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A Holistic Approach for Upskilling Competences of SMEs, VET Institutions and VET Providers for Preparing the Future Works in the Digital Era

- Hol Up -

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IO1 - Analyze the gap between existing competences and expected future competences of SMEs and VET institutions/providers for future jobs in partner countries

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Contents

1. The Key Characteristics of the VET systems in Partner Countries

The Vocational Education and Training (VET)[1] is a broad concept, which is understood differently across countries as well as by leading international organizations at a European and global level. Within the scope of the HOLUP project, differences regarding VET systems emerged in the countries (Turkey, Italy, Czechia, Spain, Portugal, Ireland and Romania) where the project was carried out, confirming the mentioned difference. In this context, in the first part of the report, the key characteristics of the VET system and country profiles will be presented. The Key Characteristics (*Main structure of the VET, VET Institutions, Decision Making in the VET, Financing of the VET, Access to the VET, Dropout Reduction Strategies in the VET, The VET Qualifications, Monitoring of the VET providers, and Transition to the Labor Market*) of the VET systems for each country are presented separately below.

Table 1. The Key Characteristics of the VET systems

Main structure of the VET
VET Institutions
Decision Making in the VET
Financing of the VET
Access to the VET
Dropout Reduction Strategies in the VET
The VET Qualifications,
Monitoring of the VET providers
Transition to the Labor Market

The main structure of the VET shows the general components of VET systems in the partner countries. Under VET Institutions, VET providers in the countries were compiled. Under Decision Making in the VET, planning and decision-making mechanisms in VET processes have been discussed, and in addition, the authorities decide on the contents of VET have been compiled. Financing of the VET shows how VET is financed in countries and the different financing structures in the partner countries. Access to the VET includes students' access to the VET system and strategies to improve this access. Dropout Reduction Strategies in the VET includes countries' Dropout Reduction Strategies. The VET Qualifications contains the outcomes of the VET system. Monitoring of the VET providers includes strategies for quality assurances in countries. Transition to the Labor Market includes strategies implemented to engage the main target groups in the labor market after VET.

[1] Cedefop defines VET as "*education and training which aims to equip people with knowledge, know-how, skills and/or competences required in particular occupations or more broadly on the labor market"* (Cedefop, 2014, p. 292) – thereby deliberately not referring to any level or sector of the education and training system.

1.1. Country Profile –TURKEY

Main structure of the VET

VET in Turkey is provided at upper-secondary and post-secondary levels. Upper-secondary VET programs could be enrolled by individuals initially at 9th grade. Vocational and technical secondary education is offered through public and private schools, all of which are under the supervision of MoNE. Post-secondary VET is mostly offered by vocational higher schools in universities.

VET Institutions

Vocational and Technical Anatolian High Schools, Multi Programed High Schools, Vocational Training Centers, Fine Arts High Schools, Vocational Open Educational Schools, and Vocational higher education schools & technical education schools in universities.

Decision Making in the VET

Vocational education policies and activities are mostly carried out by the MoNE within the framework of Law No. 3308, which came into force in 1986. Directorate General for Vocational and Technical Education were constituted under MoNE and carry out studies for the management of schools and institutions that provide vocational and technical education and training. Also, Directorate General for Vocational and Technical Education carry out the necessary studies for the development of policies and strategies that will strengthen the relationship between education and employment, and to promote vocational education, to implement the determined policies and to coordinate its implementation.

MoNe builds strong collaborations for continuous development and adaptation of curriculum with sector representatives (Özer, 2019a, 2019b). Collaborations has been built with Ministry of Culture and Tourism, Ministry of Science, Industry and Technology, Ministry of Customs and Trade, Ministry of Justice, Ministry of Youth and Sports, Turkish Patent and Trademark Office, The Union of Chambers and Commodity Exchanges of Turkey (TOBB), Istanbul Chamber of Industry (ISO), Istanbul Chamber of Commerce (ITO), Ankara Chamber of Industry (ASO), Ankara Chamber of Commerce (ATO) (Özer, 2021). Recently, VET curriculum has been updated with active participation of such stakeholders and sector representatives and the curriculum has been more attuned to National Occupational Standards (NOS) prepared by Vocational Qualifications Authority (VQA) (Canbal et al. 2020). The necessary skills and competences are determined by VQA Executive Board by considering the employment capacity, primary needs of labor market, and the recommendations of related stakeholders. NOS and the competences are updated in every 5 years (MoD of Turkey, 2018).

Financing of the VET

VET in public schools or education centers is free of charge. The finance of VET is mostly provided by the state. Besides central management budget allocated for VET in public institutions, there are additional resources provided for VET as follows (MoNE of Turkey, 2014). • Incomes provided through the Law No. 3308 • Allocations into education through international projects • Incomes attained through grants or NGOs • Incomes attained through circulating capital enterprise in schools The costs of practical education offered in private enterprises are covered by them based on the Law. For vocational open educational schools, learners might pay a small amount of tuition fee. However, VET in private institutions is financed by learners.

