Partner Report Template

partner organization	Hafelekar
drafted by	Leonie Cammerlander, Karin Lackner, Paul Schober

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1. The Changing Labour Market

1.1 Drawing on recent developments and technological changes to the world of work, can you describe the impact (or potential impact) of these changes?

In Austria, the Public Employment Service Austria (AMS) has developed the so-called "Qualification-Barometer" together with external experts, which is the first comprehensive online information system on qualification trends. It is aimed at employees of the AMS, journalists and those in positions of responsibility in politics and business, as well as at people who are faced with a decision about their professional future. *"The AMS Qualification Barometer is an indispensable instrument for all those who are interested - privately or professionally - in the development of the labour market and the need for qualifications, due to the wealth of data it contains, its topicality, its forecasting function and last but not least its clear presentation.*

http://bis.ams.or.at/qualibarometer/

In Austria we can clearly identify **one major impact** of recent developments and technological changes to the world of work:

"The trend towards higher qualification and professionalisation continues. On the one hand, this is reflected in the increasing demand for academics and for professions at school leaving examination (e.g. technical professions, social and health professions). On the other hand, occupational groups with lower qualification levels are also confronted with increasing demands and a greater need for specialist skills".

AMS, Arbeitsmarkt im Kontext; 2019
http://bis.ams.or.at/qualibarometer/load_top.php?load=berufsbereiche_toptrends

1. Areas of the labour market in Austria showing the most significant changes

In a study by the HIS, the potential for substitution of activities within occupations in 2017 was estimated for Austria on the basis of the predicted digitalisation and automation:
Overall, it can be seen that about 8.5 to 9.0% of the employees in Austria have an activity profile with a high risk of being replaced by machines.

A breakdown by sector shows that the majority of high-risk workers are proportionally employed in the following sectors

- other economic services (23 %) and
- work in construction (18 %).

The occupational groups potentially most affected by automation are

- unskilled workers
- craftsmen and women
- Machine operators and
- Persons in service professions

They almost exclusively have medium and high automation probabilities. In contrast, academics and managers are the least affected. These have low automation probabilities. For the vast majority of employees (79.5 %), a medium automation risk of between 30 % and 70 % is estimated.

Overall, the preceding analysis shows the destructive potential of digitising gainful employment. Possible positive employment effects are not taken into account. *"If activities are automated in the course of the predicted digitisation, a redistribution or redistribution of gainful employment will take place. Some of the employment relationships will not continue to exist in their present form, but past experience shows that the integration of new technologies into the work process can also create new fields of activity and thus new jobs.*

https://irihs.ihs.ac.at/id/eprint/4231/1/200800.pdf

Here we would like to give a practical example that illustrates how difficult it is to capture the effects of the changing labour market through automation and digitisation. In the IHS study mentioned above, for example, the construction industry is mentioned as a risk factor. At the same time, however, the construction industry (according to the AMS qualification-barometer) is the top occupational area. Is this a contradiction in terms? On closer inspection, however, this is not the case, as this topic is not so much about sectors as it is about the level of qualification of employees: *"Although monotonous manual work will probably continue to exist on the construction site despite the increased use of machines, the demand for building aid professions is declining. The demand for qualified employees, on the other hand, is growing: technical craftsmanship is at the heart of this, because in most building professions it is essential to know and master a wide range of materials and techniques. Digitisation has also found its way into the building industry: Today, construction planning is digital and digital data,*

e.g. information on materials and quantities, must be read, understood and implemented on the construction site.

AMS, Arbeitsmarkt im Kontext; 2019
http://bis.ams.or.at/qualibarometer/load_top.php?load=berufsbereiche_toptrends

2. Predictions on the impact of digitisation & automation

Digitisation has arrived in all areas. However, the concrete effects are quite different and range from new technologies to IT applications in business processes to basic IT application knowledge, which is already considered a prerequisite in many professions.
Digitisation and automation, as versatile multi-purpose technologies, are the driving force behind numerous innovations in the form of new production methods and new goods and services. They create new needs and new opportunities to meet existing needs. In the long term, this strengthens demand and, as economic output grows, so do real incomes.

Wifo: Stand der Digitalisierung in Österreich, Wien, 2019
https://www.wifo.ac.at/jart/prj3/wifo/resources/person_dokument/person_dokument.jart?publikationsid=61654&mime_type=application/pdf

However, automation and digitisation have arrived in the Austrian economy in very different ways: More than one in three small or medium-sized enterprises (SMEs) do not yet attach great importance to digital technologies for their own business model. In addition, Austrian medium-sized industrial companies spend on average only about ten percent of their total investments on digital technologies. Opportunities are seen particularly in customer acquisition and cost reduction, but implementation often fails due to a lack of know-how. On the whole, Austria's small and medium-sized enterprises thus show only a low to medium degree of digitization.

Bundersministerium Digitalisierung und Wirtschaftsstandort: Digitaldossier Österreich, Wien, 2018

Digitisation and automation have of course long since ceased to be the exclusive domain of industrial companies (Industry 4.0) and although SMEs are often much slower to change than large companies, they will have to face up to this change.

However, the changes in the world of work go far beyond digital technologies: trends such as internationalization, diversification or ecologization will also influence the professional landscape in Austria in the coming years. Many of these trends influence each other or are side effects of digitisation.

See AMS, Zukunft der Arbeit in Österreich; Vienna, 2018
http://www.forschungsnetzwerk.at/downloadpub/180619_Dokumentation.pdf

3. Industries considered of high risk (of loss) and possible impact on low skilled workers

As explained above, using the example of the construction industry, it is difficult to determine the risk of job losses in specific sectors or industries. But an international phenomenon also applies to Austria:

A change in the world of work - which is particularly visible to the public - is taking place in the retail sector, driven by the rapid developments in online trading: The working world in sales has changed considerably, mainly due to
- transparency of costs and information
- better informed customers in stationary trade
- an increasing number of small regional suppliers who produce their own products
- use of social media channels for marketing

Retail is thus very visible to all in a state of change: parallel structures of Internet and stationary trade place high demands on employees in retail, field service and sales. In 2018, a separate apprenticeship occupation for online trading (e-commerce merchant) was created. The dynamic development of online trade has also resulted in an increased demand for messengers and professional drivers.

AMS-Qualifikations-Barometer (20) – Update 2019
http://www.forschungsnetzwerk.at/downloadpub/AMS%20info%20454%20AMS-Qualifikations-Barometer.pdf

4. Significant areas of growth in the Austrian labour market

According to the Qualification-Barometer, the following sectors will be named as "top occupational areas" for the labour market in Austria in 2019:

A) Construction, ancillary building trade, wood, building services engineering
B) Mining, raw materials, glass, ceramics, stone
C) Office, Marketing, Finance, Legal, Security
D) Electrical engineering, telecommunications, IT Electrical engineering, telecommunications, IT

E) Trade, logistics, transport

F) Mechanical engineering, automotive, metal

G) Social affairs, health

H) Tourism, hotel and restaurant industry

Traditionally, of course, tourism plays a major role in many parts of Austria. This includes the sub-sections accommodation and gastronomy, where manpower is constantly needed. For our study, however, the tourism sector is not so relevant, as there are no significant changes in the core competencies of employees.

http://bis.ams.or.at/qualibarometer/load_top.php?load=berufsbereiche_toptrends

A common trend applies to many sectors: physical work is declining as many professions are increasingly dominated by technology, whereas heavy physical work is increasingly being performed by machinery and equipment.
Digitisation is making its entrance and thus less qualified people in all occupational groups are confronted with increasing technical requirements and a greater need for specialist skills.

Particularly in demand are certain combinations of competences such as law plus business knowledge, or technology and economics. Even if the importance of technical knowledge is not diminishing: Interdisciplinary competences are becoming increasingly important. Languages play a major role, and knowledge of German as a key competence should not be forgotten. Due to the increasing service orientation, activities with customer contact play a central role.

AMS, Arbeitsmarkt im Kontext; 2019
http://bis.ams.or.at/qualibarometer/load_top.php?load=berufsbereiche_toptrends

5. Significant disruption in terms of the job roles and tasks

"The technological achievements of the past are decisive for today's material prosperity. At the same time, it can be observed that with every technological innovation, certain activities have been devalued by workers or completely replaced by machines, for example. The current and predicted digitization process has a new quality because more complex activities - both cognitive and manual - can be performed by machines. Until recently, it was assumed that these activities could only be carried out by humans and were therefore reserved for them.

Brynjolfsson und McAfee , Big Data: The Management Revolution (2012)

In Austria, in relative terms, fewer employees work in the occupational groups with a lower risk of automation (managers, academics, service professions) and more in the professions with a higher probability of automation (office staff, farmers and foresters, craftsmen).

Composition of the risk classes in terms of occupational groups:
In the group with a high probability of automation of over 70 %, unskilled workers (25.1 %), craftsmen (24.8 %) and service professions (19.5 %) are strongly represented. The employees with a lower probability of automation, on the other hand, are mostly made up of academics (61.8%), managers (16.4%) and technicians (15.2%).
It is alarming that unskilled workers have the highest proportion of high-risk workers, 30.3%. The second and third largest shares are found among craftsmen (18.7 %) and machine operators (17.7 %).

It is shown that unskilled workers in agriculture, forestry and fisheries have the highest average risk of automation at 69% (ISCO-08 92). Very high average risks of over 65% are also found in assembly (ISCO-08 82), cleaning and support staff (ISCO-08 91) and unskilled workers in mining, construction, manufacturing and transport (ISCO-08 93). In addition to occupations in personal services (ISCO-08 51) and sales staff (ISCO-08 52), almost all craftsmen, machine operators and unskilled workers (ISCO-08 71 to 96) have an average automation risk of at least 60%.

Overall, it can be seen here as well that the job profiles of employees in the occupational groups with higher qualification requirements have on average a lower automation risk. As expected, there is also a negative correlation between the highest completed education and the individual automation probability of the activity profile.

https://irihs.ihs.ac.at/id/eprint/4231/1/200800.pdf

Measures against "digital exclusion" in Austria

> *"We need to invest more in the individual, so that people survive the digital transformation well, not necessarily the individual company! That is of course also a concern, but not my first one! My first concern is that people still have a job and an opportunity to earn their daily bread and participate in the value creation process. There is far too little invested in this!"*
>
> Eva King, Managing Director of the Digital Campus Vorarlberg

At the beginning of 2018, the "Digitization Ministry" („Digitalisierungsministerium“) was established in Austria, which put the topic of digitization high on the list of priorities. The

discourse on digital literacy was given priority and the clear mandate is to ensure that the population, regardless of age, background and even educational status, has the opportunity to acquire digital literacy. This has led to the creation of one of the focal points in the Ministry of Digitisation, namely the Digitisation Agency, the DIA, with a clear focus on the digitisation of the economy and here primarily of SMEs, i.e. small and medium-sized enterprises. The non-profit association "fit4internet" was then founded to address the issue of the digitisation of society, with the purpose of increasing the digital skills of the population.

Sinn und Zweck ist die Steigerung der digitalen Kompetenzen der Bevölkerung“
Interview Ulrike Domany-Funtan, MBA, Generalsekretärin des Vereins »fit4internet«,
http://www.forschungsnetzwerk.at/downloadpub/AMS%20info%20456%20New%20Skills%2027%20Domany-Funtan%20fit4internet.pdf

Summary of the findings

1.1 Areas of the labour market in Austria that are showing marked changes cannot be identified by specific sectors or industries, but rather by occupational groups and activities. The occupational groups potentially most affected by automation - around 8.5 to 9.0% of the workforce - are unskilled workers, craftsmen, machine operators and people in service occupations. In contrast, academics and managers are the least affected.

Predictions on the effects of digitisation and automation in the Austrian economy are based on the following facts: More than one in three small or medium-sized enterprises (SMEs) do not yet attach great importance to digital technologies for their own business model. Austria's small and medium-sized enterprises show only a low to medium degree of digitization. However, the changes in the world of work go far beyond digital technologies: trends such as internationalization, diversification or ecologization will also influence the professional landscape in Austria in the coming years.

It is difficult to pinpoint the **risk of job loss in specific sectors or industries, as these are** more likely to be disadvantaged groups. A vivid phenomenon also applies to Austria: trade is very visible to all in transition. Parallel structures of Internet and stationary trade place high demands on employees in retail, field service and sales. However, the dynamic development of online trade also results in an increased demand for messengers and professional drivers,

which can be interesting for people with low qualifications. Similar phenomena naturally also apply to other sectors.

According to the forecasts of the AMS Qualification-Barometer, **significant growth areas of the Austrian labour market** would be construction & ancillary construction industry, mining, office jobs, electrical engineering, telecommunications & IT, trade, mechanical engineering, social services & health, as well as tourism and the hotel and restaurant industry. A common trend also applies to these sectors: **physical work is declining** as many occupations are increasingly dominated by technology, whereas heavy physical work is increasingly being performed by machinery and equipment. Digitalisation is making its entrance and so even the less qualified are confronted with increasing technical requirements, but also **interdisciplinary skills are becoming increasingly important**: languages play a major role, and due to the increasing service orientation, activities with customer contact play a central role.

In Austria we can clearly identify **one major impact** of recent developments and technological changes to the world of work: **The trend towards higher qualifications and professionalisation is continuing, making** it increasingly difficult for occupational groups with lower qualification levels to survive in the labour market. The **topic of "digitisation"** was placed high on the list of priorities by political decision-makers in Austria. The clear mandate is to ensure that the population, regardless of age, background and even educational status, has the opportunity to acquire digital literacy. This gave rise to the Digitalisation Agency (DIA), with a clear focus on the digitisation of the economy and here primarily of SMEs, i.e. small and medium-sized enterprises.

* * *

1.2 Drawing on Country and EU research, can you describe what skills will be most needed in the future world of work?

1. Skills and upskilling most needed in Austria

As has already been made clear above, it is more appropriate for the starting position in Austria to start from vulnerable occupational groups than from individual sectors or industries. In principle, the higher the level of qualification of people, the more opportunities they have in the rapidly changing work environment.

For many years Hafelekar has been dealing with the target group of the so-called "low-skilled", who generally have a difficult time on the labour market. The additional requirements of digitalization and automation bring new challenges to this group. This is probably the case in most EU countries. It is critical to note that in Austria the recognition of informal and non-formal competences is still in its infancy. We know from experience that formal educational qualifications are still considered very important and that a rethink is only slowly beginning.

Nevertheless, of course all competences acquired in life are an essential prerequisite for competitiveness and employability, as more and more is demanded of employees in view of structural changes. This makes it all the more important to make acquired skills visible.

Knowledge acquired outside the formal education and training system is often not documented or formally recognised. Member States have agreed to introduce national arrangements for the validation of non-formal and informal learning by 2018 (Council Recommendation on the validation of non-formal and informal learning (2012/C 398/01). Unfortunately, implementation in Austria is not yet very far advanced although there are best practice examples (see below).

Europäische Kommission: Kompetenzen für den Arbeitsmarkt, 2017
https://ec.europa.eu/info/sites/info/files/file_import/european-semester_thematic-factsheet_skills-for-labour-market_de.pdf

With regard to digitisation, it seems particularly important to be able to record informal skills in order to increase employment opportunities. The European Commission has developed DigComp, the European Digital Literacy Framework, as a reference framework to explain what it means to be "digitally literate".

With DigComp the human being should be in the foreground. The framework does not focus on devices or software, but is designed to support the safe, critical and responsible use of digital technology by people. The framework provides a comprehensive description of the knowledge, skills and attitudes that people need in 5 key areas

DigComp is a free, flexible reference framework that can be adapted to support the development and understanding of digital literacy in any environment.

Europäische Kommission: European Digital Competence Framework for Citizens (DigComp), 2017
https://ec.europa.eu/social/main.jsp?catId=1315&langId=en

2. Steps being taken in Austria to address the challenges and skills gap, particularly for low skilled workers and those of low educational attainment and disabilities

2.1 Measures on digitisation

The BMDW - Federal Ministry for Digitisation

The core task of the “Federal Ministry for Digitization and Business Location” is to promote digitization in Austria. Priority objectives are the improvement of existing framework conditions in order to make society fit for digital change, to enable digital innovation and technology transfer in the economy, and the Austria-wide coordination and implementation of e-government solutions for citizens and the economy.

https://www.bmdw.gv.at/Ministerium/DasBMDW.html

The following initiatives and projects, among others, have been launched at the BMDW:

Digitisation Agency | Digitalisierungsagentur

Within the FFG, the Research Promotion Agency, the "Digitisation Agency" was set up to award grants to SMEs - small and medium-sized enterprises - in Austria in order to promote digitisation in a targeted manner:

"Digitization is a central topic of the future and, as a cross-sectional matter, affects all areas of life. The Digitisation Agency is to serve as a central platform for important digitisation measures in order to meet the challenges of digital transformation in a targeted and joint manner. "

https://www.ffg.at/dia

This support measure is aimed at companies, but with the specific aim of making employees digitally fit and generally opening up a positive awareness of the opportunities of the future so that they can actively use them.
Many companies in Austria want to take advantage of the opportunities offered by digitisation, but do not yet know how to tackle the issue properly. In order to enable Austria's small and medium-sized enterprises (SMEs) in particular to make the best possible use of their digitisation opportunities, the "KMU DIGITAL Initiative" provides concrete assistance: The companies benefit from subsidies for consulting, qualification, knowledge transfer and further training. This strengthens the digitisation know-how of the entire site and creates valuable jobs.

