pandemic has accelerated the public awareness, acceptance and use of digital tools. These are now particularly prevalent in communication, as well as supporting creative approaches in both education and professional areas.

In this context, the global demand for online courses has skyrocketed, with a 640% increase from mid-March to mid-April 2020 compared to the same period in 2019, growing from 1.6 to 10.3 million courses completed, and only from the top 5 MOOC providers. It is worth noting that larger interest does not always correlate with better knowledge acquisition. For example, one user completed 40 certifications in one month, on technologies like Artificial Intelligence, Blockchain, Data Science, MERN stack. For this case, it is clear that the aim was to obtain certificates rather than acquire the actual knowledge.

DIGCOMP AND OTHER RELATED FRAMEWORKS

The EU has developed a series of skills and qualification frameworks, methodologies and techniques, with strong synergies between them:

- European Qualifications Framework (EQF);
- The International Standards Classifications of Occupations (ISCO);
- European Skills, Competences, Qualification and Occupations (ESCO);
- The European Job Mobility Portal (EURES);
- The Europass Initiative;
- The Digital Competence Framework (DigComp).

Specifically, if one has learned knowledge, skills or competences (as defined under the EQF), at a given level (EQF), for a certain occupation(s) and/or field(s) (ISCO), they can then translate these to a European occupations context (ESCO), compare and find other courses & certificates (EuroPass), create individual CVs with digital credentials (EuroPass), and then find relevant jobs, employers and job seekers (EURES).

The Digital Competence Framework (DigComp) assesses all these different types of education and frameworks, in synergy with the other European frameworks. DigComp assesses the acquisition of digital skills for the general public through a simple questionnaire.

To complement DigComp, there are databases for courses & qualifications to identify the EQF levels of existing courses. These are highly relevant for comparing EQF with the level of digital competences. In this way, one can assess the levels of knowledge of citizens and identify which courses and levels future iterations of the framework needs to focus on.

Certification schemes for digital skills, particularly DigComp, are an important cornerstone in the process of digital empowering of citizens. Austria has been implementing a Digital Action Plan, including a Digital Skills Agenda, inspired by DigComp, focusing on actions for different categories of beneficiaries – young people, the labour force (particularly SMEs) or the elderly. As part of the Plan, Austria is implementing the DigComp qualification framework nationally.

GOING FORWARD IN AUSTRIA WITH FIT4INTERNET

The New Skills Initiative, launched in Austria in 2009, aimed to develop new curricula aligned with new skills requirements. In 2019, the initiative "New Digital Skills" was launched as a part

of this New Skills Initiative, focusing on digital competences for specific sectors such as tourism, trade, construction, construction ecology, production, office and administration and others. The initiative employed a flexible approach depending on the field of activity, and the design of the program was the result of the analysis work of 125 experts, offering a multifaceted understanding of the state of the art.

The Austrian government is preparing a new comprehensive qualification program for 2021-2022, with the main focus on qualifications for individual career counselling guidance. The government has dedicated €700M to finance upskilling opportunities for more than 100,000 jobseekers and employees in short-term work through the 'Corona Jobs Offensive' programme.

Additionally, the fit4internet platform is at the heart of the digital skills agenda of the Austrian Digital Action Plan, working to provide awareness of the importance of digital skills for all Austrians. A recent development is the creation of a digital skills self-assessment tool. Already by the end of 2020, more than 30,000 Austrians had evaluated their competences using this tool.

For the next 2 years, fit4internet will focus on cybersecurity and digital creative work among others, as well as ensuring that digital skills certification is enabled in an inclusive manner.

3.1.2 Community insights and inputs

The OECD PIAAC survey in 2011-12 revealed that a large proportion of adults lack basic digital competences. In Austria, 40% of the respondents showed the lowest level of digital competences, below level 2. Only 4% achieved the highest level of the digital skills. The DESI index showed that in 2019 only 67% of Austrians have at least basic digital competences. In Austria, nearly half of the people who are unemployed have a low level of digital skills. Motivation is a key missing element in this puzzle.

ACCESS AND INCLUSION

Access to digital devices is only one part of the problem. There is a digital stratification or second-level digital divide in the use of tools and applications. This points to other correlative issues such as social and economic differences.