Access to the VET

VET in the public institutions is free and funded centrally. There are also specific incentives facilitating a better access to VET. Career counsellors available in schools enable a better planning of future career as well as pursuing a higher VET education. There are some scholarship programs funded through the state, NGOs, international projects, or private sectors. MoNE offers approximately 330 Turkish Liras (for 2021) per month for successful but disadvantaged students. This offer is also towards pupils in VET institutions. Some prominent NGOs in Turkey provide monthly scholarships. For instance, Turkish Education Association (TEV) provides 300 Liras per month for selected disadvantaged students for a better access to VET. Some internationally funded EU projects also promotes VET in Turkey. For instance, the project “Promoting Integration of Syrian Kids into the Turkish Education System (PIKTES)” enable disadvantages students to receive approximately 200 Turkish liras per month for a three years period. There are also some privately funded scholarships for successful VET pupils to promote their training in the expected areas.

Dropout Reduction Strategies in the VET

School dropout is one of the vital problems in Turkish education system for the educational attainment of pupils. Turkey is in a disadvantageous position among OECD member countries in terms of early school leaving (Zorbaz & Özer, 2020). Some preventive as wells as recovery (to an extent) precautions are taken in Turkish education system. Recovery precautions could be referred to open vocational education schools. Pupils who dropped out from mainstream schools for some reasons (e.g. necessity to partially or fully work in daytime) have a possibility to attend open education. In case of meeting the success requirements, they have a right to attain a diploma. Preventive precautions are more efficient to eliminate dropout. Though systematic preventive studies regarding the solution of school dropout problem are not encountered in Turkey (Yıldız & Eldeleklioğlu, 2018), there are some initiatives that teachers and/or school administrators take as follows: effective communication with parents, informative seminars towards parents, improvement in schools' physical opportunities, increase in social activities in schools and giving responsibility to pupils (Aküzüm et. al. 2015). Improving school counselling services and building dropout tracking and preventing commissions would contribute the solution of the problem (Eryılmaz Ballı et al. 2020). MoNE's 2023 education vision documents also refer to the necessity to improvement guidance services in VET institutions (MoNE of Turkey, 2018b).

The VET Qualifications

Lower secondary education graduates attend upper secondary school VET programs, and those who successfully completed the requirements are given a High School diploma in the area and branch, a transcript of records, and the right to access to post-secondary education as well as the right to attend to university examination (YKS). A supplement in the form of Europass is given to those graduates upon individual application. Those who follow the craftsmanship training in vocational education centers hold a Certificate of Craftsmanship. In case of achieving additional courses, they are possible to attain an upper-secondary school diploma. Graduates can open workplaces with their craftsmanship certificates. Graduates from vocational higher schools are given an associate degree diploma, a transcript of records, diploma supplement, and the right to transit into faculties in the case of achieving the university examination (DGS) specific to those graduates. Besides, graduates from technical education schools or faculties attain a degree diploma (in bachelor's degree), a transcript of records, and diploma supplement in the form of Europass. A vast majority of the programs offer Europass supplements.

Monitoring of the VET Providers

Directorate General for Vocational and Technical Education is in charge of quality assurance for VET providers. Quality Assurance System, established recently in 2019, functions basically in three steps. Subsequent to Directorate's publishing and continuous update of the quality assurance guide, first VET institutions prepare self-evaluation reports indicating their own opportunities, visions and main potential activities in a proof-based approach. Then external evaluation reports are prepared by a committee consisting of either Directorate staff and/or sector representatives. Finally, directorate provides a detailed feedback to VET providers. This recently established system aims to improve assurance culture in VET institutions, and also to support them for enabling them a better-quality assurance.

Transition to the Labor Market

Career guidance and counselling services as a support mechanism in transition to labor market are implemented mainly in two ways. During education, career guidance services are presented to pupils for better planning of future education as well as jobs based on their skills. Subsequent to education, public guidance services provided by ISKUR are presented to individuals for matching their competences with potential jobs. ISKUR employs many job and career counsellors to facilitate matching job seekers' competences with potential job opportunities. Though it has a high number of applications from candidates, no reports about its quality is encountered.

1.2. Country Profile –ITALY

Main structure of the VET

VET in Italy is provided via National Professional Education Courses and Regional Professional Education and Training (IFP). The Professional Education courses include a two-year unitary course and a three-year course aimed at deepening the training of the student according to the possible declinations of the specific address. The three-year and four-year VET pathways can be provided by the Training Agencies, professional training structures accredited by the Regions.

VET Institutions

Vocational Training Agencies of national competence, The training agencies for the provision of vocational training of regional competence.

Decision Making in the VET

Both national technical and professional institutes, as well as those supervised by the Regions, specific guidelines are defined that include disciplinary sheets in which the learning outcomes are identified, declined in knowledge, skills and competences.

The Italian education and training system is organized according to the principles of subsidiarity and autonomy of educational institutions. The State has exclusive legislative competence for the "general rules on education" and for the determination of the essential levels of services that must be guaranteed throughout the national territory. The State also defines the fundamental principles that the Regions must respect in the exercise of their specific competencies. The Regions have concurrent legislative power in matters of education and exclusive power in matters of education and professional training. State educational institutions have autonomy in teaching, organization, research, experimentation and development.