In total, 7,000 enterprises have already been supported by this programme with around 10,000 consultations. Due to the high demand, the programme was redesigned by the Federal Ministry for Digitisation and Business Location (BMDW) in cooperation with the Austrian Federal Economic Chamber (WKÖ) in 2019 and will enter the next round with an extended implementation grant of 4 million euros.

https://www.digitalaustria.gv.at/kontakt.html

fit4internet - Digital competence in society

fit4internet is also an initiative of the Austrian Federal Government and is aimed directly at a wide range of target groups with training courses throughout the country for the development of digital skills. This benefits senior citizens, middle-aged professionals with little connection to information technology, and young people. Similar to the successful computer driving licence, there will be learning and certification opportunities to make the acquired knowledge measurable and comparable.

The basis for the measurability of acquired knowledge is the "DigComp", the EU Digital Competence Framework, which was revised with experts in Austria to see where it needs to be adapted and further developed. At the end of January 2019, the digital competence model for Austria, "DigComp 2.2 AT", was presented, which essentially corresponds to the digital

competence model at the European level, i.e. it is based on five competence areas. These areas are

- Handling of information and data
- Communication and Collaboration
- Creation of digital content
- Safety and
- Problem solving

This frame has been extended by a so-called "Competence Area 0 - Access and Concepts", which contains basic competences about the functioning of the Internet, smartphone, tablet, PC, etc. The model has been available since the end of January 2019 and is now to be filled with "life. “

fit4internet is a measure for the general population to reach the level of digital everyday competence that all people in Austria should have when we talk about social inclusion in the course of digitisation. In a next step, a check is to be offered to employees and employers as well as institutions such as AMS, WAFF, WKO, AK et cetera. As a third step, a test procedure will be developed to prove that applicants also possess the respective digital skills in their profession.

Sinn und Zweck ist die Steigerung der digitalen Kompetenzen der Bevölkerung, Ulrike Domany-Funtan (Interview) http://www.forschungsnetzwerk.at/downloadpub/AMS%20info%20456%20New%20Skills%2027%20Domany-Funtan%20fit4internet.pdf

Digital Campus Vorarlberg

The educational program at the Digital Campus Vorarlberg addresses different target groups: There are offers for teachers, young people, people in employment, but also those who are unemployed. This starts with one-and-a-half-day seminars and extends to real vocational training in areas where studies or training in software development are required.

Targeted training and further education in digital skills is offered. In general, there are five training areas.

1. Digital School: This is about how we train teachers to teach digital skills to students. The training itself is aimed at teachers and schools that want to change their teaching.

2. "Digital Master Classes": This is about innovation. Innovative ability, creativity and entrepreneurship are central, because each and every one of us is expected to think entrepreneurially in the future, whether as an employee or entrepreneur. It is about using creativity for new products, for the development of new services, for changing processes or even for oneself.

3. "Talent Management in Digital Transformation": The point here is that many companies do not yet really know what exactly the digital transformation means for them: Which area of the company do they want to digitalize at all? What personnel development requirements result from this? Tailor-made training courses are offered for these companies and their employees.

4. "Coding Campus": Here, training as a software developer is offered. A completely different didactic approach than is usually used in schools or universities is applied, with the goal of training everyone to become a programmer within five months. After a short internship of one month, the participants then directly enter a (partner) company.

5. "Digital Studies". Digital Studies is about teaching the essential skills in higher education, at Bachelor and Master level. The offers are extra-occupational and independent of location. In the first courses alone, 92 students take advantage of this flexible training opportunity.

Eva King (interview) "We made a conscious decision from the start that the Digital Campus Vorarlberg should of course also be there for the unemployed"

https://www.digitalcampusvorarlberg.at/

2.1 Measures for the "low-skilled"

update training

On behalf of the AMS - Austrian Public Employment Service - the ÖSB Group offers targeted training and further education on the subject of digitisation for job seekers of all ages. The prerequisite is to be registered with the AMS as a jobseeker.

"In our educational measures, we support, advise and accompany people in (re)entering the job market. We impart technical knowledge and social qualifications as well as digital skills that are necessary to cope with the changing demands of the labour market".

https://www.updatetraining.at/

The following additional programmes of the ÖSB Group, which offers labour market services throughout Austria in the fields of counselling, employment and qualification, are of interest to our FYC target group:

Itworks Personnel Service

Itworks Personalservice is another programme of the ÖSB Group in close cooperation with the AMS (Public Employment Service Austria) and is mainly aimed at jobseekers with low qualifications.

Itworks is a social enterprise that helps people of all ages, ethnicities and qualifications who are disadvantaged in the labour market to re-enter the work process. Itworks builds on cooperation with companies from all sectors. Placement in jobs in the economy as well as comprehensive case management for all target groups of labour market policy - in particular for persons with health problems - is the core of the counselling and care facilities.

In its integration leasing and employment offers, Itworks focuses on the approach of individual support for people looking for work. In a support phase of 3 to 6 months, the jobseekers' skills are processed transparently and matched with the economic requirements of companies. The primary goal is to place people in sustainable employment. Cooperation with socio-economic enterprises also plays an important role.

There is a special offer for young people: work is being done on the successful transition from school to working life. For disadvantaged young people, it has proven to be a good idea to create a first perspective in their own production schools.

https://www.itworks.co.at/

CONTEXT - IMPULSES ON THE LABOUR MARKET

CONTEXT, also a partner of the Public Employment Service Austria (AMS), is another educational institution with many years of experience in the field of adult and vocational education, counselling and coaching.

The main concern of CONTEXT is to provide offers for timely, business-oriented and appreciative action in education and training as well as reintegration into the labour market for companies and applicants.

An overview of the most important projects for our FYC target group:

1. Production School Vienna: This offer is aimed at young people who have difficulties entering the labour market. The training focuses on the areas of nature and creative workshop, handicraft technology and the areas of commercial/trade and EDP.

2. BBE "STEP2AUSTRIA" supports people after completing the competence check, in their integration on the 1st labour market. The BBE is aimed at persons entitled to asylum or subsidiary protection from the age of 18 and over who are registered with AMS Vienna, as well as persons with a migration background, and aims to advise, accompany and support them in the best possible way by means of a combination of individual setting and target group-specific workshop offers. The primary objective is the regional and supra-regional placement in an employment relationship in the primary labour market.

3. Step2Job is a counselling and support institution that helps people - especially those with low qualifications - to make the step back into the world of work. Through the interaction of a multidisciplinary team, the needs of the people can be addressed individually. The offer ranges from the creation of the ability to work to integration into the labour market. Long-term care options are available to people. Social and health problems are solved step by step together with the people concerned.

4. VIA - DIVERSITY, INTEGRATION, BREAKING UP: The labour market is a particular challenge for young people. Young people with increased care needs find it difficult to find a job. The transition from education or school is extremely difficult for young people with special needs.
VIA is based on the possibilities of the participants, both in terms of time and content. An arrival phase of a few hours per week, if required, is followed by the establishment of a day structure. Vocational orientation and school maturing as well as social competence training and teamwork take place in small groups.

https://www.context.at/

work plus (arbeit plus)

For 30 years, arbeit plus has been the network of non-profit, labour market policy companies in Austria.

"Social enterprises are the corporate form of the present and the future - that is what we believe in. Because they make a difference: in their claim to be economically successful, in their efforts to fulfil their social integration mission through high-quality employment and counselling that secure their existence, and in their efforts to make a sustainable contribution to a resource-saving and ecological balance."

https://arbeitplus.at/

This network consists of various companies that follow the claim to be economically successful in their efforts to fulfil their social integration mission through high-quality and livelihood-securing employment and consulting and to make a sustainable contribution to a resource-saving and ecological balance.

A list of these socio-economic enterprises in Austria can be found in this database: https://arbeitplus.at/datenbank

* * *

The above mentioned examples are only exemplary for many other initiatives and projects that are offered in Austria for different target groups. In conclusion, there are a great number of innovative measures, but the institutions and education providers responsible for implementation are increasingly having to contend with financial cutbacks.

A list of many other programmes, initiatives and projects can be found under point 3) of this report.

3. Recommendations for low skilled workers, in the future labour market in Austria

"Low-skilled workers are a very heterogeneous target group and their requirements for basic and further training are very different. Central procedures to deal with differences are the use of sensitive screening and the evaluation of already existing competences, on the one hand to show and value already existing competences and on the other hand to be able to place the persons in the appropriate courses where they are neither under- nor overchallenged."

Petra Ziegler: On the situation of low-skilled workers in Austria

Diversity of the group of "low-skilled workers" in Austria

In her report on the situation of low-skilled workers in Austria, Ziegler clearly states that this is a very heterogeneous group and that offers should therefore be tailored to the specific learning needs of each individual, depending on whether the person is in a low-skilled occupation, a school drop-out or an unemployed person without compulsory schooling.
She mentions a very interesting point: "Often these people look back on negative experiences at school and can do little with "school-based" further education offers or can only be reached with difficulty. Often there is also a lack of awareness of existing problems with basic skills, or there is a sense of shame in admitting difficulties in this area. It can therefore be very difficult to persuade people with low basic skills to participate in further training."
In addition, many low-skilled adults find it difficult to find time for further training alongside work and family. Ziegler also points to the problem that newly acquired skills can be lost quickly if not applied, which is often the case especially for people in low-skilled occupations.

Current forecasts for employment development in Austria up to 2020 show that the prospects for low-skilled workers are more pessimistic than for people with a higher level of education: For example, the Austrian vocational landscape is characterised by a strong concentration on jobs requiring an intermediate qualification (ISCO skill levels 2 and 3): In 2013, this segment accounted for more than 70 percent of all employment relationships (71.7 percent) in Austria, followed by employment relationships (14.8 percent) that usually require an academic education (skill level 4) as a qualification.

Petra Ziegler: Zur Situation von Geringqualifizierten in Österreich und ausgewählte inter-nationale Fallbeispiele zur Anerkennung von Kompetenzen und Höherqualifizierung
http://www.forschungsnetzwerk.at/downloadpub/AMS_info_357_358-1.pdf

The experts consulted for this study seem to agree on the following basic points:

- It is essential that higher qualifications for groups affected by exclusion are sought.
- The recognition of informal and non-formal competences is still not sufficiently advanced in Austria. There is still too much emphasis on formal education and training qualifications.
- Social inclusion and exclusion tendencies are still too little considered in the discourse.

3.1 Recommendations focusing on digitisation - from a socio-economic perspective

"While the progressive digitization of the world of work is often the focus of attention as a buzzword, the associated inclusion and exclusion tendencies are given comparatively little attention. But especially for long-term unemployed, disabled and disadvantaged people, digitisation raises a number of questions. These people run the risk of completely losing their connection to the labour market. "

Manuela Vollmann, arbeit plus

Social enterprises are an important place of learning to enable people furthest from the labour market to participate in the social and digital (working) world: This was also the basic tenor of the conference "Social Enterprises and Digital Inclusion", which was organised by the Austria-wide network of social enterprises "arbeit plus" in cooperation with the European Network of Social Integration Enterprises (ENSIE) and the Austrian Ministry of Social Affairs as part of the EU Presidency on Friday, 16 November 2018 in the riverbox in Vienna.

What is called for is a "Strategy for Digital Inclusion", as successfully exemplified by countries such as Israel, or a "One Stop Shop" that makes the growing range of advice, qualifications and initiatives easily and clearly accessible to all.
Digital inclusion offers the opportunity to create tailor-made labour market policy offers and more social participation for long-term unemployed and disadvantaged people. Vollmann: "For the social enterprises of arbeit plus, this means in concrete terms that they define digital inclusion as a strategic guiding theme and include digital skills in their qualification and counselling measures to a greater extent than before".
This recommendation is supported by the AMS, which calls for the development of curricula that can be disseminated in order to be able to offer suitable training for clients.

http://www.arbeitplus-wien.at/fileadmin/media/downloads/AKTIV/AKTIV_2_2018_SCREEN.pdf

New Digital Skills - from a technical to an overall view

The AMS New Skills Initiative was already launched in 2009, in which company representatives in particular had the opportunity to contribute their experience and expertise. The results of the various projects in this initiative are incorporated into the design of educational and career information, as well as into the development of further training offers for job seekers and employees.
For several years, special attention has been paid to the changes brought about by digitisation, culminating in a separate workshop series New Digital Skills in 2019.

The results indicate that today's challenges to education and training go deeper than initially assumed. It is clear that technical skills - which are undoubtedly urgently needed - are only one side of the coin. Under certain circumstances, some experts speculate, these may even be the more manageable ones. For it can be seen that through and with digitisation, structures, processes and business models are changing in a way that requires new mind-sets on the part of both employees and managers. Methodological, social and personal skills are thus gaining in importance more than ever before - for all those involved.
The biggest challenge today is no longer the "destruction" of entire professions by algorithms and robots, but the change and further development of activities and requirements for employees and job seekers. Today, the focus is on questions of the competencies that employees need in this changing world of work.

The New Digital Skills Report emphasises that "digitisation is not everything". There are also many other influences on work and employment that we should not lose sight of. Demographic development, the continuing increase in urbanization, climate change and mobility with all their interactions are just a few of the aspects that are massively changing the world we live in and the world of work and presenting companies with a wide range of challenges. In conclusion, the call is made to move away from a purely technology-driven perspective and focus on an overall view.

"Which competencies have become more important due to digitalization?"
Here is the good news for us humans: As a result of digitisation, typical ***human skills*** *have gained in importance - in addition to IT skills.*

AMS/IBW: New Digital Skills An initiative of AMS Austria Results report, Nov. 2019
https://newdigitalskills.at/

3.2 Recommendations with a focus on social skills

A "successful competence menu" is suggested, for example, in the study by AMS/IBW. Here are the main points in the summary:

Openness and willingness to change

Crystallize as two of the most important factors when it comes to changes in the world of work, regardless of industry (whether it is sales consulting, hospitality or IT knowledge). Those who stop will at some point no longer be able to keep up and therefore ongoing training as well as education and further training are becoming increasingly necessary.

Combination of expertise, process knowledge and "common sense

Employees who can think and think outside the box have always been welcome and digitisation has increased the need for this. Employees today need an understanding of the meaning and interrelationships of (digital) processes. They must also be able to draw on this understanding in order to be able to explain functions, possibilities, but also limitations to customers and colleagues.

A social, communicative and dynamic corporate culture

Anyone who wants to keep up with the rapidly changing world of work must not miss the opportunity to transfer the dynamics of digitisation to the organisation, processes and procedures. From the cluster office to new business models and new business areas, work is carried out across the board, which makes dynamic teamwork increasingly necessary. These new ways of working and process organisation make collaboration tools possible, which master virtual teams and joint data and knowledge management as well as flexible workstations and teleworking or home office.

Increased communication competence - the real work is done by people!

The new structures and processes are created by people and these people need more and more communication skills. The "Digital etiquette" and the knowledge of who is to be addressed via which channels becomes just as important as the correct design of information flows and project procedures. Interdisciplinary, international and agile teams require good social manners (on- and offline) and openness towards others (social, cultural).

Basic knowledge in handling data

are needed by almost all employees. Certain sensitivity in handling data is necessary; this applies in particular to personal and company data. In manufacturing, the combination of specialist knowledge and data evaluation in the sense of a plausibility check is becoming increasingly important (Can this data be correct? What does common sense tell me?).
In-depth knowledge of data protection (GDPR) is required for employees who actively process and use personal data. The handling of sensitive company data (also on company devices) is becoming more and more important as well as the knowledge of how to protect them (malware, external access, loss etc.).

AMS/IBW: New Digital Skills An initiative of AMS Austria Results report, Nov. 2019
https://newdigitalskills.at/

3. Recommendations with focus on social skills

"IT knowledge can be learned quickly,
Social skills take longer,
and they're still more important to us."

AMS/IBW: New Digital Skills

This list of social skills was compiled in the course of a survey of IT experts in the TeBeISi project.