There is a need to understand which societal groups are experiencing digital exclusion, in order to understand how to support them by offering the digital competences they need. An essential step in this approach is identifying the right actors and institutions to work as intermediaries and help reach those who have been left behind.

Exclusion from digital skills training can happen due to a language barrier, a lack of knowledge on the use of a specific device, or the lack of interest on the part of the end-users. In order to address these causes of exclusion, establishing a dialogue with those concerned is important.

Inclusive learning requirements should therefore be a key priority. The multidimensionality of required digital skills results in significant complexity. Specific language skills may be required, which could create difficulties for even high skilled IT experts.

SUPPORTING COMPANIES AND THE ECONOMY

SMEs require support with digital transformation, by implementing technology and the associated business models to adapt their daily operations, as well as upskilling their staff. For the latter objective, they require support with skills development, perhaps within clusters or as part of networks.

Upskilling actions help company employees to upgrade and to apply learned knowledge in practice. Restructuring government training policies for the labour force, by focusing on the reorienting of occupations within the digital economy, is essential.

The success of upskilling actions is hampered by two principal issues. First, that economies do not need and do not depend on IT specialists. Secondly, that most workers need the highest level of digital competences according to the job-specific requirements – today and tomorrow. What is required is a spectrum of digital skills training, from basic to more advanced skills, considering the appropriate digital competence frameworks and a matrix of skills needs of industry. This should come as part of a broad social dialogue involving all relevant stakeholders in challenging issues of employees and employers equally, rather than applying a predefined one size fits all solution.

CERTIFICATIONS AND EXAMINATIONS ADAPTED TO EACH TARGET GROUP

Just as a one size approach to upskilling actions is not appropriate, when considering the educational system, it becomes clear that one exam cannot fit all the digital skills certification needs. In Austria, the national certification system will have two examinations: a general digital literacy exam, complemented by more specific content verification tests on particular tools and applications (e.g. usage of Adobe or other specific programs). Different methodologies should be applied for assessing different examinations, depending on the required assessment method (formative and summative). This third strand of validating competencies might be a lead way to arrive at a new and holistic approach of certifying digital skills.

Digital certification can benefit different target groups in different ways, therefore usability, high quality and support for the specific group that is being evaluated are the key components.

It is important to bear in mind when defining a certification framework that knowledge is relatively simple to demonstrate and test, but a full skills assessment is more complex, and requires more advanced methodologies. The mix of methodologies needs to be flexible and dynamic, with explicit learning outcomes in order to be ready for upcoming modifications to technology. The assessment should be an iterative process, engaging all of society. The two-

examination approach of Austria embraces these requirements, allowing also existing market players to participate and new entrants to come up with innovative approaches.

STANDARDISATION

The specific assessments and certifications developed, considering the needs of each group do need to be compatible with each other. This is where the idea of developing common standards for assessment and certification frameworks while providing flexibility becomes important. The presence of such standards allows orientation and inclusion. The success of certification frameworks should be measured by the quality of the testing, validation, education and training. DigComp plays an important standardisation role here.

Work around building a common standard for certifying digital skills is coordinated by the Austrian Federal Ministry of Digital and Economic Affairs. The work is based on the EU DigComp framework, whilst also assessing local needs. 50 multidisciplinary experts come together 3 to 4 times a year in the Task Force "Digital Competences" to further develop the framework and ensure it is up to date. The activity of the Task Force in 2020-2021 is focused on digital inclusion and closing the skills gap, particularly in e-commerce, e-services and cybersecurity, in order to increase societal resilience at both state and federal level.

When quizzed during the sessions, 71% of Austrian digital skills community see the establishment of clear centralising standards as an essential characteristic for a digital skills certification framework.

VOCATIONAL TRAINING AND APPRENTICESHIPS

Vocational training needs to be included in digital education catalogues. There is room for taking advantage of these training paths to support SME employees to acquire first basic digital competences, as well as reaching a better understanding of the definition and practical uses of technologies such as AI, cloud services and more. The Austrian Chamber of Commerce aims to open up a discussion on these topics, as well as support for the definition of specific training programmes.