Financing of the VET

Schools in Italy are mostly state-run. Non-state schools can be paritarian or purely private. The status of paritary school is recognized to schools run by private individuals or local authorities (municipalities and provinces) on the basis of compliance with specific conditions. Paritarian schools perform a public function and are authorized to issue qualifications having the same legal value as those of the corresponding state schools. The State directly finances state schools through funds provided in the budget of the Ministry of Education, University and Research. Parity schools, insofar as they perform a public function within the national education system, are recipients of funding on the basis of specific criteria and parameters (Ministerial Decree of 21 May 2007). Priority must be given to non-profit schools. As far as funding for vocational education and training of regional competence is concerned, there are different sources of funding depending on the type of course. The State directly finances state schools through funds provided in the budget of the Ministry of Education, University and Research. Parity schools, as they perform a public function within the national education system, are recipients of funding based on specific criteria and parameters (Ministerial Decree of 21 May 2007). Priority must be given to non-profit schools. Regarding the funding of vocational education and training of regional competence, there are different sources of funding depending on the type of course. They can be the Regions' or Provinces' own funds, national funds provided by the Ministry of Labor and/or Education, they can be EU funds.

Access to the VET

Greater attention to the composition and management of classes, the implementation of teaching laboratories and innovative digital technologies, the strengthening of the school-family pact, investment in quality school buildings, the introduction of full-time and extracurricular activities, trained teachers.

Dropout Reduction Strategies in the VET

If high school students drop out is 1.8% of cases, students in technical and professional institutes reach a much higher dropout rate (4.3% and 7.7% respectively). In the school sphere, certainly actions on didactics and school structures promote the well-being of students and contribute to a decrease in dropout. Among the measures identified by the Ministry of Education to stem the phenomenon of school dropout are: greater attention to the composition and management of classes, the implementation of teaching laboratories and innovative digital technologies, the strengthening of the school-family pact, investment in quality school buildings, the introduction of full-time and extracurricular activities, trained teachers.

The VET Qualifications

National Professional Education courses: The graduate acquires a cultural perspective that combines the technical and professional skills with those of the European citizen (ATECO “CLASSIFICATION OF ECONOMIC ACTIVITY” codes). The output profiles of the eleven addresses are contained in the implementing regulation. Within the framework of the Ateco codes, schools can develop and specialize innovative courses consistent with the specific needs of the territory. Regional Professional Education and Training (IFP): These institutions are authorized to issue qualifications having the same legal value as those of the corresponding state schools; they have full freedom about cultural orientation and pedagogical-didactic address.

Monitoring of the VET Providers

Education and Training (EQAVET) of which ISFOL Istituto per lo Sviluppo della Formazione Professionale dei Lavoratori is the Italian reference point. The Reference Point operates thanks to the support of the European Social Fund. THE BOARD Establishes and programs the activities of the Reference Point. The Board, coordinated by ISFOL under the aegis of the Ministry of Labor and Social Policies, is made up of representatives of structures and institutions: - Ministry of Education, University and Research - Regioni - Social partners - Training institutions - Educational institutions.

Transition to the Labor Market

Guidance activities for VET learners are offered at regional and local level by vocational training - centers in cooperation with public employment services, representatives of productive sectors and enterprises, schools and universities. - companies, schools and universities. They are aimed at providing guidance to learners moving horizontally and vertically between different training options, as well as supporting them in the transition to the labor market. Career guidance services fall under the competence of regional authorities, which may delegate them to the provinces. Guidance services can also be offered by private organizations, such as social cooperatives or chambers of commerce. Many dedicated websites, operated by public or private actors, also offer information to help choose individualized education and training or job opportunities.

1.3. Country Profile – ROMANIA

Main structure of the VET

VET in Romania is provided at upper secondary and post-secondary levels. There are four types of VET programmes: - Three-year professional programmes, called 'school-based VET', - Since 2017/18, a dual form of 'professional' VET, Four-year technological programmes and - Post-secondary VET provides one-to three-year higher VET programmes.

VET Institutions

Technological high schools/colleges, professional schools, and post-secondary high schools.

Decision Making in the VET

The Ministry of National Education is responsible for the development and implementation of national education and training policies & strategies, including those on initial VET. Also, the National Centre for the Development of Vocational and Technical Education use a Model Strategic Planning for the Vocational Provision in VET. Instruments of the Model are: - the Regional Action Plan for Education (PRAI) - the Local (County) Action Plan for Education (PLAI) - the School Action Plan (PAS).

The vocational education and training programmes are adapted to the needs for competences and the trends in the labor market, so as to respond to the priorities of national economic and social development. In the school year 2020-2021, the system is continuing the application of the new curriculum for vocational education and for technological high-school education. Their application began gradually, in the 2016/2017 school year, with grade 9. Implementing the non-competitive project Systemic development of vocational and technical education in accordance with the socioeconomic development needs at national, regional and local levels, will update and/or develop: - vocational qualifications; - vocational training standards so as to increase the relevance of training to the labor market; - the curriculum and the curricular aids which are necessary to initial vocational training. Curricula for each qualification have two main components: - core curriculum designed at national level by education working groups; - local (school) curriculum designed by schools and local businesses to adapt training to the requirements of the local and regional labor market.