Active listening

'Active listening' means, as its name suggests, actively listening. That is fully concentrating on what is being said rather than just passively ‘hearing’ the message of the speaker. Active listening involves listening with all senses. As well as giving full attention to the speaker, it is important that the ‘active listener’ is also ‘seen’ to be listening - otherwise the speaker may conclude that what they are talking about is uninteresting to the listener. Interest can be conveyed to the speaker by using both verbal and non-verbal messages such as maintaining eye contact, nodding your head and smiling, agreeing by saying ‘Yes’ or simply ‘Mmm hmm’ to encourage them to continue. By providing this 'feedback' the person speaking will usually feel more at ease and therefore communicate more easily, openly and honestly.

Paraphrasing skills

Paraphrasing is an effective form of verbal feedback to use when listening, however it is not simply repetition or “parroting,” but restating another person’s statement in your own words to

gain understanding. Paraphrasing enables the listener to clarify the speaker's meaning and it conveys interest in what the speaker is saying and helps create a supportive environment for the conversation.

Nonverbal communication skills

Non-verbal communication includes facial expressions, the tone and pitch of the voice, gestures displayed through body language (kinesics) and the physical distance between the communicators (proxemics). These non-verbal signals can give clues and additional information and meaning over and above spoken (verbal) communication. Indeed, some estimates suggest that around 70 to 80% of communication is non-verbal.

Effective team-working skills

Working well in a team means: working with a group of people to achieve a shared goal or outcome in an effective way, listening to other members of the team, taking everyone's ideas on board, not just your own, working for the good of the group as a whole, having a say and sharing responsibility. A successful team is one where everyone's unique skills and strengths help the team achieve a shared goal in the most effective way.

Self-study skills

Self-studying is a learning method where people direct their own studying— eg. in informal education and without direct supervision. Since people are able to take control of what (and how) they are learning, self-study can be a very valuable way for many people to learn. Self-study and learning in formal education can be used together to help people get the most out of his or her learning experience. Together, these methods help people learn and retain information better, helping boost comprehension and motivation.

Knowledge sharing skills

Knowledge sharing is the act of exchanging information or understanding between individuals, teams, communities or organizations. Knowledge may be explicit (procedures and documents) or tacit (intuitive and experience-based). Sharing knowledge is an intentional process that not only bolsters an individual's understanding, but helps create or enhance an archive of accessible knowledge for others. The concept of knowledge sharing is important because it helps individuals and businesses be more agile and adaptable in the face of change, and helps ensure continued growth and survival.

Coping with stress

Coping with stress is the process by which a person consciously attempts to master, minimize, or tolerate stressors and problems in life. Good coping skills prevent stress from getting us down and help us thrive. The most common coping techniques identified in the American Psychological Association's 2014 Stress in America survey are: listening to music, physical activity, reading, meditation, praying, going to church, yoga, getting a massage. All of these strategies were rated as effective by more than half the people who used them.

Mentor team colleagues

Mentoring is a formal or informal relationship established between an experienced, knowledgeable employee and an inexperienced or new employee. The purpose of a mentor is to help the new employee quickly absorb the organization's cultural and social norms. The mentor helps the continuing employee grow in their current position and become ready for new jobs and career opportunities. Mentoring can also assist an employee, new to a specific job or area of responsibility, to quickly learn what they need to know to succeed in their job and role.

Taking criticism

Taking criticism is the ability of a person to accept constructive criticisms for improvement, and being able to withstand the pressure of unfair or dispiriting criticisms while motivating himself to work harder and better instead of giving up. Criticism refers to a thorough examination and review of a person's actions or work which is aimed at correcting associated faults, defects, and drawbacks. People who criticize are referred to as critiques.

Openness to change

Openness to change refers to an individual's level of acceptance and conscious awareness of the possibility that change may be needed across a range of situations and scenarios, together with the appetite or drive to enact that change. The main components of openness to change are: acceptance of the need for change, willingness to support the change, positive affect or emotions towards either the change or the potential consequences of the change, an appetite or drive to enact or be involved in the change.

Creativity skills

Creativity means being able to come up with something new. Therefore, creative thinking is the ability to consider something – a conflict between employees, a data set, a group project – in a new way. Creative thinking means looking at something in a new way. It is the very definition of "thinking outside the box." Creative people have the ability to devise new ways to carry out

tasks, solve problems, and meet challenges. They bring a fresh, and sometimes unorthodox, perspective to their work. This way of thinking can help departments and organizations move in more productive directions.

Empathy skills

Empathy is awareness of the feelings and emotions of other people. It is a key element of emotional intelligence, the link between self and others, because it is how we as individuals understand what others are experiencing as if we were feeling it ourselves. Empathy is the ability to accurately put yourself "in someone else's shoes"– to understand the other's situation, perceptions and feelings from their point of view.

BF/M-Bayreuth: TeBeISi, Erasmus+ Strategic Partnership, 2018 - 2021

https://www.bfm-bayreuth.de/projekte/tebevat2-0-2/

Summary of the findings

The most needed skills and abilities in Austria: For many years Hafelekar has been dealing with the target group of the so-called "low-skilled", who generally have a difficult time on the labour market. The additional requirements of digitalization and automation bring new challenges to this group. **It is critical to note that in Austria the recognition of informal and non-formal competences is still in its infancy.** We know from experience that formal educational qualifications are still considered very important and that a rethink is only slowly beginning.

The most important measures regarding digitisation: In Austria, the Federal Ministry for Digitisation (BMDW) was established to promote digitisation on a broad basis. In the BMDW - at the ministry level - the following initiatives and projects, among others, have been launched:

- Digitisation Agency | Digitalisation Agency
- fit4internet - Digital competence in society
- DigComp 2.2 AT
- Digital Campus Vorarlberg

Measures for the "low-skilled" are manifold, here are some best practice examples as described in detail above:

- update training
- Itworks Personnel Service
- CONTEXT - Impulses on the labour market, etc.

Recommendations for low-skilled workers in Austria: The experts consulted for this study seem to agree on the following basic points: **1) It is essential to strive for a higher qualification of groups affected by exclusion. 2) The recognition of informal and non-formal competences is still not sufficiently advanced in Austria.** There is still too much emphasis on formal education and training qualifications. **3) Social inclusion and exclusion tendencies** are still too little considered in the discourse.

Recommendations focusing on digitisation - from a socio-economic perspective: Social enterprises are an important place of learning to enable people who are far from the labour market to participate in the social and digital (working) world: A "Strategy for Digital Inclusion" is called for, which offers the opportunity to create tailor-made labour market policy offers and more social participation for long-term unemployed and disadvantaged people.

New Digital Skills - from a technical to a holistic view. For several years now, special attention has been paid to the changes brought about by digitisation, culminating in 2019 in a special workshop series entitled "New Digital Skills". The results indicate that today's challenges to education and training go deeper than initially assumed. It is clear that technical skills - which are undoubtedly urgently needed - are only one side of the coin. Under certain circumstances, some experts speculate, these may even be the more manageable ones. For it can be seen that through and with digitisation, structures, processes and business models are changing in a way that requires new mind-sets on the part of both employees and managers. Methodological, social and personal skills are thus gaining in importance more than ever before - for all those involved.

The New Digital Skills Report emphasises that "digitisation is not everything". There are also many other influences on work and employment that we should not lose sight of. Demographic development, the continuing increase in urbanization, climate change and mobility with all their interactions are just a few of the aspects that are massively changing the world we live in and the world of work and presenting companies with a wide range of challenges. In conclusion, the call is made to move away from a purely technology-driven perspective and focus on an overall view.

* * *

2. Theoretical Approach

2.1 Identify and explore relevant theories and research evidence which can be used to inform project and tool development

1. Definition of formal and non-formal learning

There exist many varying definitions of informal and non-formal learning throughout the literature. The CEDEFOP definitions of informal and non-formal learning are perhaps the most widely referred to on European level.

Non-formal learning:
Learning which is embedded in planned activities not explicitly designated as learning (in terms of learning objectives, learning time or learning support), but which contain an important learning element. Non-formal learning is intentional from the learner's point of view. It normally does not lead to certification.

Informal learning:
Learning resulting from daily activities related to work, family or leisure.
It is not organised or structured (in terms of objectives, time or learning support). Informal learning is in most cases unintentional from the learner's perspective. It typically does not lead to certification.

Identification, Validation and Accreditation of Prior and Informal Learning.

CEDEFOP Panorama

http://www.bernan.com

In this project we will start from the following definitions, which are based on the "Strategy for the validation of non-formal and informal learning in Austria":

Formal learning
refers to a learning process that takes place in an organised and structured context (school, university, etc.) that is specifically designed to promote learning. As a rule, this leads to the acquisition of a qualification in the form of a certificate or attestation of competence. Formal learning includes education, initial vocational training and higher education systems.

non-formal learning

refers to a learning process that takes place in the context of planned activities (in terms of learning objectives and learning time) and in which learning is supported in a specific form (for example, in a teacher-pupil relationship). It may include programmes to provide skills needed in the workplace, adult literacy and basic education for early school leavers. Typical examples of non-formal learning are in-house continuing training, which companies use to improve the qualifications of their employees, for example in information and communications technology. In addition, structured online learning (for example through the use of open educational resources) and courses organised by civil society organisations for their members, their target group or the general public exists.

Informal learning

refers to a learning process that takes place in everyday life - at work, in the family circle or during leisure time - and is not organised or structured in terms of learning objectives, learning time or learning support It may not be intended from the learner's perspective. Examples of learning outcomes achieved through informal learning are skills acquired through life and work experience. These include the ability to manage a project acquired in the workplace, language skills acquired during a stay abroad or intercultural skills, information and communication technology skills acquired outside the workplace and skills acquired through voluntary, cultural or sporting activities, youth work or activities at home (e.g. childcare).

BMWFW - Strategie zur Validierung nicht-formalen und informellen Lernens in Österreich, Wien 2017
https://www.qualifikationsregister.at/wp-content/uploads/2018/11/Strategie_zur_Validierung_nicht-formalen_und_informellen_Lernens.pdf

2. Characteristic of formal and non-formal learning in Austria

"In Austria, great importance is traditionally attached to formal educational qualifications from school, vocational training or higher education. Non-formal education offers, especially those from the well-developed adult education system, are also increasingly used and accepted. In addition, informally acquired competences - for example at the workplace, in free time or as part of voluntary work - sometimes not sufficiently visible and therefore not duly recognised."

BMWFW - Strategy for the validation of non-formal and informal learning in Austria, Vienna 2017
https://www.qualifikationsregister.at/wp-content/uploads/2018/11/Strategie_zur_Validierung_nicht-formalen_und_informellen_Lernens.pdf

It is characteristic for Austria that formal learning - both in society and with employers - is still of fundamental importance, non-formally acquired competences are rather seen as an extension of formal learning and informal learning is often not even perceived as "learning".

With regard to the education system and alternative forms of learning, Austria can certainly be classified as conservative and traditionalist. The validation of learning outcomes is still in its infancy in Austria. Experts in the educational landscape are increasingly criticising these circumstances and calling for the rapid further development of validation strategies.

Here are the central demands of experts (especially important for low-skilled workers):

Joint teaching of basic and vocational skills

Innovative learning methods, such as the joint teaching of basic skills and vocational competences, can support faster learning, which, by linking it to concrete vocational activities, makes it clear why further training is useful. The aim is to teach the content in an application-oriented context so that participants can quickly see that their basic skills are improving and what they are needed for. A practice-oriented approach can be particularly promising for low-skilled workers, since basic skills are not acquired in isolation in a course room, but rather practical experience is gained in companies and the advantages of improved basic skills become visible in the professional context. At the same time, content is often more solidified when it is practised in a practical environment than when it is only taught in a school context.

Consideration of the requirements of the local labour market

The inclusion of local labour market requirements in the development of course offerings is applied in various countries: In the USA in particular, the regional demand for labour is taken into account in the training of low-skilled workers and care is taken to establish contacts with local companies during the training. By taking local needs into account, the participants are trained for professions that are in demand in the area and have a good chance of making the transition to the labour market after completing their training.

In her study, Ziegler emphasizes that in Austria, too, the so-called "AMS Standing Committee on New Skills" regularly surveys the training and further training requirements of companies in selected sectors in order to be able to respond better to these requirements. She critically notes that even greater emphasis should be placed on cooperation with companies, for example by allowing job-seeking participants to take part in further training courses, internships or taster days in companies in the region.

Promotion of post-secondary education and training

Up to now, little support has been offered in Austria to help people with low skills to make the transition from basic education to continuing vocational training up to post-secondary education and training or to facilitate their access to relevant programmes - this transition could be made smoother and more transparent.

In the USA, and also in Finland, permeability between academic and vocational education and training is more clearly developed. According to Ziegler, access to post-secondary and academic education and training could be significantly improved and the transfer of people from basic education, but also from vocational education and training, in particular from apprenticeships and vocational secondary schools (BMS), could be additionally supported.

Recognition/validation of non-formally and informally acquired competences

Ziegler cites Finland as a best-practice example in the area of recognition of non-formally and informally acquired competences, where already in the 1990s vocational qualifications were described in terms of learning outcomes and procedures were developed for the formal recognition of non-formally and informally acquired competences. Modularisation of course content is offered in Finland in the framework of competence-based qualifications as a way to validate parts of vocational qualifications, e.g. by recognising existing competences or by providing proof of competence at the workplace. This may be of particular interest to low-skilled workers who, due to work experience, have skills that have not yet been recognised.

In Austria, too, some programmes and initiatives are modular, such as the AMS programme "Kompetenz mit System" (Competence with System), where parts of individual apprenticeship occupations can also be acquired in modules. A clear difference, however, is that in Finland all vocational qualifications (more than 370 qualifications in total) can be described and recognised on the basis of competences, whereas in Austria this is currently only possible for a few apprenticeship occupations. An extension of the existing possibilities to all of the approximately 200 apprenticeship occupations can therefore be clearly recommended.

Ziegler, Petra: On the situation of low-skilled workers in Austria and selected international case studies on the recognition of competences and higher qualification, 2016, available online at: https://www.ams-forschungsnetzwerk.at/downloadpub/AMS_info_357_358.pdf

3 Methods and tools for testing/validating formal and on formal learning on European Level and in Austria

Validating and Transparency Tools at EU level

3.1. ESCO as the basis for the description of competence profiles

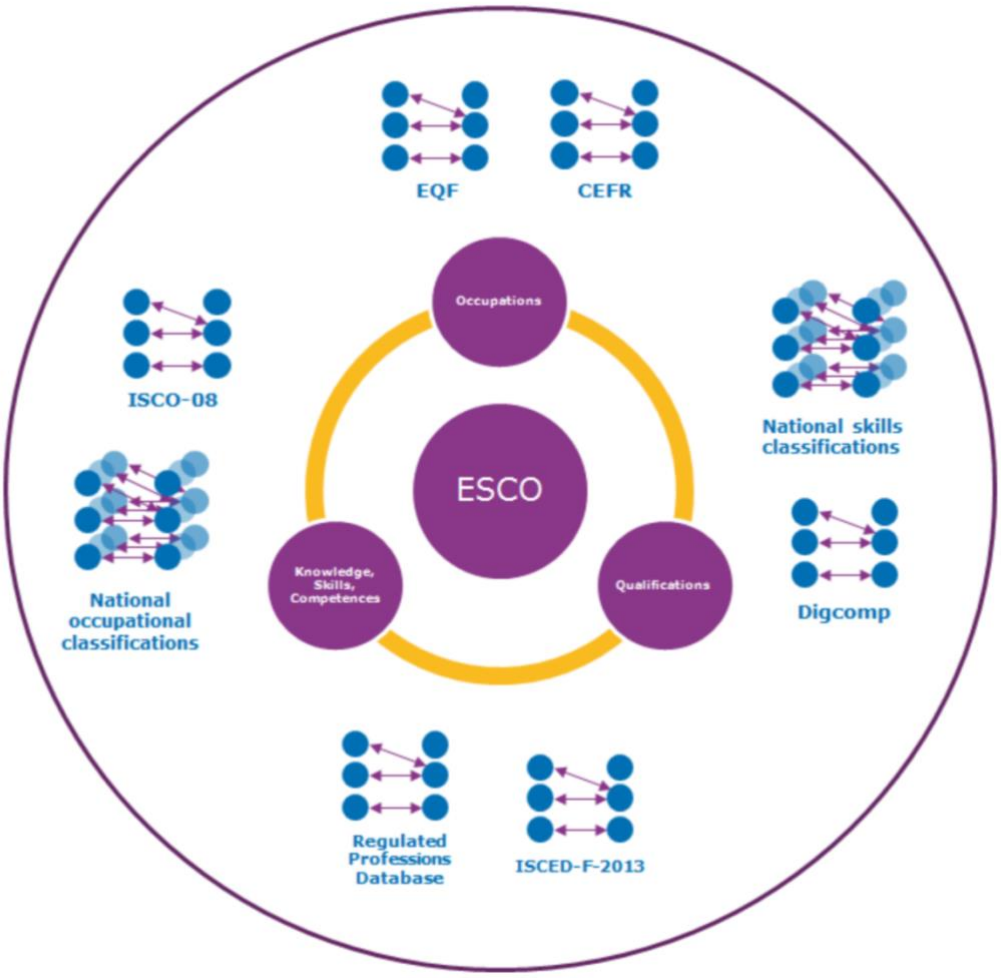
To help bridge the gap between the world of education and training and the labour market, the European Commission is developing ESCO. By introducing a standard terminology for occupations, skills, competences and qualifications, ESCO can help education and training systems and the labour market to better identify and manage the availability of required skills, competences and qualifications. Its multilingual character facilitates increased international transparency and cooperation in the area of skills and qualifications.
However, education provides people with qualifications that differ between Member States. Qualifications do not always keep pace with the evolution of knowledge, skills and competences needed by the labour market. Employment services do not share the same IT and classification systems to manage information on the supply and demand of jobs.