As part of the apprenticeship programme modernisation process, the community is reviewing the current curricula, including the use of modern technologies in webinars. Trainees will be given a set of options and they will be able to decide on their own curriculum, the modules and their timelines.

Certification schemes should also consider synergies with the current apprenticeship and dual education system, as well as focusing on human centricity in all related work areas.

DIGITAL UPSKILLING AND RESKILLING BEST PRACTICES

Future.Apprenticeship.Austria is a non-profit initiative which links with 100 member companies and NGOs to promote apprenticeships and vocational training in Austria. It is

working to modernise the apprenticeship programme, by reviewing the curriculum through the collection of insights from the trainees.

SAP, as an early partner of fit4internet, offers courses and certifications in digital skills (see a full list here), with a particular focus on the digitalisation of the workforce among others. They have developed a model to bring people together from the technology sector and integrate their results in businesses processes. Specific programmes to improve the digital skills of women, recent graduates, and unemployed people are offered. The programmes work on a multilevel approach, starting with from young ages up to university level. Also, specific digital skills courses are referenced in the DigComp 2.2 AT.

In the last year, The Enterprise Training Centre (ETC) has been training and certifying more than 120,000 people in Western Europe in cloud computing skills (see the course here). This has been made possible thanks to a hybrid learning model, composed by MOOC training, digital training, and digital labs. Practice and social learning were also available on the platform. However, this is still short of the national demand in Austria for ICT experts, with an estimated gap of 500.000 staff estimated by ETC.

A good example of upskilling actions is the KI4LIFE Innovation Centre in Carinthia, a joint project of Infineon and Fraunhofer, where SMEs are supported in understanding where to make use of AI technologies from applied research.

3.1.3 Recommendations

CONSISTENCY WITH DIGCOMP

As multiple actors are involved in the development of digital skills, consistency between them, both in terminology and approach is essential. Consistency in evaluation across the skills community is another essential part of the solution. The new challenges we face in this new decade require new partnerships, where all relevant stakeholders are brought on board from the beginning. Coherency in the framework, both through common materials and guidance available for users, as well as a coherent EU-level approach were signalled by 62% and 51% of participants respectively as important characteristics of a digital skills certification framework. Certificates should work as the guarantees that determine if the skills have been learned and ready to be put in place in a real-life environment. Some of the areas with the highest demand for training are marketing, advertising, payroll and security.

DigComp is a tool directed at solving these problems, allowing the mobility of the skills across countries, and supporting the share and reuse of materials, practices and platforms. DigComp provides a more effective and cost-efficient method for the learning and evaluation of digital skills. DigComp does however require a framework update, to ensure that emerging technologies such as AI, IoT, VR or social robots are addressed. The next iteration of DigComp will focus on capitalising on all relevant synergies and ensuring proper monitoring.

The next step for digital certification across Europe, as outlined in the European Skills Agenda, as well as in the Digital Education Action Plan is to launch an EU Digital Skills Certificate in collaboration with the JRC. The aim is for this certificate to become accepted by governments, employers and other national stakeholders. This could be modelled on language skills certificates such as the EQF. The JRC is setting up task forces aimed at defining a model for this certificate and collaborating together with third-party organisations to quality assess the frameworks, in order to ensure all key stakeholders are engaged.

COLLABORATION

To succeed in closing the digital skills gap in Austria and Europe there is a clear need for cooperative work among all actors of the ecosystem. Offering Austrians a better understanding of IT in general and digital 'nativeness' is needed. This education and preparation should start early on in school, taught almost as a third language. Digital skills actions should include the normally invisible actors, organisations in the social sector working towards employability.

DIGITAL EDUCATION FROM AN EARLY STAGE

Future digital skills actions should focus on young people, with a format adapted to this, for example by using practice-based teaching methods. A suggested approach was a call for proposals, for schools and organisations beyond education which are dedicated to supporting young people to help improve their digital skills. The call could aim at the organisation of Hackathons to teach specific digital skills and teach young people a transversal use of digital tools.