Financing of the VET

VET in public schools is free of charge. The State also provides financing for accredited private and religious education institutions to the same level as for public VET schools. In private education, institution learners pay fees. Financing is provided to schools by the education ministry from the State budget (main source: value added tax) based on actual enrolment. It covers: - wages, allowances; - staff continuous training; - learner assessment expenditure; - materials, services and maintenance. The basic financing of a school unit is obtained by multiplying the standard cost per pupil by the specific coefficients mentioned above. This is approved annually by Government decision. Continuing VET is financed by: - employers/enterprises; - unemployment insurance budget; - EU structural and cohesion instruments; - personal contributions; - other sources. Jobseekers benefit from free continuing training financed by the unemployment insurance budget. The budget also provides subsidies to employers who provide continuing VET (apprenticeship, traineeship and vocational training programmes).

Access to the VET

Incentives are available to support young learner participation in VET. They are mainly offered by the education ministry in cooperation with other national authorities. Professional scholarship for three-year professional programmes - is a national social protection programme that offers approximately EUR43 (RON 200) per month for all three-year professional programme learners. This scholarship can be combined within grants provided by training companies. The grants usually cover transportation and meals. Dual VET allowance In addition to a professional scholarship, dual VET learners receive at least approximately EUR 43 (RON 200) per month in allowances from the company where they undergo training. Companies also pay for work equipment for learners, their insurance and medical examinations, if obliged to do so by the occupation requirements. High school scholarship - is a national social protection programme that offers approximately EUR54 (RON 250since 2018/19) monthly financial support for upper secondary education learners in grades 9 to 12, including those in VET (technological and vocational programmes). The scholarship is linked to family income and is not available for all learners.

Dropout Reduction Strategies in the VET

Theme of school dropout is one of maximum actuality for Romanian educational system through high levels registered by this indicator. Highest values of school dropout are recorded when passing from middle school to high school (high school and elementary school). Main causes of school dropout on all levels of education are: high absenteeism, learning difficulties, poor school performance and low motivation of pupils for school activities. Main challenges that a student with high risk of dropping out faces are: family income to subsistence level, low parental education, lack of minimum conditions for home study, broken families or single parents. Some of the programmes that address this issue: The annual social programmes of the Ministry of Education and Research are funded and designed to support students in disadvantaged groups. With these programmes, conditions are created to ensure equal opportunities of education for students coming from groups with particular risks (students from rural areas, Roma children, etc.). The ROSE Project regarding the Secondary Education, funded by a loan from IBRD (2015-2022) is funding specific activities in low performing high-schools, based on a grant scheme, to reduce the school dropout rate, increase the high-school graduation rate and improve performance at the Baccalaureate Examination.

The VET Qualifications

After graduating lower secondary education, pupils attend high school or vocational education. High school graduates receive the graduation diploma and the transcript of grades, part of the educational portfolio, which attest the completion of high school studies and which confer the right of access, under the law, in post-secondary education, as well as the right to take the baccalaureate examination. VET High school graduates who sit for and pass the national baccalaureate examination also acquire a baccalaureate diploma, which gives them the right of access to higher education, according to the law. Vocational and technical education graduates, including dual education, who pass the professional qualification certification exam, obtain the professional qualification certificate for level 3, 4 or 5, according to the National Qualifications Framework, and the descriptive supplement of the certificate, according to Europass. Post-secondary education graduates who sit for and pass the professional qualification certification exam receive a professional qualification certificate, corresponding to the level established by the National Qualifications Framework and the descriptive supplement of the certificate in the form of Europass.

Monitoring of the VET Providers

The Romanian Agency for Quality Assurance in Pre-university Education is in charge of authorization (licence), accreditation and external quality evaluation of schools at pre-university education level, including initial VET schools. The agency develops standards, benchmarks and performance indicators for quality assurance, institutional assessment methodology and accreditation of new schools. It is also in charge of implementing the assessment and evaluation tools. In each VET school, a Quality Assurance and Evaluation Commission is appointed to supervise all quality assurance processes and activities, in line with the quality assurance law (87/2006). The commissions: - coordinate institutional self-assessment procedures and activities; - carry out an annual self-assessment of the quality of education in that school; - formulate quality improvement proposals for annual self-assessment that is mandatory for all education providers; quality assurance law requires that all self-assessment reports must be made available to beneficiaries/stakeholders. The reports are submitted for approval to the school boards and recommendations for improving the quality need to be integrated in the revised school action plans.

Transition to the Labor Market

Two main strands of guidance and counselling are available. They are embedded in the: - education system (university and pre-university levels); - labor market services (e.g. public employment service). Guidance and counselling include: - information necessary to plan, obtain and keep a job; - education on careers; - counselling that helps understand individual goals, aspirations and the skills needed to find a job.