Benefits for our project & FYC client group:

- Education and training institutions can use ESCO in curriculum development and assessment.
- Other organisations developing and/or awarding qualifications can use ESCO to express the learning outcomes of their qualifications, to reflect emerging skill needs and to facilitate the understanding of their qualifications across borders.
- Human resources managers and people offering career guidance can use ESCO to enhance planning and make aptitude or ability tests and skills and interest inventories more accurate.

3.2 ESCO & related EU transparency instruments

ESCO supports other initiatives developed by the European Commission aimed at making labour market and education systems more transparent, stimulating mobility and creating opportunities. Interested parties can reference their classification to ESCO. This is typically done by creating mapping tables that establish a relationship between each concept in their classification to a concept in ESCO. As a result, each party that uses ESCO v1 or a classification that is mapped to it can exchange information across systems and language barriers.



https://ec.europa.eu/esco/portal/document/en/0a89839c-098d-4e34-846c-54cbd5684d24

The Member States and the Commission's activities in the field of regulated professions are reflected in ESCO. As ESCO is based on labour market realities, it makes use of the information in the Commission Database of Regulated Professions on access to professions or their scope of practice in Member States. However, ESCO links to information on the regulatory aspect of occupations, but it does not aim to regulate the access to professions or to define their scope of practice.

By connecting transparency instruments, ESCO provides a clearer and more complete picture of labour market and education-related information. The resulting product is put at the disposal of practical tools through the Linked Open Data approach. This ensures a low threshold for owners of labour market systems to use ESCO and enable better services (see fig. 1).

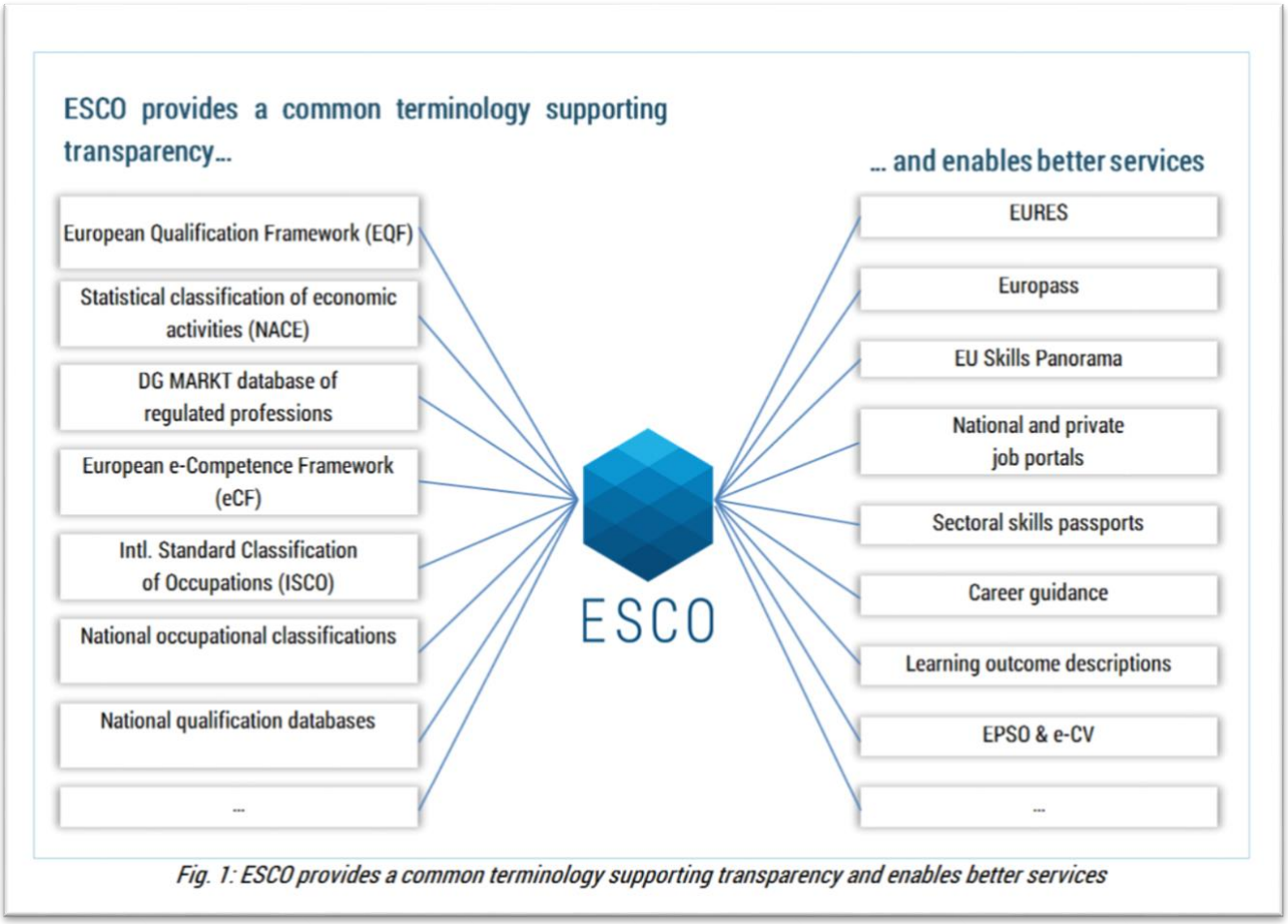


Fig. 1: ESCO provides a common terminology supporting transparency and enables better services

https://ec.europa.eu/esco/portal/document/en/89a2ca9a-bc79-4b95-a33b-cf36ae1ac6db

ESCO, v0 released in October 2013, is updated on a regular base and is published on the ESCO portal, free of charge for everyone and can be visited here: https://ec.europa.eu/esco

3.3 ECVET - Learning Outcomes & Validation

“In simple terms, ECVET is a system which translates learning experiences in VET into units of learning outcomes that build up to a qualification based on ECVET points. This system enhances permeability between education strands as it may be put in parallel to its counterpart ECTS system in Higher Education. The ECVET is a new European instrument for promoting lifelong learning. It should facilitate the recognition and transferability of full vocational qualifications, and awards, or partial vocational qualifications across-borders, hence enhancing and facilitating student mobility across Europe within the VET sector. The whole process is coordinated by tools and a methodological technical framework which should present a systematic way of establishing a common understanding, as well as a user-friendly language for transparency during the transfer and recognition of learning outcomes of study units.”

ECVET in Europe, https://www.cedefop.europa.eu/en/publications-and-resources/publications/5556

3.4 EQF - European Qualifications Framework

In the context of EQF, knowledge is described as theoretical and/or factual. Skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments). ECVET is, so to speak, the important framework into which EQF and NQF are embedded via various tools, with the description of learning outcomes being the central point.

The qualifications pillar of ESCO is developed in a way that is consistent with the EQF. This will allow building on the results achieved during the work on the EQF. National qualification databases will be a valuable source for ESCO.

https://ec.europa.eu/esco/portal/escopedia/European_Qualifications_Framework__40_EQF_41

This closes the circle on how the EQF can be embedded in this type of meta-systems. But let's take a closer look at the idea of the EQF:
The EQF is a tool for transparency, comparability, and translation that makes it possible to compare and understand the various national qualifications throughout Europe. It covers the entire education and training system, from general and vocational training and continuing education to higher education and non-formal and informal learning. The purpose of the EQF and its classification into eight reference levels is to serve as a reference framework for the education systems of member states for mapping their national qualifications. This framework defines eight levels which aim to cover the entire range of educational qualifications. Every level is defined by ‘descriptors’. These descriptors do not refer to aspects such as the training duration, the location of training but to the outcomes of learning processes, that is: what a learner knows understands and is able to do at the end of his/her education or training programme.

“The EQF defines learning outcomes as knowledge, skills and competence. Knowledge is described as theoretical and/or factual. Skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments). In the context of the EQF, competence is described in terms of responsibility and autonomy. As the level increases, the description of the required knowledge-, skills- and competence-related aspects becomes more and more demanding, comprehensive and complex. Whereas Level 1 is characterised by basic knowledge and skills and a low degree of autonomy and responsibility, Level 8 comprises specialist knowledge, highly specialist skills and a high degree of autonomy and responsibility.”

Linking of ECVET - EQF/NQF - Europass: www.ecvet-info.at

The national implementation of the Qualification Framework (mostly called NQR) is inevitably complex because they have to be based on social and cultural traditions and the institutions of the respective country. The EQF Recommendation requires that the link between the levels of national qualifications and the levels of the EQF is defined based on learning outcomes. It is widely acknowledged that there is not a common approach in using learning outcomes; however, a common understanding of the main concepts and principles would facilitate the implementation of common European tools such as the EQF, ECVET, and ECTS, which are all based on learning outcomes.

"The European and national level discussions have also highlighted the need for some common ground with respect to learning outcomes so that European level tools (EQF, ECVET, the developing taxonomies of knowledge, skills and competences) can function efficiently. This does not imply that there should be a common approach to defining and using learning outcomes across countries. As explained above, such a restrictive approach would not account for important differences in the ways in which learning can be described within national systems."

USING LEARNING OUTCOMES, European Qualifications Framework Series: Note 4, https://ec.europa.eu/ploteus/sites/eac-eqf/files/EQF_note4_en.pdf

3.5 European-E-COMPETENCE Framework

The European e-Competence Framework (e-CF) is a common European framework for ICT Professionals in all industry sectors. The European e-Competence Framework version 3.0 (CWA 16234) is published in four parts, which may be downloaded free of charge from the CEN website (www.cen.eu) or the e-CF website: www.ecompetences.eu
The Framework, the User guidelines and sample Case studies are available in English, German, French and Italian versions.
The European e-Competence Framework is a component of the European Union's strategy on «e-Skills for the 21st Century». It is also supporting key policy objectives of the «Grand Coalition for Digital Skills» launched in March 2013. It is promoted as a very useful tool to boost digital skills and the recognition of competences and qualifications across countries and to foster ICT professionalism in Europe.

The European ICT Professional Profiles (CWA 16458:2012) is a set of 23 profiles, which may be used for reference or as a starting point to develop further profiles. This document can also be accessed (free of charge) via the CEN website and the e-CF website.

"Given the growing importance of Information and Communication Technologies (ICT) in the context of the global economy and the enormous potential of this sector in terms of creating employment, there is a need for a common framework that enables ICT professionals to describe and develop their capabilities, and which also allows companies and employers to identify which individuals possess the skills they require."

e-CF brochure by CEN (European Committee for Standardization), www.cencenelec.eu

The European e-Competence Framework (e-CF) version provides a reference of 40 competences as required and applied at the Information and Communication Technology (ICT) workplace, using a common language for competences, skills and capability levels that can be understood across Europe. As the first sector-specific implementation of the European Qualifications Framework (EQF), the e-CF is designed to be used by ICT service, user and supply companies, for managers and human resources (HR) departments, for education institutions and training bodies including higher education, for market watchers and policy makers, and other organizations in public and private sectors.

The e-CF was developed through a process of collaboration between experts and stakeholders from many different countries. The current version 3.0 is marked by overall framework maturity and builds upon multiple application experiences in practice.

3.6 DIGCOMP - The Digital Competence Framework

The European Digital Competence Framework, also known as DigComp, offers a tool to improve citizen's digital competence. Today, being digitally competent means that people need to have competences in all areas of DigComp.

DigComp into Action - Get inspired, make it happen; Publications Office of the European Union, 2018 ©

The Digital Competence Framework helps to monitor citizen's digital skills and to support curricula development.

For policymakers it can be beneficial to know where citizens stand for digital competence at the country level. The EU-wide Digital Economy and Society Index (DESI) offers an indicator for Digital Skills that uses the DigComp framework.
The "digital skills" indicator is one part of the many indicators to measure Human Capital which is needed to take advantage of the possibilities offered by a digital society. The Digital Agenda Scoreboard offers an online tool to view the data in an interactive way.

https://ec.europa.eu/jrc/en/digcomp

DigComp describes which competences are needed today to use digital technologies in a confident, critical, collaborative and creative way to achieve goals related to work, learning, leisure, inclusion and participation in our digital society.

T.1 **DigComp competence areas and competences**

COMPETENCE AREAS	COMPETENCES
1. **Information and data literacy**	1.1 Browsing, searching and filtering data, information and digital content 1.2 Evaluating data, information and digital content 1.3 Managing data, information and digital content
2. **Communication and collaboration**	2.1 Interacting through digital technologies 2.2 Sharing through digital technologies 2.3 Engaging in citizenship through digital technologies 2.4 Collaborating through digital technologies 2.5 Netiquette 2.6 Managing digital identity
3. **Digital content creation**	3.1 Developing digital content 3.2 Integrating and re-elaborating digital content 3.3 Copyright and licences 3.4 Programming
4. **Safety**	4.1 Protecting devices 4.2 Protecting personal data and privacy 4.3 Protecting health and well-being 4.4 Protecting the environment
5. **Problem solving**	5.1 Solving technical problems 5.2 Identifying needs and technological responses 5.3 Creatively using digital technologies 5.4 Identifying digital competence gaps

https://ec.europa.eu/jrc/en/digcomp

Validating and Transparency Tools in Austria

3.7 National Validation Strategy in Austria

In Austria, there is no uniform legal framework to regulate validation and recognition of non-formal and informal learning. There is also no general individual right for individuals to access validation initiatives. The access requirements are defined for each initiative separately. The development of an explicit national strategy including all sectors on the validation of non-formal and informal learning commenced only recently.

National developments towards a national strategy for validation of non-formal and informal learning started in 2013 and are strongly linked to both the Austrian Lifelong Learning Strategy (LLL: 2020, 2011) as well as to the development of the National Qualifications Framework (NQF). The Council Recommendation on validation as well as the implementation of the European Credit System in Vocational Education and Training (ECVET) also play an important role in this process. Steering groups and working groups have been set up for supporting coordination across sectors. Since the 2014 Inventory, important developments have taken place particularly in relation to the national validation strategy and the implementation of the NQF. Until now, there has been no uniform framework for validation and recognition of non-formal and informal learning in Austria.

https://cumulus.cedefop.europa.eu/files/vetelib/2016/2016_validate_AT.pdf

In 2013, a working group (linked to action line 10 and measure 10.3 of the Lifelong Learning (LLL): 2020 strategy) was established for the development of a national validation strategy. In 2015, a consultation document for the national validation strategy (including key objectives and measures) was published and there was also a national consultation process. The results of the consultation process were subsequently analysed and these were used to draft the national strategy for validation of non-formal and informal learning.

The national validation strategy will also serve as the starting point for defining organisational structures and a detailed implementation plan for the coming years.

The **Austrian ECVET strategy** was launched in 2014. One of its aims is to improve the recognition of competences gained in non-formal and informal learning contexts and thereby to support the implementation of the national validation strategy.

The Austrian NQF entered the operational stage. In early 2016 a highly important milestone was achieved: a legal base for the NQF was adopted by the Austrian parliament and the NQF Act came into force in March 2016.

The high number of refugees that came to Austria in 2015 brought about an urgent need to understand their qualifications and competences in order to support their integration into the labour market as well as into society. To this end, the Austrian Public Employment Service (AMS) Vienna, for example, carried out a pilot project for people admitted as asylum seekers between August and December 2015, called 'competence checks' which included elements of validation of informally acquired competences. Further initiatives are currently being set up to address this urgent matter and a national validation strategy intends to provide them with a platform and framework for development and coordination.

The consultation document for the development of the Austrian validation strategy builds on the definition of 'validation' as presented in the Recommendation and suggests the following Country report: Austria 2 distinction (BMBF, 2015a, 7): Based on their key objectives, two approaches for the validation of non-formal and informal learning are distinguished which could be closely interlinked and considered as steps or phases in a comprehensive validation process:

- '**Formative validation' approaches** are personal and individual-based measures which result in the proof of competences obtained independently of defined standards of the qualifications system. The focus is on the identification and documentation of competences.