The learning of digital skills should occur in an early stage in the education system. Whilst young people are digital natives, they are not the experts in digitalisation that the labour market needs. On a national level, there is a divide within Austria in terms of the perception of VET training between the rural and urban regions, with relatively fewer young people in cities seeing apprenticeships as a valid careers option. There is a disparity with Germany or Switzerland in this area. Any upskilling and apprenticeship strategy should address the gender gap specifically.

INCLUSION THROUGH EDUCATION

A significant fraction of companies and individuals have been excluded from social and economic activities during the pandemic due to low digital skills. A key part of addressing this issue is updating the educational curricula to ensure that they are up to date to the needs of the digital age. This includes new innovative approaches to developing digital skills throughout life, such as the blended learning courses used in the employment service. This way, all sectors of the economy, including SMEs can take advantage of digital tools and techniques such as online marketing in a cost-efficient and scalable manner.

Going forward, inclusion and cooperation will be essential in order to surpass the crisis. A broad dialogue among federal and regional ministries, institutions and organisations of all sizes in order to ensure evidence-based policy making, and a continuity of governmental approach will be important. Transformation programmes offering young people access to digital devices are a good approach to achieving this. The Austrian Coalition is an ideal channel to support citizens with the opportunities they need to take advantage of digital transformation.

INFRASTRUCTURE AND EDUCATION

In terms of infrastructure, the roll-out of 5G and 6G in the future, as well as the standardised EU roaming policy are key focus areas for connectivity. To support this digital transformation, education needs to adapt. This will require the support of highly qualified training, a focus on intrapreneurship and the essential skills for the digital world. It is important to drive motivation and fascination in young people about technology early on. This way, they can develop their digital skills and ensure an independent and proactive approach to their professional careers.

FUTURE UPSKILLING INITIATIVES

Lessons learned that can help the Austrian National Coalition improve future digital upskilling initiatives and their certifications include:

- Certification needs to be about the training and courses, as well as directed at specific target groups of people (Labour Force, ICT Specialists, Education - teachers or students or All Citizens).
- 'Train the trainer' type of education is a good approach to covering the broad spectrum of needs on the labour market.
- Digital skills are interdisciplinary, they should be built into other subjects, such as Mathematics, Physics, Ethics, History etc.
- Apprenticeship and dual education colleges should be integrated into digital skills certification frameworks.
- As a society, a human approach needs to be defined for digitalisation.

3.2 Learning from experiences in implementing DigComp in Austria

3.2.1 Community insights and inputs

Polled participants to the event overwhelmingly felt that digital upskilling occurs most in the workplace (78%), followed by at home (20%) and only a small fraction in a classroom or course setting (3%)

LESSONS LEARNED FROM ANDALUCIA, SPAIN

The post-COVID era is one of accelerated digital transformation. The transformation is being shaped by 5 fundamental pillars:

- Connectivity;
- Digital Economy, particularly the digitalisation of SMEs;
- eGovernment;
- Digital Competences, fostering a digital society as the basis for a digital economy;
- A more balanced model of living between the urban and rural regions.

A successful transformation relies on providing citizens with the digital competences they need to succeed. It is about people using devices with a clear intention, in a productive and secure way.

A key element of this is ensuring that digital skills are taught in a unified framework. The DigComp framework has been implemented through the work done by the Guadalinfo Living Lab with the aim of supporting regional lifelong learning initiatives in the south of Spain.

The implementation of DigComp locally focused on two dimensions:

- Ensuring an efficient management of the project at all stages. The key to this was considering all the relevant aspects including:
    - Understanding the purpose of the implementation.
    - Contextualising the approach, applying the framework to the local regional consideration.
    - Designing specific profiles of users, each with their specific training pathway.
    - Mapping existing resources and considering new resources to be obtained.
    - Designing a self-assessment tool, to give users control over the evaluation of the learning.
    - Determining if certification is necessary, and how this could be carried out.
    - Assessing the impact of the implementation of the framework.

- Understanding the beneficiaries of the framework, their needs and motivation for developing and certifying digital competences and engaging these users in all steps of the implementation process, from the design stage.