1.4. Country Profile – CZECH REPUBLIC

Main structure of the VET

Secondary and upper secondary vocational education provides three quarters of all upper secondary education graduates in the Czech Republic. There are technical and lyceum programmes available at secondary schools. There are also school-based VET secondary programmes with follow-up programmes. This also includes programmes for special educational needs learners. There are also opportunities for adult learning and continuing training outside the school system.

VET Institutions

Secondary schools, and the Labor Office.

Decision Making in the VET

The primary national executive body for the IVET and CVET education is the Ministry of Education, Youth and Sports. It is responsible for development of the national education priorities and strategy, developing of curricular policy. It also guarantees quality of education and coordinates public administration and funding in the area of education. It also establishes the rules for the HE institutions. The Ministry of Labor and Social Affairs is the body responsible for retraining courses provided by the public employment service. The Ministry of Health is responsible for training of health staff and the Ministry of Inferior Affairs provides accreditation of training courses for public administration staff.

Regional assemblies and councils hold responsibility for public VET schools. There are also Regional Councils for Human Resource Development as a consulting body.

The national curriculum provides basis for the school curricula. However, no programme obliges schools to provide students with practical education in a real working environment. Schools are the sole actors responsible for organizing practical education. Most vocational occupations do not have legally defined conditions of access to such a job. Among the exceptions there are electricians or welders, gas engineers etc. However, employers frequently require relevant formal VET qualification. The National Occupational Framework defines non-mandatory requirements for individual occupations. As far as self-employed professions are concerned, some require formal qualification (the Trade Licensing Act), which can be in some cases replaced by a proof of experience of working in the relevant field for a certain period of time. Since 2012 the Act on Recognition of CVET outcomes enabled obtaining trades license for some crafts even without a final examination or a vocational certificate.

Financing of the VET

Regular public VET funding includes three types. Under the School Act the upper secondary and tertiary professional education is funded by the Ministry of Education, Youth and Sport together with regional establishing authorities or private entities or churches (depending on the type of school). The Ministry funds most of the education budget except investments – direct costs. The school founders are responsible for operational and investment costs. There used to be per-capita funding, which motivated schools to admit as many students as possible and lower selection criteria and level of quality. New funding regulations are being currently implemented – number of lessons, number of SEN learners etc. Further funding may be obtained from the development programmes announced by the Ministry for each fiscal year. There are also subsidies available. Schools also have revenues from complementary business activities. Money are also obtained from donations and municipal budgets. Private and church schools also charge fees. CVET in form of retraining within the active labor market policies is funded by the Ministry of Labor and Social Affairs, which transfers the allocated resources to the Labor Office and the regional branches cover course fees and other retraining costs.

Access to the VET

All the state provided VET is free, so everyone has access to that. There are incentives available for the young VET learners. For example regional authorities provide scholarship for the three-year professional programmes – the amounts depend on the selected qualification, absence rate etc. Transportation and meals can be paid via special support programmes. Also companies may pay for training of their future employees covering their expenses and other costs. Scholarships are also available at the HE institutions.

Dropout Reduction Strategies in the VET

According to the data available, students most often leave the VET programmes in the first or final year of their secondary school studies. Drop-outs during the first year are mostly due to the wrong choice of field or level of education. Drop-outs during the final year are mainly due to failure at the final examination. The drop-out rates are traditionally very low in the Czech Republic – just about 5%, it is the highest at the tertiary level. It is important to ensure permeability into the lower-educational level. A fine example are the four-year vocational programmes introduced in 2013 enabling the students to take the apprenticeship certificate exam after the third year and maturita exam after the fourth year. As the most vulnerable groups have the highest drop-out rates, there are programmes and counselling available to students from these groups in individual schools.

The VET Qualifications

At the age of 15 the pupils opting for VET education can choose between secondary vocational schools (two-year, three-year and even four-year programmes involving practical training with the option of obtaining an apprenticeship certificate after three years and maturita exam after four years) and secondary technical schools (four-year maturita programmes). These two types of schools are frequently integrated into one legal entity, which provides students with more opportunities for further studies. There is no apprenticeship system in the country, the IVET is mostly school-based. For the students finishing with the „apprenticeship (vocational) certificate", the obvious aim is a direct entry into the world of work. These programmes enable the graduates to perform manual work in crafts, services and similar occupations. However, as the relation between the students and the employers is not as close as within the apprenticeship systems, the employers are frequently complaining about their lack of knowledge and skills. Their position at the labor market highly depends on the current situation and their field of interest. Labor force with this type of education is the most vulnerable. However if possible, lots of them try to take the follow-up courses (up to one quarter of these graduates) providing them with maturita exam. These entitle the graduates to perform demanding manual work and technical occupations Four-year technical programmes with maturita exam enable graduates to apply for higher education or perform mid-level technical, business and similar jobs. The programmes finished by maturita exam open the door to tertiary education. Such education includes three-year bachelor programmes – often more technically and practically aimed or five-year master programmes with more academic focus. Lifelong courses are provided by the secondary as well as the HE institutions. Such courses further develop qualification of the participants.