- **'Summative validation' approaches** are requirements - or standards - based measures which result in obtaining a qualification (or a part of it) of the formal or non-formal context, i.e. the competences of an individual are assessed and certified based on a relevant standard of a formal or non-formal qualification. The focus is on assessment and certification.

Federal Ministry of Education: Strategy for Validation
non-formal and informal learning in Austria, Vienna, 2017
https://www.qualifikationsregister.at/wp-content/uploads/2018/11/Strategie_zur_Validierung_nicht-formalen_und_informellen_Lernens.pdf

3.8 NQF - National Qualifications Framework

In Austria, the NQF Coordination Body (NKS) was set up to take over the central administration, coordination and information point for the NQF - i.e. the adaptation of the EQF - at national level.

https://www.qualifikationsregister.at/service/aufgaben-der-nqr-koordinierungsstelle-nks/

The NQF is an instrument for classifying the qualifications of the Austrian education system. On the one hand, this transparency instrument should facilitate orientation in the Austrian education system and, on the other hand, contribute to the comparability and comprehensibility of national qualifications in Europe.

The aim is to make national qualifications and the Austrian education system understandable at European level, thereby promoting the cross-border mobility of learners and employees and supporting their participation in lifelong learning. Further aims are to increase the transparency of qualifications and to further develop learning outcomes orientation.

The objective of the NQF Act (adopted in 2016) is to use the National Qualifications Framework as an instrument to promote the transparency and comparability of qualifications in Austria and Europe and to promote lifelong learning, which includes formal, non-formal and informal learning.

https://www.qualifikationsregister.at/was-ist-der-nqr/

Validation and NQF

In the further implementation of the NQF, both qualifications from formal education and qualifications acquired outside the formal qualification system (e.g. in continuing vocational training, adult education) should be able to be assigned to one of the eight levels.
In the long term, it should be possible to acquire all qualifications reflected in the NQF, if possible also by validation. The basic prerequisite for this is quality assurance based on learning outcomes and further development of methods and procedures for validation. Learning outcome orientation is a central concept in the NQF and its implementation is a basic requirement for a functioning, recognised system of validation.

NEW! NQF service points

Since 15th of November 2019, the NQF service units have been operational and the NKS has started to allocate non-formal training and further training. NQF service points (NQF-S) are quality assurance sectoral bodies between providers of non-formal qualifications and the NQF Coordination Body (NKS).

The reason for the establishment of such bodies is the diversity of non-formal qualifications on offer in adult education, further education and out-of-school child and youth work, and the high degree of freedom in the design of these offerings.
This poses particular challenges for the NQF classification of qualifications from this area, as there are no overarching responsibilities (regional, institutional, sectoral) or competencies for non-formal qualifications. NQF service points have two central tasks: On the one hand, they should assume an evaluation function in the assignment process with regard to the NQF compatibility of the respective qualification and the appropriateness of the assignment proposal, on the other hand they should support the qualification providers in the preparation of an assignment request and ensure the quality of the assignment request and the traceability of the requested NQF level.
The NQF service centres are active on the initiative of qualification providers; in the non-formal sector, only they can submit a request for assignment, provided that the learning outcomes and their evidence are valid.

A list of the six NQF service centres authorised by the BMBWF is available here:

https://www.qualifikationsregister.at/der-nqr/nqr-servicestellen/

3.9 Youth in Action

The Youth in Action Programme of the European Union - also operational in Austria - makes an important contribution to the acquisition of competences and is therefore a key instrument in providing non-formal and informal learning opportunities with a European dimension for young people.
In order to facilitate the validation and recognition of non-formal learning in the Youth in Action Programme, the decision was taken to develop a specific instrument - Youthpass.

Through the Youthpass process, the reflection on learning becomes more structured and the educational value of the project is strengthened. It makes the participants more aware of their learning. If the participants are more aware of their competences, it will be easier for them to use them in the future. Thus Youthpass supports the future paths of young people.

Youth in Europe: Pathways 2.0 -Ways to recognise non-formal learning/non-formal education and youth work in Europe; Strasbourg, 2011

Summary of the findings

In this project we will start from the following **definitions**, which are based on the **"Strategy for the validation of non-formal and informal learning in Austria"**:
Formal learning refers to a learning process that takes place in an organised and structured context (school, university, etc.) that is specifically designed for learning. As a rule, this leads to the acquisition of a qualification in the form of a certificate or attestation of competence.
Non-formal learning refers to a learning process that takes place in the context of planned activities (in terms of learning objectives and learning time) and in which learning is supported in a specific form (for example, in a teacher-pupil relationship).
Informal learning refers to a learning process that takes place in everyday life - at work, in the family or during leisure time - and is not organised or structured in terms of learning objectives, learning time or learning support.

It is characteristic for Austria that formal learning - both in society and with employers - is still of fundamental importance, non-formally acquired competences are rather seen as an extension of formal learning and informal learning is often not even perceived as "learning".
With regard to the education system and alternative forms of learning, Austria can certainly be classified as conservative and traditionalist. The validation of learning outcomes is still in its infancy in Austria. Experts in the educational landscape are increasingly criticising these circumstances and calling for the rapid further development of validation strategies.
Here we list some **central demands of experts that are particularly important for the group of low-skilled workers**: joint teaching of basic and vocational skills, consideration of the requirements of the local labour market, and the promotion of post-secondary education and training.

The recognition/validation of non-formally and informally acquired competences is emphasised as particularly important: Ziegler cites Finland as a best-practice example in the area of recognition of non-formally and informally acquired competences, where already in the 1990s vocational qualifications were described in terms of learning outcomes and procedures were developed for the formal recognition of non-formally and informally acquired competences. In Austria this is currently only possible for a few apprenticeship occupations. An extension of the existing possibilities to all professions can therefore be clearly recommended.

Validating and Transparency Tools at EU level: To help bridge the gap between the world of education and training and the labour market, the European Commission is developing **ESCO as the basis for the description of competence profiles.** By introducing a standard terminology for occupations, skills, competences and qualifications, ESCO can help education and training systems and the labour market to better identify and manage the availability of required skills, competences and qualifications. By connecting transparency instruments, ESCO provides a clearer and more complete picture of labour market and education-related information.

ECVET is a European instrument for **promoting** lifelong learning. It should facilitate the recognition and transferability of full vocational qualifications, and awards, or partial vocational qualifications across-borders, hence enhancing and facilitating student mobility across Europe within the VET sector.

The **European e-Competence Framework (e-CF)** is a component of the European Union's strategy on «e-Skills for the 21st Century». It is promoted as a very useful tool to boost digital skills and the recognition of competences and qualifications across countries and to foster ICT professionalism in Europe.

The **European Digital Competence Framework (DIGCOMP)** offers a tool to improve citizen's digital competence. Today, being digitally competent means that people need to have competences in all areas of DigComp. The Digital Competence Framework helps to monitor citizen's digital skills and to support curricula development.

Validating and Transparency Tools in Austria: There is no uniform legal framework to regulate validation and recognition of non-formal and informal learning. There is also no general individual right for individuals to access validation initiatives. The access requirements are defined for each initiative separately. The development of an explicit national strategy including all sectors on the validation of non-formal and informal learning commenced only recently. National developments towards a national strategy for validation of non-formal and informal learning started in 2013 and are strongly linked to both the Austrian Lifelong Learning Strategy (LLL: 2020, 2011) as well as to the development of the National Qualifications Framework (NQF).

Validation and NQF

In the further implementation of the NQF, both qualifications from formal education and qualifications acquired outside the formal qualification system (e.g. in continuing vocational training, adult education) should be able to be assigned to one of the eight levels. In the long

term, it should be possible to acquire all qualifications reflected in the NQF, if possible also by validation. Since 15 November 2019, the NQF service units have been operational and the NCP has started to allocate non-formal training and further training.

The Austrian Public Employment Service (AMS) Vienna, for example, carried out a pilot project for people admitted as asylum seekers, called **'competence checks'** which included elements of validation of informally acquired competences. Further initiatives are currently being set up to address this urgent matter and a national validation strategy intends to provide them with a platform and framework for development and coordination.

* * *

3. Identifying and Measuring Soft skills for the Future Labour Market

3.1 Review of theories which underpin INFORM and identifying and measuring soft skills

1. Reviewing the theories which underpin the INFORM tool

We think that the theories underlying the INFORM tool are still relevant by and large, although the demands on employees have increased very rapidly in recent years. The increasing digitalisation will certainly make it necessary to adapt the terminology of the INFORM tool to today's conditions, whereby the "idea behind" is still very much up to date.

In the above chapters, we have already dealt in detail with current reports and studies on the topic and will contribute even more in-depth input in the further course of the project.

In summary, we would like to emphasise once again those overarching aspects that are currently considered very important by experts in the educational landscape in Austria:

"Open-mindedness has become perhaps the most important competence. “

AMS/IBW: New Digital Skills

Today, employees need a **high degree of willingness to change and openness in** order to be able to productively shape the transformation of the company. New project-oriented structures make **initiative and process-oriented thinking** important.
The ability to work in a **team-oriented and flexible manner is** becoming increasingly important. In order to work productively with specialists from other areas of the company, **communication skills** and knowledge of the correct use of **communication tools are** required.

The ability to work together with others, **process understanding as well as interdisciplinary and networked thinking and acting** and the willingness to work in agile teams is an important basis for **mutual understanding** and **productive confrontation with common challenges**.

The willingness to change and the ability to learn are prerequisites for the transformation of processes and structures that will result from digitisation. Due to increasing transparency and

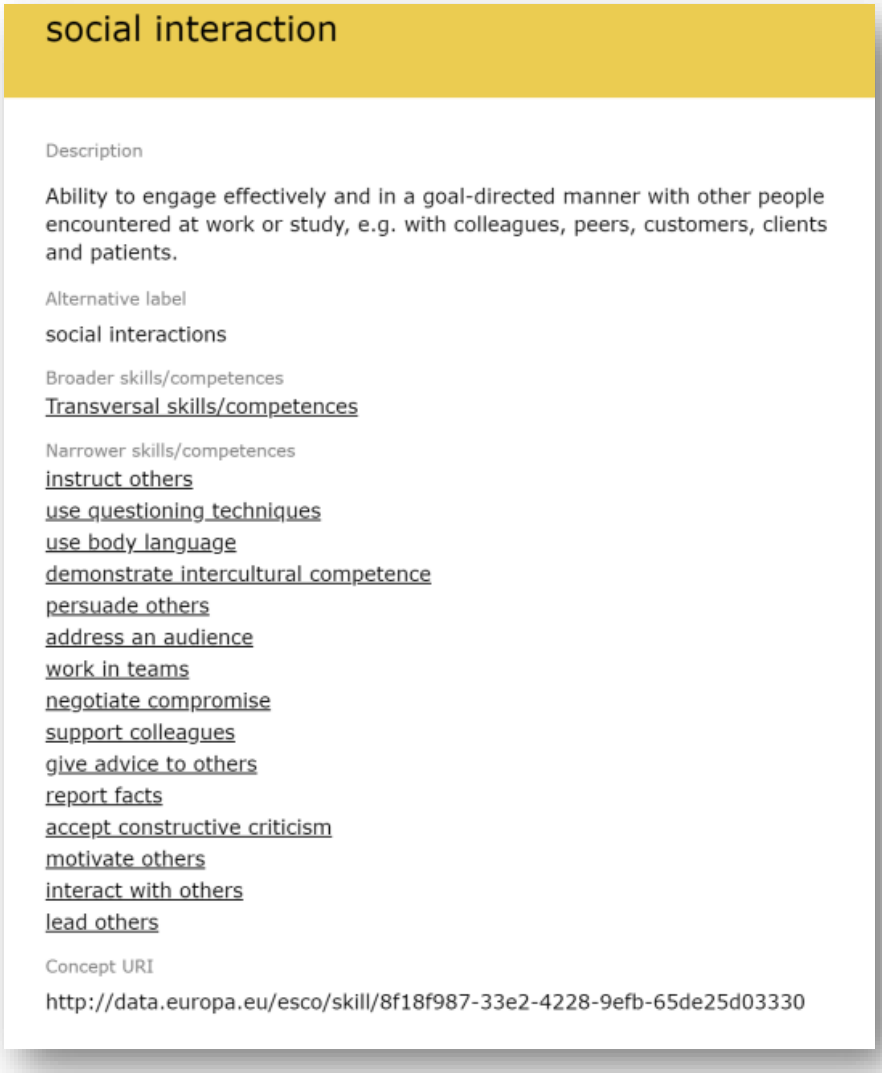
changing communication, **mutual openness and the ability to criticise (error culture) are** becoming particularly important.
Project management knowledge **(What is to be done when?)**, process knowledge **(Who does what when?)** and communication skills **(Who must know what when?) is becoming** increasingly relevant. In addition, mutual (process) **understanding and holistic thinking is** required for the **new type of cooperation.**

The willingness to learn and to participate in further education is required when it comes to the introduction of new tools and systems. Younger **employees** benefit from the many years of **specialist knowledge of older employees** and older employees can obtain support from **younger colleagues in the** operation of **new technologies.** This important **transfer of knowledge** requires communication skills and a willingness to learn.

AMS/IBW: New Digital Skills An initiative of AMS Austria Results report, Nov. 2019
https://newdigitalskills.at/

2. Relevant soft skills frameworks which are useful and applicable to the target group

We have already referred to some approaches to naming soft skills in the points above. Such soft skills frameworks are developed anew in the various programs, initiatives and projects. There is no kind of "standard framework" in Austria. The **ESCO approach** could be interesting for the FYC project. A distinction is made here between the main categories "Transversal Competences/Skills", "Extra Skills" and "Extended Skills". The sub-items currently have the following structure: "Attitudes and values", "Thinking", "Application of knowledge", "Language" and "Social interaction" (see example below): https://ec.europa.eu/esco/portal/skill



social interaction

Description

Ability to engage effectively and in a goal-directed manner with other people encountered at work or study, e.g. with colleagues, peers, customers, clients and patients.

Alternative label

social interactions

Broader skills/competences

Transversal skills/competences

Narrower skills/competences

instruct others
use questioning techniques
use body language
demonstrate intercultural competence
persuade others
address an audience
work in teams
negotiate compromise
support colleagues
give advice to others
report facts
accept constructive criticism
motivate others
interact with others
lead others

Concept URI

http://data.europa.eu/esco/skill/8f18f987-33e2-4228-9efb-65de25d03330

At this point we would like to refer once again to the report by Petra Ziegler (commissioned by AMS): "On the situation of low-skilled workers in Austria and selected international case studies on the recognition of competences and higher qualification". She mentions an example of good practice from Finland, which we would like to present here briefly:

The question is which approaches are available to qualify low-skilled workers more highly or to make their competences visible. Finland has been chosen as the reference country because it leads OECD countries in various international competence measurements, such as PIAAC on key competences for adults. Finland also shares similarities with Austria in terms of size and tradition, such as social partnership. Programmes and measures in the field of vocational and adult education were switched to competence-based qualifications as early as the 1990s, and today there is a comprehensive system of recognition of non-formally and informally acquired competences in Finland.

2.1 Competence-based qualifications ('Näyttötutkinnot')

"Näyttötutkinnot" is regarded in Europe as an example of good practice with regard to the recognition of non-formally and informally acquired competences - mainly due to the long experience of implementation and the detailed elaboration of requirements and assessment criteria for a total of more than 370 vocational qualifications: As early as 1993/1994 the Finnish curriculum for vocational qualifications was reformed and learning outcomes orientation was implemented in the description of qualifications, including assessment criteria based on everyday working life. At the same time, the shift in adult education towards competence-based qualifications ("Näyttötutkinnot") was started. Already in 2007, the process of validation of non-formal and informal learning was further underpinned by the introduction of a regulatory process, known as "personalisation", in the qualifications system. An important target group of this offer are people who want to acquire a formal qualification, have several years of work experience, such as low-skilled workers, and want to have this recognised.

Competence-based qualifications can be acquired for the following areas:

- **Basic vocational qualifications** correspond to a vocational qualification at upper secondary level and include the competence to be able to take over the basic vocational tasks in the respective occupation.
- **Further education qualifications** (or professional examinations) include the competences required of skilled workers. The basic professional qualification is a prerequisite for this qualification and can be acquired after three years of professional experience at the earliest.

- **Qualifications for professional specialisation** (or subject examinations) involve mastery of professional competence at the highest level, which normally requires at least five years' professional experience.

The acquisition of a vocational qualification enables applications to universities and universities of applied sciences, which also supports permeability between the education systems (vocational training - higher education).

Finland is a leader in the recognition of non-formally and informally acquired competences, and all vocational qualifications are described in terms of competences or can be achieved through formal vocational education and training or through competence testing. In the context of these competence tests, professional competences at the workplace, e.g. in the form of concrete work tasks, are demonstrated and assessed by assessors. In order to ensure the quality of recognition, Finland places great emphasis on the support or training of examiners and develops a compulsory training programme for them.