The motivational factors can, in turn, be split into two categories:

- **Intrinsic**, including feedback, sense of progression, mastery, purpose, lifelong learning attitude and culture.
- **Extrinsic**, such as effects on the economic status of the learners, or acquiring certification required to access employment.

Some of the key lessons learned from the implementation include:

- **Engaging all stakeholders** from the beginning is important, by applying the co-creation model to the design stage of the programme.
- **Avoiding repetition: do not re-invent the wheel** when implementing a digital skills certification framework; reuse, reshape and share. Most of the existing digital skills certification frameworks are compatible, therefore the merging of resources, assessment platforms and tools is encouraged. Active European associations working in the field include ALL DIGITAL (https://all-digital.org/) and Somos Digital (https://somos-digital.org/), whom have extensive catalogues of best practices available.
- **Community building is a lengthy process**. Programmes over the next couple of years will need to meet the market needs whilst responding appropriately to the post-pandemic effects. To ensure the market needs are reached, a common understanding of digital competences is required, and lifelong learning encouraged.
- **Triggering motivation and emotions in participants to the training is key**. The methodology of **'profiling' worked well** in multiple cases - a specific example was an initiative from Andalucía in the South of Spain where a community of flamenco artists with low digital skills and young people with digital skills exchanged knowledge to the benefit of both groups, shaping a community around a common goal.
- Along with motivation, **profiling** the beneficiaries is important, as well as offering them the opportunity to **self-reflect**. DigCompSat, a recently launched EC tool provides a good example of how to test a set of digital competences.

EXPERIENCES FROM AUSTRIA

The implementation of the DigComp framework nationally has provided a series of lessons:

- The COVID pandemic has accelerated demand for acquiring new digital competences and certifications among citizens.
- While a larger fraction of the younger generation has the necessary digital skills, initiatives need to now support other age groups to reach the same digital competence level.

- The DigComp Edu framework is providing good basis to adapt to the post-pandemic changes and help educators to use the right resources, in order to ensure the education and training systems are fully fit for purpose.
- In designing digital skills training actions, an agile and collaborative curriculum design process is needed, to be supported by outcome-based learning materials. Modules and content need to be aligned during the design process to market needs, in order to operationalise the learning outcomes.

Based on these lessons, Austria will diversify the process of acquiring digital skills certificates through three pathways:

- Training through classes,
- Testing with accredited evaluators,
- Validating learning outcomes after testing.

The next steps are validating these series of tests, extending databases with training courses, and developing piloting formative validation strategies and issuing certificates in all the pathways (test, training, and validation).

After this, also a micro-credential methodology to integrate all three pathways is to be developed.

3.2.2 Discussed approaches and initiatives

DIGITAL PIONEERS

Austria has a relatively low number of IT experts that companies are looking for. Whilst education is of the right level of quality, there is a problem regarding the **insufficient number of IT experts trained** nationally**.** There is also a clear gender imbalance in ICT specialists. Therefore, an essential axis of activity is ensuring more **young women** are trained to become ICT experts.

The Digital Pioneers programme aims to answer this issue with an 8-week basic training and 8-month practical application programme, provided by Platform Industry 4.0 and the Austrian government. **Technical and industry knowledge is shared** with the support of mentors, represented by associations, SMEs and unions in Austria jointly.

The first part of the programme has already been completed; it was focused on persons who are not yet competent in the digital domain.

DIGITAL OPPORTUNITY TRAINEESHIPS (DOTS)

The DOTs were a pilot EC project running 2018-2020. The project aimed to give university students of all disciplines, as well as recent graduates, the opportunity to get hands-on digital work experience, in fields demanded by the market. The initial target was 8,000 people, with more than double this number of participants reached by the end of 2020. The DOTs

strengthen ICT specific skills, in fields like cybersecurity, big data, and machine learning or boost digital skills for business in areas like web design, digital marketing, and software development. Given its overwhelming success, the programme will be continued under the framework of the Erasmus+ programme.

EIT DIGITAL HUBS

The EIT Digital Hubs educational programmes provide a good approach to fostering digital skills and entrepreneurial mindsets in young people. The programme engages 60 innovation hubs in Europe, working with over 2,000 partners and training 3,100 graduates yearly. 3,200 ventures were created so far within these programmes, amounting to €3.3 billion and 10,000 jobs created.