Monitoring of the VET Providers

Schools and quality of their education are evaluated externally by the Czech School Inspectorate as an independent national evaluation authority. It has a defined model of a quality school including criteria and methodology for all types and levels of schools. Schools are also performing self-evaluation in form of annual reports. Quality assurance in higher education institutions is represented by the accreditation process. Educational programmes of individual institutions are submitted for evaluation of Accreditation Commission set up by the government. Retraining courses must be linked to the National Register of Qualifications and the issued certificate has to comply with the relevant vocational qualification.

There are two main paths. The first one is the educational system itself, as the schools are supposed to provide counselling to their students on their further professional career. This, however, is very doubtful as most of the schools are very distant from practice and the real world of work. The second one is the services provided by the labor office. This type of services includes necessary information on employment conditions and possibilities, on the necessary education and skills. As far as the digital skills are concerned, the COVID situation pointed out one fact. During the online education – which took nearly an entire year in the Czech Republic – it emerged that young people attending professional training programmes with apprenticeship certificates had a lower degree of access and availability of online education. This is due to the economic situation of families of young people involved in this type of education as many were lacking motivation as well as the necessary ICT equipment. They also suffered the most as their practical education was mostly non-existent during this period. All this should be seriously addressed in future. Especially with regard to the Digital Era we are entering and demands for digital skills on part of the employers.

1.5. Country Profile – SPAIN

Main structure of the VET

VET in Spain offers more than 150 training programmes in the frame of 26 different professional fields, with theoretical and practical contents adapted to the different professional fields. Within each professional field, different training programmes are offered: - Basic Vocational Training Programmes, - Intermediate Level Vocational Training Programmes, - Higher Education Level Training Programmes, and - Specialization courses.

VET Institutions

Registered non-university centers. In the distance/online modality, learning takes place through an e-learning platform. In the event that the student has to carry out a practical session in person, he/she can do so in public centers as well as in subsidized or private centers.

Decision Making in the VET

The Spanish Constitution of 1978 establishes a decentralized State model that distributes the exercise of educational competences among all administrative levels. It is a symmetrical model in which the educational competences exercised by the Autonomous Communities are basically the same. The educational competences are distributed between - the General State Administration through the Ministry of Education and VET and Vocational Training, - the Autonomous Communities through the Regional Governments (Office of Education).

The curricular plan of Vocational Training qualifications is designed by the Ministry of Education and VET. This curricular plan must be published in the Official State Gazette where the Learning Outcomes and Assessment Criteria, whose achievement and implementation are compulsory, will be determined. The Autonomous Communities, although they have delegated powers in the field of education, may not design a curriculum plan different from the one published by the Ministry of Education and VET. They may add more content to the curriculum, but in the frame of the established limits and when the total number of hours of the degree (2000 hours) is not exceeded. Furthermore, they may not modify the Learning Outcomes or the Assessment Criteria determined by the Ministry of Education and VET.

Financing of the VET

As it has already been indicated, vocational training in Spain is provided in public, state-subsidized and private centers. The common feature of all of them is that they are accredited by the Ministry of Education and VET and therefore they belong all to formal education. In terms of funding, there are differences between them. - Public centers: The network of public vocational training centers is funded by the State Administration. In this way, as powers in the field of education have been delegated to the Autonomous Communities through the Regional Ministries of Education, each one publishes the public fees annually in the Official Gazette of the Community. In addition, various types of scholarships are offered, as well as reductions in enrolment fees for groups with special protection: the disabled, large families, single-parent families, etc. The teaching staff is recruited by competitive examination in public schools and in compliance with a series of requirements and requirements and merits. - Subsidized (private) institutions: these are private training institutions which have signed an agreement with the relevant education authority. By virtue of this agreement, grant-aided schools are financed by public funds, although they are privately managed. In this sense, the public administration assumes a series of responsibilities such as paying teachers' salaries, proposing an educational model and establishing general conditions (number of teaching hours, ratios, subjects, etc.). On the other hand, grant-aided schools are responsible for the recruitment of staff and may maintain a certain degree of autonomy with respect to their educational tradition (as in the case of religious grant-aided schools). - Private centers: the student assumes the cost of the training.

Access to the VET

In Spain, several ways are being intensified to promote access to vocational training studies. The most outstanding ones are analyzed below: 1) More counselling, communication and information about VET: during the past few years, VET has been given greater impetus from the academic and vocational guidance offered during the Compulsory Secondary Education in Spain, and it has also been given more publicity in the media, institutions and companies. 2) The labor market has changed and is looking for more technical profiles professionals: this means a greater job offer for VET graduates, which it also means that these studies are seen as a quick and effective opportunity to get a job. 3) The economic crisis and the over-qualification of university students: this has helped to promote VET as a faster and more secure training and professional insertion route than a university degree. 4) The high employability of VET attracts young people to these type of programmes: In less than two academic years, VET students easily enter into the labor market since as part of their curriculum, they do a workplace training, which puts them in direct contact with what they have studied in class. 5) The diversification of VET qualifications and their accessibility between itineraries: one of the attractions of VET programmes is its constant updating and the creation of new qualifications, as well as professional internships in companies through the Workplace Training module or the Dual modality. Another appeal of VET is that it facilitates access between the different cycles (access from Basic VET to intermediate cycles and from these to higher education programmes). 6) The image of VET is changing among young people: this is reflected in the number of enrolments. Moreover, VET is also perceived as a practical specialization that can be acquired quickly, which has attracted adult learners who want to update their skills or re-enter the labor market after having been unemployed for some time.