Qualifications or partial qualifications can be achieved flexibly - in the form of single or multiple modules - and by validating non-formally and informally acquired competences, this form of learning is supported and recognised. The possibility of achieving qualifications based on individual modules means that the learning effort is initially manageable and can lead more quickly to partial qualifications by incorporating different learning settings - in addition to formal, non-formal or informal learning.
Especially for low-skilled workers, the recognition of non-formally and informally acquired knowledge can be a first step towards making existing competences visible, showing that formal recognition is possible by clearly linking them to vocational qualifications. In addition, self-confidence and motivation can be built up, since many low-skilled workers are often not even aware of how much knowledge and skills they have or that this knowledge is also relevant to a vocational qualification or can be recognised.

For Austria there are also examples of the recognition of non-formally and informally acquired competences, which - in contrast to Finland - however, always only concern individual occupations, especially apprenticeship occupations, and are intended to support the recognition of competences or the catching up of the apprenticeship certificate. In this area, Austria could offer considerably more in the future and, for example, competence matrices could be developed not only for individual occupations but for all (about 200) apprenticeship occupations.

Petra Ziegler: On the situation of low-skilled workers in Austria and selected international case studies on the recognition of competences and higher qualification
http://www.forschungsnetzwerk.at/downloadpub/AMS_info_357_358-1.pdf

3. Existing tools and methods present to identify measure and/or recognise soft and cognitive skills (worker orientated skills) both nationally and in an EU context.

> "Although there are numerous promising and increasingly used validation initiatives and practical approaches at institutional and regional level, Austria does not yet have a comprehensively coordinated system of validation and recognition of non-formally and informally acquired competences.
>
> Federal Ministry of Education: Strategy for Validation non-formal and informal learning in Austria, Vienna, 2017

Two initiatives that are closely linked to obtaining an apprenticeship qualification based on the validation of professional competences acquired in informal and non-formal learning are of particular relevance in Austria. Both include necessary stages of a validation process. These regional initiatives are:

- "You have skills/competences" ("Du kannst was!')
- "Competence with System" ("Kompetenz mit System")

"You have skills/competences" ("Du kannst was!')
This initiative is aimed at people without a vocational qualification, but who have professional experience, practical skills and knowledge in their profession and are seeking an apprenticeship certificate. Interested parties are advised by various public bodies in Austria (e.g. AMS, AK). In an initial interview it will be clarified whether the requirements for participation are met. In a next step, the project participants will use specially trained trainers to assess their job-related knowledge and skills. Professional experts from the apprenticeship examination offices check the results together with them in an initial qualification check.
Skills and knowledge that are still lacking are subsequently acquired through targeted further training. Finally, the success of further training is determined in a second qualification check and the apprenticeship certificate is issued by the apprenticeship examination office.

https://erwachsenenbildung.at/bildungsinfo/kursfoerderung/10899-ooe-projekt-du-kannst-was.php

"Competence with System" (“Kompetenz mit System”)

Modular vocational training up to the extraordinary apprenticeship certificate is offered. This training takes place in three steps:

The basic course prepares you for the start of your career and a training certificate is issued. At the same time, participants can find out whether and how you can continue your education. **In an advanced course** the participants deepen their knowledge in their profession. Those who already have practical experience in the profession or who have started an apprenticeship in this field can enter the advanced course crosswise. **In the final course** the participants are specifically prepared for the extraordinary apprenticeship-leave exam. Depending on how far you have progressed in your apprenticeship training, you can also enter crosswise. In the courses and in practice they learn everything they need for the extraordinary apprenticeship-leave exam.

https://www.ams.at/arbeitsuchende/karenz-und-wiedereinstieg/so-unterstuetzen-wir-ihren-wiedereinstieg/kms-kompetenz-mit-system#wien

The following regional initiatives that have been introduced in Vienna are also linked to alternative pathways for obtaining apprenticeship qualifications that include validation:

- "Qualification Pass Vienna" and
- „Recognition system Vienna: My chance – I have competences!”

Both measures are part of the “Vienna 2020 Qualification Plan” which is a comprehensive, joint strategy for reducing the percentage of people with a low formal education in Vienna.

Qualification Pass Vienna

The ‘Qualification Pass Vienna’ (Qualifikationspass Wien) was developed through cooperation between the Public Employment Service Vienna (AMS Wien) and the ‘waff’ (Vienna Employment Promotion Fund). The „Qualification Pass Vienna” is a document supported by a specific data base. It facilitates the systematic identification of qualifications and competences and the documentation of education and training completed, courses attended or certificates received. Non-formally as well as informally acquired competences are also documented. It provides information on which parts of a vocational qualification (apprenticeship) have already been achieved and which parts are still missing. This documentation is the basis for the planning and realisation of further training and should be used for guiding the person towards the apprenticeship examination.

https://www.wien.gv.at/arbeit-wirtschaft/qualifikationsplan.html

“Recognition system Vienna: My chance – I have competences!”

This initiative (Wiener Anerkennungssystem: Meine Chance - ich kann das!) was developed in cooperation with social partners, vocational schools in Vienna, the Public Employment Service Vienna (AMS Wien) and the ‘waff’ (Vienna Employment Promotion Fund). It also supports the acquisition of an apprenticeship qualification. The apprenticeship examination comprises a theoretical and a practical part. The theoretical part is waived for candidates who have successfully completed an accredited course or the responsible vocational school attests that the required theoretical knowledge has been achieved. Candidates are supported in the development of an individual portfolio documenting the theoretical knowledge; this is included in the ‘Qualification Pass Vienna’.

https://www.zib-training.at/kurs/wiener-anerkennungssystem-lap/

In Austria, there is no clear distinction between qualifications acquired in adult education and other educational sectors. Several preparatory courses are offered in adult education institutions ('Second Chance Education') for the purpose of obtaining formal qualifications e.g. for completion of compulsory schooling or for completion of the Higher Education Entrance Examination in an alternative way. Non-formal qualifications that could be considered as CVET are also offered by adult education institutions. Furthermore, there are various validation processes offered in this area that do not lead to a qualification at all (as defined by the NQF).

Examples from CVET (continuing vocational education and training) and adult education

Recognising professional experiences in CVET courses offered by higher education institutions: Several courses offer opportunities for the recognition of professional experiences. The concrete procedures are usually decided by the head of the individual course and relevant information is usually available on the websites of the higher education institutions. However, there is no overview or further detailed information available. Some examples include:

- **QUALI-QIBB:** Based on the concepts developed in the EU project VET-CERT, the training programme ‘certified quality process management for `QIBB’ (zum/zur zertifizierten Qualitätsprozessmanager/in für QIBB) has been piloted (starting in autumn 2013) through cooperation between Austrian Reference Point for Quality Assurance in VET (ARQA-VET) and the University College of Teacher Education Upper Austria. The training programme comprises 12 ECTS and is based on validation of prior learning (formal, non-formal and informal) recognition and exemption can be granted by the head of the training programme.

https://www.qibb.at/wer_ist_qibb/personalentwicklung/quali_qibb.html

- **Academy of Continuing Education (Weiterbildungsakademie, wba):** The wba in the sector of adult education is considered a model-approach for recognising formal, non-formal and informal learning of adult educators in Austria and has been presented in more detail in previous Inventory reports. The wba certifies and issues degrees to adult educators according to defined standards. A framework curriculum has been developed and people active in adult education can have credits awarded for their acquired competences, skills, and practice periods. The acquired competences are documented in an e-portfolio and missing competences can be acquired at different educational establishments for adults. Certificates are offered on two levels: wba-certificate - certified adult educator (rated at 60 ECTS18) and wba-diploma - graduate adult educator (rated at 60 ECTS, with specialisation in one of four fields of adult education: teachers/trainers, education managers, counsellors, and librarians). The wba aims to facilitate links between the adult learning sector, CVET, and higher education and to enhance the professionalisation of adult learning. The wba-certificates can be considered as non-formal qualifications.

https://wba.or.at/de/

Several types of validation arrangements offered in Austria are closely linked to the labour market (some of them are also closely linked to CVET). Only a few of these arrangements have a legal basis. Some of these arrangements aim at obtaining a non-formal qualification, certificates, or titles, whereas others are linked to various other aims (such as defining salary structures or supporting personnel development in companies). Some examples of different types of validation arrangements:

- proof of relevant occupational experience as part of entry requirements for regulated occupations,
- awarding of the professional title engineer (Ingenieur),
- proof of relevant occupational experience as part of collective agreements,
- certification of competences of individuals (personal certification),
- supporting company personnel development,
- supporting low-qualified people who are in the process of obtaining a qualification outside of the formal system

https://epale.ec.europa.eu/en/content/la-vita-e-bella

Skills audits in Austria

There are no systematic or nationally standardised measures for skills audits in place but there are several initiatives aimed at identifying and analysing an individual's competences, aptitudes and motivations in order to (re-)define a career pathway. Such procedures are mainly offered in adult learning institutions but are also offered by the Public Employment Service or by freelanced guidance practitioners or coaches. Skills audits are not offered systematically and usually individuals have to pay for these procedures (however, in some cases funding is available).

Some of the procedures developed in the Austrian Adult Education sector build on established methods, such as the Swiss Qualifications Handbook (CH-Q) System of Managing Competencies'; others have developed new methods. Some examples are presented below.

"waff - competency balance"

The 'waff' (Vienna Employment Promotion Fund) is a regional initiative that offers skills audits for people with low qualifications as well as for individuals who are not able to benefit from their qualifications in Vienna because they have been obtained outside of Austria. The skills audit is based on the competence model developed by John Erpenbeck und Lutz von Rosenstiel and is part of a coaching process.

https://ec.europa.eu/migrant-integration/index.cfm?action=media.downloaduid=2AE6592A-FF78-7537-1194E394470703C6

"Competence profile KOMPAZ"

The centre for the recognition of competences at the Adult Education Centre Linz (Volkshochschule Linz) offers workshops for identifying non-formally and informally acquired competences (from all areas of life and work). **The Swiss Qualifications Handbook (CH-Q)** System of Managing Competencies is used for methodological orientation. The results of competence identification are compiled using a competence profile created through the portfolio method.

The CH-Q was established in 2001 in Switzerland with the aim of making it possible for young people and adults to record and document formal, informal and previously acquired skills in a process oriented way and to apply for the validation of these skills. It is conceived as a portfolio and contains comprehensive instructions on how to use the instrument. It is in the form of a folder with a wide variety of forms enabling a clear, systematic, and chronological sorting and filing of evidence, references, and individual remarks and notes. It is intended to encourage and support the process of self-reflection.

Some third-sector institutions have also developed approaches for validating competences gained in voluntary activities. One example that is considered good practice in Austria is presented below.

"Austrian Volunteer Passport"

The Austrian Volunteer Passport was introduced, providing certification of competences and qualifications obtained through volunteering that can be documented and properly demonstrated in the passport. It was developed by the Ministry of Employment, Social Affairs and Consumer Protection in cooperation with a personnel-consulting agency. It enables volunteers to use them to complement their job applications. The certificate gives information on the time spent by the volunteer on a voluntary activity, the person's function within the organisation, the volunteer's tasks, skills, competences and attitudes (such as social competences and ability to cope with stress, commitment, willingness to accept responsibility, motivation, self-discipline, persuasiveness, leadership and management competences) as well as all relevant professional competences (such as language competences, IT competences).

http://www.freiwilligenweb.at/de/nuetzliches/freiwilligenpass

Up to date there are no legally binding standards in place to support validation.

For the acquisition of certificates/qualifications of the formal education system (such as 'exceptional admission to the final apprenticeship exam', the 'acquisition of lower secondary school qualifications by adults' or other so called external exams), the same education and training standards used in formal education and training are taken into account in the assessment process.

In the case of apprenticeship training, this also includes occupational standards (the occupational profile associated with a qualification). Procedures also exist for acquiring certification without any corresponding qualification in the formal system. Such procedures are often focused on recording individual development processes.

Some measures have developed their own standards (for example, the certification offered by the Academy of Continuing Education (Weiterbildungsakademie, wba) or the competence identification procedure offered by KOMPAZ – see above - , others are more or less oriented towards the procedures and standards used in the formal educational system.

Here we list once again the methods and tools that we have already presented elsewhere in this report:

VALIDATION - EUROPEAN LEVEL

- European Commission: European Digital Competence Framework for Citizens (DigComp)
- ESCO as the basis for the description of competence profiles
- ECVET - Learning Outcomes & Validation
- EQF - European Qualifications Framework
- European E-COMPETENCE Framework
- DIGCOMP - The Digital Competence Framework
- Youth in Action
- "Näyttötutkinnot" Goodt-Practice example from Finland
- BF/M-Bayreuth: TeBeISi, Erasmus+ Strategic Partnership, 2018 - 2021

VALIDATION - NATIONAL LEVEL

- National Validation Strategy in Austria
- NQF - National Qualifications Framework
- Digitalisierungsagentur | Digitalisation Agency: https://www.ffg.at/dia
- fit4internet - Digital competence in society: https://www.fit4internet.at/
- Digital Campus Vorarlberg: https://www.digitalcampusvorarlberg.at/
- update training: https://www.updatetraining.at/
- Itworks personnel service: https://www.itworks.co.at/
- CONTEXT: https://www.context.at/
- arbeit plus: https://arbeitplus.at/

DIGITAL COMPETENCE AUSTRIA

- Werde-digital - Initiative to promote digital media literacy, including a list of learning opportunities: www.werdedigital.at
- Digital competence model - DigComp 2.2 AT; including competence check for digital everyday competences: www.fit4internet.at
- FUTUR - Dialogue with the future: Map for the competences of the future: www.futur.at
- Europass: Digital competences - self-assessment grid: https://europass.cedefop.europa.eu/sites/default/files/dc_-_de.pdf
- AMS-Continuing Education and Training Database - Check the AMS-Continuing Education and Training Database for regional offers on the subject of digitisation: www.ams.at/weiterbildungsdatenbank

DIGITISATION OF THE WORLD OF WORK AND OCCUPATION

- AMS Qualification-Barometer - AMS provides information on labour market and qualification trends at: www.ams.at/qualibarometer
- Job-Futuromat: Could a robot do my job? https://job-futuromat.iab.de/
- Digital professions: How digital are you? https://www.digitaleberufe.at/

DIGITISATION INITIATIVES

- Platform Industry 4.0 Austria: http://plattformindustrie40.at
- Research Atlas - Future Technologies: http://www.forschungsatlas.at/zukunftstechnologien/
- Fraunhofer Austria: Services for companies: https://www.fraunhofer.at/de/leistungen-fuerunternehmen.html
- Digital Austria: https://www.digitalaustria.gv.at/

SUPPORT PROGRAMMES - AUSTRIA-WIDE

- SMEs digital: https://www.kmudigital.at/

- AMS qualification support: https://www.ams.at/unternehmen/
- Database on educational funding: Check out Austria-wide and regional funding programmes for education and training: https://bildungsfoerderung.bic.at/

FEDERAL STATES: INFORMATION, SUPPORT & PROMOTION FOR COMPANIES & PEOPLE

- Vienna: Vienna Business Agency: https://wirtschaftsagentur.at/
- Vienna: WAFF - Digi-Winner: https://www.waff.at/foerderungen/digi-winner/
- Bgld: Economy Burgenland https://wirtschaft-burgenland.at/
- Lower Austria: Digitisation Strategy Lower Austria: http://www.noe-digital.at/
- Lower Austria: Economy 4.0: https://www.wirtschaft40.at/
- Upper Austria: Business Upper Austria: https://www.biz-up.at/
- Slbg: Salzburg Innovation Service: https://www.itg-salzburg.at/
- Tyrol: Standortagentur: https://www.standort-tirol.at/
- Tirol: IntegrationsKompass: https://www.tsd.gv.at/tiroler-integrationskompass.html
- Tyrol: digital.Tyrol: https://www.digital.tirol
- Vlbg: Wirtschaftsstandort Vorarlberg: https://www.wisto.at/
- Stmk: Steirische Wirtschaftsförderungsgesellschaft: https://www.sfg.at/
- Ktn: Kärntner Wirtschaftsförderungs Fonds: https://kwf.at/
- Ktn: Kärnten Digital: https://www.kaernten-digital.at/

Summary of the findings

We think that the theories underlying the INFORM tool are still relevant by and large, although the demands on employees have increased very rapidly in recent years. The increasing digitalisation will certainly make it necessary to adapt the terminology of the INFORM tool to today's conditions, whereby the "idea behind a name" is probably still very much up to date. In summary, we would like to emphasise once again those overarching aspects that are currently considered very important by experts in the educational landscape in Austria:

Today, employees need a **high degree of willingness to change and openness in** order to be able to productively shape the transformation of the company. New project-oriented structures make **initiative and process-oriented thinking** important.
The ability to work in a **team-oriented and flexible manner is** becoming increasingly important. In order to work productively with specialists from other areas of the company, **communication skills** and knowledge of the correct use of **communication tools are** required. **Willingness to change and the ability to learn** are prerequisites for the transformation of processes and structures, **mutual openness and the ability to criticise (error culture)** are particularly important. A **willingness to train and further education** is required when it comes to the training and introduction of new tools and systems. Younger **employees** benefit from the many years of **specialist knowledge of older employees** and older employees can obtain support from **younger colleagues in the** operation of **new technologies.**

Relevant soft skills frameworks which are useful and applicable to the target group
We have already referred to some approaches to naming soft skills in the points above. Such soft skills frameworks are developed anew in the various programs, initiatives and projects. There is no kind of "standard framework" in Austria. The **ESCO approach** could be interesting for the FYC project. A distinction is made here between the main categories "Transversal Competences/Skills", "Extra Skills" and "Extended Skills". The subheadings currently have the following structure: "Attitudes and values", "Thinking", "Application of knowledge", "Language" and "Social interaction".
Ziegler mentions an example of good practice from Finland, which also appears interesting for our FYC project:
"Näyttötutkinnot" is seen in Europe as an example of good practice with regard to the recognition of non-formally and informally acquired competences: Already in 2007, the process of validation of non-formal and informal learning was further underpinned by the introduction of a regulatory process, known as "personalisation", in the qualifications system. Especially for

low-skilled workers, the recognition of non-formally and informally acquired knowledge can be a first step towards making existing competences visible, showing that formal recognition is possible by clearly linking them to vocational qualifications. In addition, self-confidence and motivation can be built up, as many low-skilled workers are often not even aware of how much knowledge and skills they have.