IKANOS

Another good example of implementing DigComp and a certification process is the Ikanos project from Spain. This project offers specific assessment for beneficiaries from the Education, Labour Force and All Citizens target groups. For the Labour Force, specific assessments are offered for verticals such as advanced manufacturing or e-Health.

OTHER INITIATIVES TARGETING THE GENDER GAP IN ICT

It is recommended that initiatives – to combat the gender divide in ICT – should start from an early age, perhaps as early as kindergarten. Another recommendation is enabling specific actions to ensure that the project reaches participants less interested and/or knowledgeable in STEM subjects, and ICT in particular. The EU Code Week is a good example of an initiative with equal gender representation, that can help reduce the gender gap in ICT in Austria.

3.3 The way forward for the Austrian National Coalition

3.3.1 The role of the National Coalition in supporting upskilling

When quizzed through the event survey, the Austrian digital skills community suggested that the main role of the National Coalition is identifying the national digital skills gaps, as well as supporting the standardisation of DigComp-based certifications.

When questioned on what the top post-COVID priorities of the National Coalition should be, responses focused on:

- **Inclusion**: supporting the unemployed, low skilled professionals.
- **Awareness:** enabling citizens in Austria to better assess their own digital skills compared to future market needs.
- **Digital education:** empowering teachers and trainers to provide the digital skills to the next generations.

They saw the National Coalition as a platform for exchange of know-how and expertise and offering collaborations and partnerships as well as networking opportunities at both the national and regional level. Particularly for industry partners, the Coalition could help provide a holistic view of digitalisation, including the needs of all actors. This could support companies to recognise the potential of digital transformation and the value it can bring them.

In terms of National Coalition member responsibilities, the members mainly see these as:

- Sharing results and activities from their projects.
- Connecting with industry and higher education.
- Extending the networks to local, regional, national and international level.

The most popular options for measuring the success of the National Coalition in a qualitative manner include the number of digital skills initiatives fostered, participants also indicated that qualitative approaches to measuring success are important.

3.3.2 The action plan for the National Coalition

Considering the learnings from the event, the Austrian National Coalition will focus their activities for 2021 grouped around 4 areas:

- Boosting partnerships between public and private bodies to enhance digital skills qualifications for citizens.
- Offering digital educational tools for Austrian citizens.
- Starting to offer digital skills certifications from 2021.
- Supporting the transformation of job roles by reskilling actions.

4 About the organisers

4.1 The Austrian National Coalition

The Austrian National Coalition is a recently established alliance of public institutions, organizations, companies, NGOs, training and education and employment institutions, social partners. It has one clear objective: to support digital reskilling and upskilling evaluations and certifications based on DigComp and meet the demands of Austria`s economy and labour market as well as society in a digitalized world avoiding a digital gap. Read more here.

4.2 Digital Skills and Jobs Coalition

The Digital Skills and Jobs Coalition is a unique community supported by the European Commission that:

- Enables stakeholders to propose actions, programmes, initiatives to improve the digital skills situation in Europe;
- Offers a platform of exchange to learn from peers and to showcase actions, initiatives developed and their impact;
- Helps to join forces to pave the way for a strong and inclusive digital Europe.

Any such organisation, be it an SME or corporate, an education provider, a social partner, or non-governmental organisation is encouraged to become a member of the Digital Skills and Jobs Coalition: join here.

Since 2016, members of Coalition have made pledges to tackle the digital skills gap and taken action to provide skills training, job placements, certifications and other activities addressing four target groups: citizens, the labour force, ICT specialists and digital skills in education.