Dropout Reduction Strategies in the VET

The early school drop out rate in Spain was 16% in 2020, a decrease of 1.24 points compared to the previous year, when it was 17.3%, according to recent data from the Labor Force Survey (EPA), commissioned by the Ministry of Education and VET and VET. Although this decrease represents an improvement, it does not meet the 15% that was set by the European Union as a target for Spain in 2020. According to the strategy designed by the Ministry of Education and VET, the reduction of the school dropout rate depends on the improvement of intermediate and basic vocational training, which have been stagnating in recent years. The early school leaving rate in Spain has decreased from 31.7% in 2008 to 16% in 2020. Even so, the dropout rate is still higher than the EU average which is 10%. The reduction in the rate of early school leavers in Spain has been due to the increase in the number of graduates in High School, intermediate or basic vocational training for young people aged 18-24. The fact that more young people complete their upper secondary education is positive because it raises their level of skills, both for further training and for employment. Those skills would be much more difficult to develop if they left without completing High School, an intermediate vocational training cycle or basic vocational training. At the individual level, young people who complete upper secondary education are less likely to be unemployed and have higher wages than those who only complete Compulsory Secondary Education.

The VET Qualifications

1. Basic Vocational Training Programmes, leading to the corresponding Basic Vocational Qualification, as well as to the Compulsory Secondary Education Qualification if the teaching team deems it appropriate. 2. Intermediate Level Training Programmes (EQF 4), which lead to the title of Technician and form part of post-compulsory secondary education. This qualification allows access to Higher Level Vocational Training programmes. 3. Higher Level Training Programmes (EQF 5), which lead to the Higher Technician qualification that forms part of higher education. This qualification allows direct access to the university degree without the need to pass the university entrance exam. 4. Specialization courses (both intermediate and advanced), leading to obtaining the corresponding specialization certificate. The qualifications obtained on passing a Basic, Intermediate or Higher Vocational Training Programme are official and have the same academic and professional validity throughout the national territory, regardless of whether the studies are carried out in an Autonomous Community or within the scope of the Ministry of Education and VET and Vocational Training.

Monitoring of the VET Providers

The Ministry of Education and VET aims to achieve quality vocational training that guarantees mobility, supports the demands of innovation and the promotion of new emerging sectors. Vocational training is the key instrument for moving towards a new model of economic growth and to achieve this great objective the Ministry of Education and VET has established a network of quality assurance in vocational training, in coherence with and in response to the European network. For several decades, educational centers have been introducing quality management systems and models in their processes, thus recognizing their importance in vocational training in accordance with European standards. Each Autonomous Community has opted for the implementation of certain quality management models or systems, from its own perspective, which has led to a high percentage of its centers already being certified or in the process of certification. Currently, the Directorate General for Vocational Training of the Ministry of Education and VET, in collaboration with the Autonomous Communities, has promoted a Quality Plan with the fundamental objectives of: - The establishment of the Spanish Quality Assurance Reference Framework for Vocational Education and Training (in line with the European Quality Assurance Reference Framework). - The launch of the Spanish Reference Network for Quality in Vocational Training in the education system. - The general objective of the Spanish Quality Assurance Reference Framework is to guarantee and improve the quality of Vocational Training in the education system at the level of Systems (involved authorities) and Vocational Training Provider Centers, both in the sphere of competence of the Ministry of Education and VET and Vocational Training and in that of the Autonomous Communities, responding to the needs at national, regional and local level, to European recommendations, and to those that may arise within the sphere of the social partners.

In Spain, the National Institute of Statistics carries out the so-called "Survey on educational-training transition and labor market integration" which aims to provide information on the subsequent educational pathway of people who have completed secondary education and vocational training, as well as the various aspects of their labor market integration process, i.e. the transition from education and training to the labor market. Five separate groups are searched: - graduates in Compulsory Secondary Education - High School graduates - VET programmes graduates (EQF 4) - Higher Education VET programmes graduates (EQF 5) - students who dropped Compulsory Secondary Education The second edition of this survey was published in 2020 (the first was conducted in 2005). According to the data provided by the survey, the employment rate in 2019 of graduates in Higher Education VET programmes (EQF 5) was 79.5% and that of graduates in VET programmes (EQF 4) was 74.6%.

1.6. Country Profile – PORTUGAL

Main structure of the VET

VET in Portugal offers courses accessible to young people and adults. VET courses are part of secondary education, second and third cycles of basic education, and lead to a double certification: a school and a professional certification, within the National Qualifications System. VET in Portugal is provided at Basic Education level, Secondary level, Post-secondary level, and Higher Education level. In addition, there are VET for adults, focuses on lifelong learning.