Existing tools and methods present to identify measure and/or recognise soft and cognitive skills (worker orientated skills) both nationally and in an EU context.

To date, Austria does not have a comprehensively coordinated system of validation and recognition of non-formally and informally acquired competences. We have summarised the most important national and regional methods and tools above.

Skills audits in Austria: There are no systematic or nationally standardised measures for skills audits in place but there are several initiatives aimed at identifying and analysing an individual's competences, aptitudes and motivations in order to (re-)define a career pathway. Such procedures are mainly offered in adult learning institutions but are also offered by the Public Employment Service or by freelanced guidance practitioners or coaches. Skills audits are not offered systematically and usually individuals have to pay for these procedures (however, in some cases funding is available).

Some of the procedures developed in the Austrian Adult Education sector build on established methods, such as the Swiss Qualifications Handbook (CH-Q) System of Managing Competencies'; others have developed new methods. Some measures have developed their own standards (for example, the certification offered by the Academy of Continuing Education (Weiterbildungsakademie, wba) or the competence identification procedure offered by KOMPAZ, others are more or less oriented towards the procedures and standards used in the formal educational system (refer to the list in the section above, where we collected various initiatives, tools and examples on European and national/regional level).

4. Summary of Desk Research

Areas of the labour market in Austria that show significant changes cannot be identified by specific sectors or industries, but rather by occupational groups and activities. The **occupational groups** potentially **most affected by automation are unskilled workers** while academics are the least affected. Predictions on the effects of digitisation and automation indicate that people with low levels of education will find it even more difficult to remain in the labour market in the future. However, the changes in the world of work go far beyond digital technologies: trends such as internationalization, diversification or ecologization will also influence the professional landscape in Austria in the coming years.

A **general trend is that physical work is becoming less and less necessary**, as many professions are increasingly dominated by technology and heavy physical work is increasingly being performed by machines and equipment. Digitalisation is making its entrance and so even the less qualified are confronted with increasing technical requirements. In addition, multidisciplinary skills are becoming increasingly important: languages play a major role, and due to the increasing service orientation, activities with customer contact play a central role.

In Austria we can clearly identify one major impact of recent developments and technological changes to the world of work: **The trend towards higher qualifications and professionalisation is continuing, making** it increasingly difficult for occupational groups with lower qualification levels to survive in the labour market. The topic of "digitisation" was placed high on the list of priorities by political decision-makers in Austria. The clear mandate is to ensure that the population, regardless of age, background and even educational status, has the opportunity to acquire digital literacy. In recent years, numerous measures have been launched to promote digitisation on a broad basis.

The additional requirements brought about by digitalisation and automation mean that **new challenges are** facing **the group of "low-skilled" workers.** Here, too, there are numerous efforts to counteract this with programmes, initiatives and projects. It is critical to note that in Austria the recognition of informal and non-formal competences is still in its infancy. We know from experience that formal educational qualifications are still considered very important and that a rethink is only slowly beginning.

New Digital Skills - from a technical to a holistic view. For several years now, special attention has been paid to the changes brought about by digitisation, culminating in 2019 in a special workshop series entitled "New Digital Skills". The results indicate that today's challenges

to education and training go deeper than initially assumed. It is clear that technical skills - which are undoubtedly urgently needed - are only one side of the coin. Under certain circumstances, some experts speculate, these may even be the more manageable ones. For it can be seen that through and with digitisation, structures, processes and business models are changing in a way that requires new mindsets from both employees and managers. **Methodological, social and personal skills are thus gaining in importance more than ever before - for all those involved.**

It is characteristic for Austria that formal learning - both in society and with employers - is still of fundamental importance, non-formally acquired competences are rather seen as an extension of formal learning and informal learning is often not even perceived as "learning".
With regard to the education system and alternative forms of learning, Austria can certainly be classified as conservative and traditionalist. The validation of learning outcomes is still in its infancy in Austria. Experts in the educational landscape are increasingly criticising these circumstances and calling for the rapid further development of validation strategies.

There is **no uniform legal framework to regulate validation and recognition of non-formal and informal learning** in Austria. There is also no general individual right for individuals to access validation initiatives. The access requirements are defined for each initiative separately. The development of an explicit national strategy including all sectors on the validation of non-formal and informal learning commenced only recently. National developments towards a national strategy for validation of non-formal and informal learning started in 2013 and are strongly linked to both the Austrian Lifelong Learning Strategy (LLL: 2020, 2011) as well as to the development of the National Qualifications Framework (NQF).

We think that the theories underlying the **INFORM tool** are still relevant by and large, although the demands on employees have increased very rapidly in recent years. The increasing digitalisation will certainly make it necessary to adapt the terminology of the INFORM tool to today's conditions, whereby the "idea behind a name" is probably still very much up to date.

The ESCO approach could be interesting **for the FYC project.** A coordination of the project results on European level could be enriching for both systems.

5. Qualitative inquiry in the partner countries

5.1 Implementation of the survey in interviews and focus groups by Hafelekar and feedback from the people involved.

Hafelekar has a broad national network in educational and vocational guidance, social work, to trainers and coaches in the VET environment and to public authorities in the education sector. We have briefly presented the idea of the FYC project to this network and asked interested people to actively get in touch with us. Many people accepted this invitation and in a next step we took care to mix the group of people to be interviewed well in order to obtain the broadest possible feedback.

A) Focus group with guidance practitioners: meeting in Innsbruck

Workshop (4h) with **3 practitioners** under the direction of Paul Schober/Hafelekar

- Presentation of the FYC project (and the INFORM tools)
- Collection of questions from the participants
- Documentation of the feedback (in writing by Hafelekar)

This procedure was also followed for the interviews:

B) Interviews with 6 employers: 5 meetings and 1 Skype meeting
Paul Schober and Karin Lackner (Hafelekar): about 2 hours per participant

C) Interviews with 3 clients (system users): 2 Skype meetings and a telephone interview
Karin Lackner (Hafelekar): about 2 hours per participant

D) Interviews with 3 guidance practitioners: meetings
Paul Schober and Karin Lackner (Hafelekar): about 2 hours per participant

A total of 15 people with great interest took part in the FYC-Field Research.

6. The Changing World of Work, Stakeholder Experiences

6.1 Please describe your stakeholder experiences of automation in the workplace. Include Practitioner, Employer and Service User Feedback

Regarding the changes in their work environment – incl. automation and digitisation - the stakeholders describe the following challenges in everyday work (some examples):

From the perspective of the consultants:

- "Advising people with low qualifications of all age groups is a priority for us. With regard to automation, older clients in particular are very afraid of being "rationalised away" or not being able to find a job at all (especially in the craft sector). In consulting, it is important to us to counteract dramatization and to show people perspectives within the scope of their possibilities. Therefore, it is all the more important to make existing competences visible".
- "We encourage our clients to take their "digital competences" - which are present in everyday life - seriously themselves: e.g. smartphones are actually small computers, so you can learn to use a computer system in a job. It is a lot about taking away fear and giving courage. On the other hand, of course, it takes courageous employers who have confidence in the less qualified and are willing to invest in their further training."
- "It is to be hoped that the recently launched digitization offensives in Austria will result in more money for training and continuing education courses in the future. We have many interested parties, but too few cheap (or free) providers. This gap must be closed."
- "Digitisation is of course a big issue, but we have an even bigger one in our work with refugees from various countries of the world, and that is linguistic competence. Without a good knowledge of German, it is still very difficult to gain a sustainable foothold in the labour market in Austria. As the classic unskilled worker jobs become fewer and fewer, language skills, but of course many other skills are also gaining in importance. A positive aspect of digitalisation is that there are, for example, good and inexpensive language learning apps that we can recommend to our clients. Besides the linguistic aspect, it is important for refugees to strengthen them on various levels. Making competences already acquired visible is a good start".
- "To be honest, we consultants also sometimes have problems understanding very technical job profiles and explaining them to clients. Digitisation also affects our own

competences. Regular further training has also become much more important in our field. In addition, we are constantly working with new tools internally and must adapt to many changes."

From the perspective of the employers:

- "As the owner of a leather manufactory, I mainly employ craftsmen. My best employees are already at a mature age and have never had anything to do with computers or complex machines. It is extremely difficult to take away people's shyness when dealing with new systems. Fortunately, we are active in a niche sector where craftsmanship is more important: We handle many special requests and special orders from customers who are willing to pay a good price for our services. I couldn't go into mass production with my team."
- "In our hotel business, reception staff are challenged to constantly learn new systems and programs. It is important to be able to use several booking platforms, to do marketing via social media channels or to be able to use the CMS for the homepage. Then there are internal programs for room availability, the accounting system, a tool for personnel allocation, the ordering system, right up to the cash register system at the bar and the accounting system. As an owner with an affinity for technology, I find it easy to deal with these requirements. But actually it is already very much and I am probably sometimes too impatient with my staff members."
- "As the owner of a graphics agency, I now spend about a third of my working time familiarizing myself with new systems, programs and apps. The developments - especially in the field of film production and website development - are so rapid that I sometimes have existential fears. Another topic for us is information security and data protection. Here I rely on external experts, as I am not able to train my employees in all these areas. When I take on new employees, digital literacy is the top priority. It is a pity to say that, because a creative industry should be about the creativity of the applicants. But everyday life is different these days."
- "When I look at my work as a managing director over the last 20 years, I only realize how much digitization has changed my everyday life: In the past, the focus was clearly on personal discussions with customers. I had to wait a few days for requested documents to arrive by mail (there were no e-signatures yet), etc. Today, I have much less personal contact with customers, since everything is handled by sometimes very specialized systems and collaboration tools. On the positive side, we work much more efficiently and overall shorter, as a lot of travel time can be saved. When it comes to

welcoming new employees, they must have good digital skills. But since our systems are very specific, we must train the employees anyway. It is very rare that applicants have worked with the same programmes before."

- "In the medical field, digitization is becoming increasingly important. Due to the strict data protection regulations, great care must be taken not to make any mistakes in the transmission of patient information, to comply with data protection regulations overall, and to design the documentation in such a way that the rights of patients are safeguarded. Under these circumstances, even scheduling appointments with patients becomes difficult. As a small company, we purchase ready-made database solutions and train our employees internally. When we take in new people, the human being is still the most important thing. Well, at least for now ;)"

From the client's (system users) perspective:

- "I took the European Computer Driving Licence and got a job. Unfortunately, I had to leave after only 3 weeks, because the employee said I was much too slow. Of course, I continue to practice at home, but you can only really learn how to handle the various programs and company-specific requirements on the job."
- "Now in my early 20s, it is very important for me to invest even more in my education so that I have several pillars to stand on. Everyone says that the demands of the working world are becoming increasingly complex, but that can be exciting. The difference is probably that you can no longer rely on vocational training. I want to be as flexible as possible and try different things."
- "Since I was never interested in computers, I have a really hard time finding a new job. As a geriatric nurse I used to dedicate my time to the patients - except for team meetings and a little documentation. Today it seems to me that the various software programs for documentation are more important than the people themselves. There is also much less talk in the team than before. The technical requirements also have disadvantages."
- "Job profiles often sound very complicated. Sometimes I have the feeling that only top technical experts are being sought. I often felt very lost. My guidance practitioner then showed me how to "decipher" these job profiles. With the help of search engines and some research, you can quickly find out what is really behind the technical terms: Often it is very simple things or terms that refer to the handling of very special software. If this is the case, I write in my application that I am very interested in learning this software knowledge. I also list my personal skills.

7. Identifying and Measuring Soft skills for the Future Labour Market

7.1 Please provide us with examples of effective tools and methods used to capture *formal and non-formal learning*

Name of tool or method	Short description (2-5 sentences max)	link to source	Why this method relevant (3-6 sentences)
[FORMAL] The Austrian education system (including ISCED levels)	In Austria, there are two established systems of educational and vocational guidance, which are in exchange with each other: Educational and career guidance in educational and training institutions as well as information services on careers and further education by the Public Employment Service and other counselling institutions. The active role of the social partners (career information centres and counselling services of the Economic Chambers, counselling services of the Chambers of Labour) in career guidance is an important feature of the Austrian guidance system.	https://www.bildungssystem.at/	The central educational policy objectives in the area of guidance are defined in the national lifelong guidance strategy (LLG Strategy), which provides a general framework for the further development of educational guidance and career counselling as an integral part of the strategy for lifelong learning in Austria. Bildungssystem.at offers ▪ an overview of all formal qualifications in Austria ▪ including assignment to ISCED levels ▪ References to the EQF/NQF In this system, all educational levels are described in detail, from kindergarten to higher education and adult education. At the end there is a reference to the possible next training steps.
[FORMAL/NON-FORMAL] Europass Austria Certificate Supplement	The Europass Certificate Supplement supplements vocational education and training diplomas. The Certificate Supplement describes ▪ Training path and competence profile of the respective qualification ▪ possible occupational fields and access to the next level of training	https://www.europass.at/was-ist-europass/zeugniserlaeuterung/	The Europass Certificate Supplement facilitates the recognition of vocational education and training abroad and supports the entry into the European labour market. This document will be attached to the original diploma. Europass Certificate Supplements are produced in Austria in German and English and can be downloaded as PDF files.
[FORMAL/NON-FORMAL] AMS qualification barometer	The AMS Qualification Barometer is an indispensable instrument for all those who are interested - privately or professionally - in the development of the labour market and the need for qualifications, due to the wealth of data it contains, its topicality, its	http://bis.ams.or.at/qualibarometer/kompetenzstruktur.php	The Qualification Barometer provides a wealth of information on formal and non-formal competences: ▪ Professional professional competences by sector ▪ Certificates and diplomas ▪ Interdisciplinary professional competences: with the categories "Special skills and problem-solving

	forecasting function and last but not least its clear presentation.		competences", "Physical demands", "Personal attitudes and values", and "Social competences The Qualification Barometer is thus an important tool for career counsellors, but also allows jobseekers to compare their CV with these profiles.
[FORMAL] AMS Training Compass	The AMS Training Compass provides detailed information on suitable training for the desired profession. Here all training opportunities in schools, academies and universities in Austria are described in detail. The interactive tool shows the steps to achieving a formal qualification in the desired profession.	https://www.ausbildungskompass.at	Detailed descriptions of the training courses show which prerequisites must be met and which educational institutions offer the training courses, as well as the professions and further training opportunities after completion. ▪ The Ausbildungskompass offers a unique link between training and professions - and provides information about suitable training for the desired profession. ▪ The focus is on training leading to a formally recognised qualification (school-leaving certificate, Matura, academic degree, etc.) or entitling the holder to exercise a recognised profession.
[FORMAL/NON-FORMAL] Recording of competences for the final apprenticeship certificate:	The dual system is very important in Austria and therefore there are various initiatives & projects to record competences regarding catching up on an apprenticeship. More detailed descriptions are provided by the individual counselling centres.	▪ https://www.esf.at/projekt/du-kannst-was/ ▪ https://www.ams.at/arbeitsuchende/karenz-und-wiedereinstieg/so-unterstuetzen-wir-ihren-wiedereinstieg/kms-kompetenz-mit-system#wien ▪ https://www.wien.gv.at/arbeit-wirtschaft/qualifikationsplan.html	These initiatives are aimed at people without a vocational qualification, but who ▪ Work experience, ▪ practical skills and ▪ have knowledge in their profession and ▪ are aiming for an apprenticeship certificate. Interested parties are advised by various public bodies in Austria (e.g. AMS, AK).