Annex 1 Summary of event and agendas

Table 1 Summary of the Austrian Community-led events

TITLE	Digital Skills certification and DigComp implementation in Austria
OBJECTIVE	To present the work done by the Austrian National Coalition and all other relevant stakeholders in digital skills certification.
SESSION 1	Introduction to Austrian DigComp implementation
DATE	13th of January 2021, 15:00 – 17:00 CET
PARTICIPANTS	110
SESSION 2	The future of digital competence
DATE	27th of January 2021, 15:00 – 17:00 CET
PARTICIPANTS	112

Event 1: Introduction to Austrian DigComp implementation

Date 13 January 2021

Time 15:00 – 17:00 CET

Online

TIME	TITLE	DESCRIPTION
15:00	Welcome and opening of the event	• **Margarete Schramböck**, Federal Minister, Austrian Federal Ministry of Digital and Economic Affairs
15:10	The Digital Skills and Jobs Coalition	• **Alexander Riedl**, Deputy Head of Unit, Digital Economy, Recovery Plan and Skills, DG CONNECT European Commission

15:20	The DigComp Framework in practice for a lifelong learning journey – living-practice from Spain	• **Luis Navarro Lopez**, Digital Expert, Spain
15:30	Panel 1 – **A common standard for evaluating, qualifying and certifying digital competences in Austria**	• **Margarete Schramböck,** Federal Minister, Austrian Federal Ministry of Digital and Economic Affairs • **Sabine Herlitschka,** CEO Infineon, Vicepresident of Federation of Austrian Industries and fit4internet • **Mariana Kühnel**, Chamber of Commerce, Vice-Secretary General • **Clara Centeno**, Senior Researcher, Joint Research Center, European Commission • Moderator: Ulrike Domany, fit4internet
16:10	The Future of certification in Austria	• **Alexander Schmölz**, Managing Director, Austrian Institute for Vocational Education Research (öibf)
16:20	Panel 2 – **Good practice for professional digital upskilling and certification in labour context**	• **Roland Sauer**, Director General, Labour Market, Federal Ministry of Labour, Family and Youth • **Michael Swoboda**, Managing Director, Enterprise Training Center (ETC) • **Christoph Kränkl**, CEO SAP Austria (BFI OÖ upskilling program) • **Mario Derntl**, Secretary General, Zukunft.Lehre.Österreich (Future.Apprenticeship.Austria) • Moderator: Heike Leimbach, BMDW
16:55	Closing and survey presentation	• **Brendan Rowan**, DSJC Secretariat
15:00	Welcome and opening of the event	• **Margarete Schramböck**, Federal Minister, Austrian Federal Ministry of Digital and Economic Affairs

Event 2: The future of digital competences

Date 27 January 2021

Time 15:00 – 17:00 CET

Online

TIME	TITLE	DESCRIPTION
15:00	Welcome and opening of the event Opening Statement	• **Martin Kocher**, Federal Minister, Austrian Federal Ministry of Labour, Family and Youth
15:10	Presentation of survey results	• **Brendan Rowan**, DSJC Secretariat
15:30	Discussion of results in Panel 1 context – **evaluation and qualification for digital competences in Austria**	• **Luis Navarro Lopez**, Digital Expert, Spain • **Maria Ulmer**, Deputy Secretary General, Austrian Federal Ministry of Digital and Economic Affairs • **Kurt Hofstädter**, President, Platform Industry 4.0 • **Paul Rübig**, President, SME connect Europe • Moderator: Philipp Jauernik, IV/fit4internet
16:00	Discussion of results Panel 2 context – **certification of digital competences in Austria**	• **Robert Titelbach**, Member of the Taskforce Digital Competences Austria, Federal Ministry of Labour, Family and Youth • **Michael Horgan,** Policy Officer, Skills and qualifications, European Commission, DG Employment, Social Affairs and Inclusion • **Agnes Streissler-Führer,** Deputy General Secretary of GPA Union (Union of White Collar Workers in Austria), responsible – among other things – for digitalisation • **Alexander Schmölz**, Managing Director, Austrian Institute for Vocational Education Research (öibf) • Moderator: Thomas Narosy, Taskforce Digital Competences
16:30	Plenary debate	• Moderator: **Alexander Riedl**, Deputy Head of Unit, Digital Economy, Recovery Plan and Skills, DG CONNECT European Commission

16:50	Summary of outcomes	• Moderator: **Alexander Riedl**, Deputy Head of Unit, Digital Economy, Recovery Plan and Skills, DG CONNECT European Commission
16:55	Concluding remarks	• Moderator: **Heike Leimbach**, BMDW

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