7.2 Please provide us with examples of effective tools and methods used to *identify/measure soft skills*

Name of tool or method	Short description (2-5 sentences max)	link to source	Why this method relevant (3-6 sentences)
The Job IMPULS Method	The Job IMPULS method is a web-based consulting assistant with extensive possibilities. The valid identification of holistic factors that promote and hinder integration in people with complex problems is a comprehensive and time-consuming process.	https://www.jobnet.ag/JobnetAG/	Due to its empirical basis, the Job IMPULS method helps to identify essential factors and to discuss them with the client. The method consists of different modules and can be adapted to the needs of consulting companies and their clients.

			This method is already being used successfully in various AMS projects.
The hamet method	Test procedures for recording and promoting professional and social skills. This funding diagnostic instrument is characterized in particular by compliance with scientific standards and practice-oriented application. The test procedures enable differentiated statements and can be used for specific target groups.	https://www.hamet.eu/	▪ Module 3 allows statements about social skills in professional situations. The evaluation of the action-oriented team and PC tasks are evaluated objectively using a standardized observation sheet. ▪ Module 4 uses PC tasks to test the ability to think in a networked way, especially with regard to the recognition of errors. In addition, statements can be made regarding the ability to concentrate and sustained attention.
Career.balance of competence	It is becoming increasingly important to focus on one's own competencies. One of the largest private job portals in Austria offers a self-test to determine soft skills.	https://www.karriere.at/c/karriere-kompetenzbilanz	This test is used by consultants, coaches, applicants and entrepreneurs. All groups agree that the recognition of personal social skills and their further development are becoming increasingly important.
waff competence balance	The 'waff' (Vienna Employment Promotion Fund) is a regional initiative that offers skills audits for people with low qualifications as well as for individuals who are not able to benefit from their qualifications in Vienna because they have been obtained outside of Austria.	https://www.waff.at	The skills audit is based on the competence model developed by John Erpenbeck und Lutz von Rosenstiel and is part of a coaching process. https://ec.europa.eu/migrant-integration/index.cfm?action=media.downloaduid=2AE6592A-FF78-7537- 1194E394470703C6
Competence profiles KOMPAZ	The centre for the recognition of competences at the Adult Education Centre Linz (Volkshochschule Linz) offers workshops for identifying non-formally and informally acquired competences (from all areas of life and work) based on the Swiss Qualifications Handbook (CH-Q).	www.kompetenzprofil.at	The Swiss Qualifications Handbook (CH-Q) System of Managing Competencies is used for methodological orientation. The results of competence identification are compiled using a competence profile created through the portfolio method.

7.3 Please provide us a list of *informal or non-formal activities* as identified by your stakeholders

Guidance practitioners

1.) Training activities for consultants	*Many of the consultants have noted that it is primarily important for them to keep up to date: both with regard to new technical requirements, completely new emerging job profiles and the associated demands on their clients.*
2.) Better recording of informal and non-formal competences. These must be made visible.	*The fact that formal educational qualifications are still so important in Austria is criticised. Even people who have already worked in a profession for many years and have a lot of practical experience must - at least to a large extent - complete formal vocational training in order to obtain an official certificate. In our fast-moving world of work this is often difficult.* *The educational system is perceived by many counsellors as too rigid and does not adapt enough to practical conditions.* *The situation is particularly difficult for low-skilled persons who often feel overstrained - both by the strict requirements of the education system and the high demands of companies.*
3.) Demand for a regulated recognition of non-formal and informal competences.	*Austria is only at the beginning of recognition processes in these areas. The interviewed advisors hope that there is more political movement and that we will soon arrive at a binding framework. Here, too, they stress that particularly low-skilled people are affected. This "non-recognition" of competences (e.g. degrees and qualifications acquired abroad) often leads those concerned into precarious employment relationships. If the courage to go on, it is very difficult for clients to improve the situation.*

Employers

1.) We demand more flexibility from all sides.	*We live in fast-moving times, in which many changes are coming to entrepreneurs. However, in doing so, we are required to comply with legal principles that are often no longer up to date (e.g. Austrian labour law is one of the most complex in Europe, many of the requirements of the Trade Licensing Act are so outdated that they no longer make sense, etc.). Many of the legal foundations urgently need to be revised in order to be able to respond to the flexibility - which is both increasingly demanded of the market and employees.* *An official recognition of non-formal and informal competences would greatly help entrepreneurs to deploy employees more flexibly.*
2.) Participation in further education measures with regard to digitisation.	*Entrepreneurs are often overwhelmed by the many new requirements themselves. Many would like to participate more in further education activities themselves or take advantage of favourable counselling services. Many are willing to invest in the further training of employees. It is also a requirement to be allowed to employ suitable staff without an official training qualification. From the point of view of entrepreneurs, formal qualifications are not always the most important thing.*
3.) We are looking for employees with common sense.	*Formal educational qualifications and professional competence may be important. Many entrepreneurs stress that one key competence is even more crucial: common sense - i.e. the ability to think for oneself in a rapidly changing world of work. With regard to this competence in particular, a survey of soft skills and social competences would be very helpful in order to better identify suitable persons.*

Service users

1.) Further training is considered important	*Many clients emphasise the importance of further training for them. Here is an apt example: "In the discussions with my careers advisor, I realised that I have to be open and flexible in this rapidly changing world of work. I try to get my formal degree and then add further education. Unfortunately, many measures that interest me are not formally recognised. I hope that the entrepreneurs will also appreciate these non-formal competences".*
2.) It is important not to lose courage	▪ *Older workers are aware that they can no longer learn everything about digitisation.* ▪ *Low-skilled workers are struggling to move from often precarious employment to sustainable jobs.* ▪ *Refugees are in a particularly difficult position as they usually do not have a secure residence status and are dependent on political decisions.* *These are just three examples of people for whom recognition of their competences - which they have acquired in their everyday lives - would be particularly important. Some consultants stressed that in these cases it is a matter of encouraging and showing possible perspectives.*
3.) Employers are called upon to give opportunities	*We have given above the example of a young client who successfully completed the computer driving licence, but then was "too slow" in her job and lost her job within the first month.* *This is probably the best way to describe our ever faster moving world of work. We think it is important to emphasize here to give people a fair chance (in this case a little more time).*

7.4 Briefly describe why your stakeholders think it important to identify and measure formal and non-formal learning

For educational advisors it is important

- to encourage their clients by making them aware of their strengths,
- to find suitable job profiles based on informal and non-formal competences,
- and perhaps show their clients completely new career prospects.

Identifying missing competences is important in order to be able to determine the next steps in education and training more precisely.

For entrepreneurs it is important

- to better assess the suitability of applicants,
- broadening the job profile/area of work by means of informal and non-formal competences,
- and to work out longer-term development measures with the employees.

The holistic recording of employees' competencies facilitates the planning of areas of application and further development possibilities.

For clients (service users) it is important

- to be able to expand their formal portfolio through informal and non-formal competences in order to
- to be able to prepare their curriculum vitae in a comprehensive manner, and
- to plan their training and further education needs in a more holistic way - also with regard to social skills.

Being able to clearly identify one's own competences, apart from formal training, is important in the search for a sustainable employment relationship from which both sides will benefit.

7.4 Please provide us with a list of *soft skills* used in informal and non-formal activities, as identified by your stakeholders

Guidance practitioners

1.) openness to change	*Openness to change refers to an individual's level of acceptance and conscious awareness of the possibility that change may be needed across a range of situations and scenarios, together with the appetite or drive to enact that change. The main components of openness to change are: acceptance of the need for change, willingness to support the change, positive affect or emotions towards either the change or the potential consequences of the change, an appetite or drive to enact or be involved in the change.*
2.) self-study skills	*Self-studying is a learning method where people direct their own studying— eg. in informal education and without direct supervision. Since people are able to take control of what (and how) they are learning, self-study can be a very valuable way for many people to learn. Self-study and learning in formal education can be used together to help people get the most out of his or her learning experience. Together, these methods help people learn and retain information better, helping boost comprehension and motivation.*
3.) taking criticism	*Taking criticism is the ability of a person to accept constructive criticisms for improvement and being able to withstand the pressure of unfair or dispiriting criticisms while motivating himself to work harder and better instead of giving up. Criticism refers to a thorough examination and review of a person's actions or work which is aimed at correcting associated faults, defects, and drawbacks. People who criticize are referred to as critiques.*

Employers

1.) Effective team-working skills	*Working well in a team means: working with a group of people to achieve a shared goal or outcome in an effective way, listening to other members of the team, taking everyone's ideas on board, not just your own, working for the good of the group as a whole, having a say and sharing responsibility. A successful team is one where everyone's unique skills and strengths*

	help the team achieve a shared goal in the most effective way.
2.) knowledge sharing skills	*Knowledge sharing is the act of exchanging information or understanding between individuals, teams, communities or organizations. Knowledge may be explicit (procedures and documents) or tacit (intuitive and experience-based). Sharing knowledge is an intentional process that not only bolsters an individual's understanding but helps create or enhance an archive of accessible knowledge for others. The concept of knowledge sharing is important because it helps individuals and businesses be more agile and adaptable in the face of change and helps ensure continued growth and survival.*
3.) Mentor team colleagues	*Mentoring is a formal or informal relationship established between an experienced, knowledgeable employee and an inexperienced or new employee. The purpose of a mentor is to help the new employee quickly absorb the organization's cultural and social norms. The mentor helps the continuing employee grow in their current position and become ready for new jobs and career opportunities. Mentoring can also assist an employee, new to a specific job or area of responsibility, to quickly learn what they need to know to succeed in their job and role.*

Service users

1.) openness to change	*Openness to change refers to an individual's level of acceptance and conscious awareness of the possibility that change may be needed across a range of situations and scenarios, together with the appetite or drive to enact that change. The main components of openness to change are: acceptance of the need for change, willingness to support the change, positive affect or emotions towards either the change or the potential consequences of the change, an appetite or drive to enact or be involved in the change.*
2.) Active listening	*'Active listening' means, as its name suggests, actively listening. That is fully concentrating on what is being said rather than just passively 'hearing' the message of the speaker. Active listening involves listening with all senses. As well as giving full attention to the speaker, it is important that the 'active listener' is also 'seen' to be listening - otherwise the speaker may conclude that what they are talking about is uninteresting to the listener. Interest can be conveyed to the speaker by using both verbal and non-verbal messages such as maintaining eye contact, nodding your head and smiling, agreeing by saying 'Yes' or simply 'Mmm hmm' to encourage them to continue. By providing this 'feedback' the person speaking will usually feel more at ease and therefore communicate more easily, openly and honestly.*
3.) creativity skills	*Creativity means being able to come up with something new. Therefore, creative thinking is the ability to consider something – a conflict between employees, a data set, a group project – in a new way. Creative thinking means looking at something in a new way. It is the very definition of "thinking outside the box." Creative people have the ability to devise new ways to carry out tasks, solve problems, and meet challenges. They bring a fresh, and sometimes unorthodox, perspective to their work. This way of thinking can help departments and organizations move in more productive directions.*

7.6 Briefly describe why your stakeholders think it important to identify and measure ***soft skills*** relevant to the work place.

For educational advisors, skills such as openness and willingness to change are particularly important in order to work well with clients. They would like to work with people who consider it important to be criticized in order to gain insight on one's own professional and personal competences; therefore, willingness to learn is another important field.

For entrepreneurs, the skills for efficient team working and the successful exchange of knowledge are of great importance. Many wishes for employees who can think comprehensively, understand business processes and can advise and train colleagues. The issue of openness to change is also frequently raised by entrepreneurs.

It is important for clients (service users) to be given the opportunity to find, maintain or develop a job that suits them. Here too, openness to change is at the top of the list of competencies. The ability to relate to others, to fit in with a team, to show appreciation and initiative are the most important points mentioned, along with creativity.

8. Main Findings and Conclusions

8. 1 Please describe your main findings and implication after the finalization of the interviews/focus groups.

In this section we summarize the results of the general report once again and highlight those findings that we consider particularly important for the FYC project:

We have found that striking **changes in the Austrian labour market** are not so much linked to specific sectors or industries, but rather to occupational groups and activities. The so-called "low-skilled" (mainly unskilled workers) are the group most affected by the changes - including digitisation and automation - and many of these workers are increasingly being forced into precarious employment.
According to the forecasts of the AMS Qualification-Barometer, important growth sectors of the Austrian labour market are construction & ancillary construction industry, mining, office jobs, electrical engineering, telecommunications & IT, trade, mechanical engineering, social affairs & health, as well as tourism and the hotel and restaurant industry. However, these growth sectors are also following a trend: **physical work is declining**, but **technical** and **interdisciplinary skills are becoming increasingly important**: **languages** - especially good German and English - play a major role, and due to the increasing service orientation, **activities involving customer contact are** becoming more and more important.

In Austria, **the trend towards higher qualifications and professionalisation is continuing,** making it increasingly difficult for occupational groups with lower qualification levels to survive in the labour market. All in all, it can be said that through and with digitisation, structures, processes and business models are changing in a way that requires new mindsets on the part of both employees and entrepreneurs. **Methodological, social and personal skills are thus gaining in importance more than ever before - for all those involved.**

Unfortunately, there is **no uniform legal framework to regulate validation and recognition of non-formal and informal learning** in Austria. There is also no general individual right for individuals to access validation initiatives. The access requirements are defined for each initiative separately. The development of an explicit national strategy including all sectors on the validation of non-formal and informal learning commenced only recently and are strongly linked to both the Austrian Lifelong Learning Strategy (LLL: 2020, 2011) as well as to the development of the National Qualifications Framework (NQF). It is critical to note that in Austria the recognition of informal and non-formal competences - despite the many efforts mentioned

above - is in its infancy and formal educational qualifications are still considered essential. In this respect, both the education experts cited above and the participants in our survey call for a rapid change in thinking and action. One sentence sums up the challenge well:

"Open-mindedness has become perhaps the most important competence. “

AMS/IBW: New Digital Skills

This **open-mindedness is aimed at all parties involved in the process**: Decision-makers in the field of education policy must be held accountable, as must employers, consultants and employees. In summary, we would like to **emphasize** again those **overarching aspects that** seem **particularly important to us for the FYC project:**

- A high degree of **willingness to change and openness to be** able to productively shape the transformation of the company. New project-oriented structures make initiative and process-oriented thinking important.

- The **ability to work in a team-oriented and flexible manner is** becoming increasingly important. In order to work productively with specialists from other areas of the company, **communication skills** and knowledge of the correct use of **communication tools are** required.

- **Willingness to change and the ability to learn** are prerequisites for the transformation of processes and structures, mutual openness and the **ability to criticise** (error culture) are particularly important.

- **A willingness to train and further education** is required when it comes to the training and introduction of new tools and systems. Younger employees benefit from the many years of specialist knowledge of older employees and older employees can obtain support from younger colleagues in the operation of new technologies.

Summary of our conclusions:

- The **FYC project can** make a very important contribution to **this change process.** Already during the presentation of the project objectives during the survey with guidance practitioners, entrepreneurs and clients (service users), numerous questions were asked and the wish was expressed to be informed about the project results.

- With this **project we are obviously at the pulse of time**, as different groups - not least education experts - are campaigning for better documentation of non-formal knowledge, for highlighting informally acquired competences and for bringing them together to form a comprehensive record of a person's competences.
- We believe that the **theories underlying the INFORM tool** are still relevant, even though the demands on employees have increased very rapidly in recent years. The increasing digitalisation will certainly make it necessary to adapt the terminology of the INFORM tool to today's conditions, whereby the "idea behind a name" is probably still very much up to date.
- **The ESCO approach could** be interesting for the **FYC project.** A distinction is made here between the main categories "Transversal Competences/Skills", "Extra Skills" and "Extended Skills". The subheadings currently have the following structure: "Attitudes and values", "Thinking", "Application of knowledge", "Language" and "Social interaction". Coordination of the project results at European level could be beneficial for both systems.
- We should also take a closer look at a **good practice example from Finland**: **"Näyttötutkinnot"** is seen in Europe as an example of good practice with regard to the recognition of non-formally and informally acquired competences: Already in 2007, the process of validation of non-formal and informal learning was further underpinned by the introduction of a regulatory process, known as "personalisation", in the qualifications system. Especially for low-skilled workers, the recognition of non-formally and informally acquired knowledge can be a first step towards making existing competences visible, showing that formal recognition is possible by clearly linking them to vocational qualifications. In addition, self-confidence and motivation can be built up, as many low-skilled workers are often not even aware of how much knowledge and skills they have.