VET Institutions

The Education and training courses for young people - CEF are delivered by a network of: a) Public, private, and cooperative schools b) Professional schools c) Vocational training centers (supervised by the Institute of Employment and Professional Training - IEFP) d) Training entities. Courses with their own plans, secondary Initial vocational education and training (IVET) courses - EFPI, are mainly delivered by: a) Public schools b) Cooperative schools c) Public schools. The Professional Higher Technical courses (CTeSP) are taught by polytechnic institutes.

The current VET system in Portugal is the result of a large-scale reform carried out in 2007, which reorganized VET into a single system (National Qualifications System - SNQ). This reform was implemented under the joint supervision of the Ministry of Education, the Ministry of Labor, Solidarity and Social Security, and in articulation with the Ministry of State, Economy and Digital. VET is coordinated by the ministries of education and labor, including key stakeholders in VET: National Agency for Qualification and Vocational Education - ANQEP, Directorate General of Education (DGE), Directorate General of Employment and Labor Relations, IEFP, bodies responsible for financing VET policies, sectoral councils for qualification, CSQ), Qualifica centers (adult qualification centers, supervised by ANQEP), basic and secondary education establishments (supervised by the Directorate General of School Establishments (DGEstE), vocational training center (supervised by IEFP), centers of professional excellence and certified training providers. The National Agency for Qualification and Vocational Education (ANQEP) is responsible for specific tools defined by the Integrated System of Information and Management of Educational and Training Offer (SNQ): a) National Qualifications Framework (NQF), which is part of the European Qualifications Framework (EQF), including the eight qualification levels. b) Level descriptors, which indicate specific learning outcomes at each qualification level. c) National Qualifications Catalogue (NQC), which is an instrument linked to the NQF, aimed at managing and regulating non-higher VET offers leading to qualifications at levels 2, 4 and 5 of the EQF. d) the national VET credit system, which awards credits to VET qualifications within the CNQ. e) the Qualifica Passport, which is an online tool to record qualifications and competences acquired throughout life. Polytechnic institutions present proposals for technical higher professional courses (CTeSP), including a study plan that indicates, for each training component, the respective curricular units, their workload, and the number of credits assigned. The decision to create a course is the responsibility of the Director-General of Higher Education.

Financing of the VET

VET is almost entirely funded by the state budget, the social security budget, and the European Social Fund (ESF). Municipalities and the autonomous regions of Madeira and Azores participate in the financing of VET. The (European Social Fund) ESF promotes VET policies and service provision aimed at reducing early exit from education and training by supporting IVET courses in primary and secondary education. The ESF also supports higher education attainment and promotes lifelong learning and adult employability through the Qualifica programme, recognition, validation and certification of skills (RVCC) and Adult education and training courses (EFA) courses. The Qualifica programme, launched in 2017, aims primarily to support VET for adults by increasing its funding. When the educational establishment receives public funding, Technological Specialization Courses - CETs are free of charge. The Professional Higher Technical courses (CTeSP) have a fee that varies according to the different courses; the minimum amount is 697 EUR in the academic year 2020/2021. Financial support is available for trainees. Subsidies, grants and scholarships for inactive or unemployed individuals. The Human Capital Operational Programme (POCH) and the Social Inclusion and Employment Operational Programme (POISE) provide for financial support for trainees who can receive them through the training providers. Incentives for trainees may take the form of a professionalization grant, training grant, travel and accommodation allowance, food allowance, social support for trainees with dependents, personal accident insurance. The support for the training of adults in employment is carried out by companies within the scope of the monitoring and evaluation of the Competitiveness and Internationalization Operational Programme (POCI/COMPETE 2020). The IEFP also offers social support programmes when there is no EU funding.

Access to the VET

1. The Operational Programme Human Capital (POCH) and the Operational Programme Social Inclusion and Employment (POISE) provide financial support to trainees who can receive it through training providers. Companies may also receive financial support for staff training or to cover costs when the training is provided during normal working hours and is carried out by an external training entity. 2. The incentives for trainees may take the form of a professionalization grant, a grant for study materials, a training grant for unemployed persons aged 23 or over, a travel allowance, an accommodation allowance granted to trainees who live more than 50 km away from the training institution or to those who cannot use public transport to reach the institution's premises, food/meal allowances, social support for trainees with dependents, personal accident insurance. 3. The Competitiveness and Internationalization Operational Programme (POCI/COMPETE 2020) supports the training of adults in employment is carried out by companies. 4. The IEFP also offers social support programmes when there is no EU funding.

Dropout Reduction Strategies in the VET

1. The National Reform Programme has prioritized the implementation of public policies that primarily target young people (especially young people not in education, employment or training, the so-called NEETs), which has reduced early school and training leaving. 2. Through the +Superior programme, measures have been introduced to help early school leavers under 30 to re-enroll and complete their education. 3. The European Social Fund (ESF) promotes VET policies and service provision aimed at reducing early withdrawal from education and training by supporting IVET courses in primary and secondary education.

The VET Qualifications

• The Directorate General for Employment and Labor Relations (DGERT) is the public body coordinating the implementation of the Directive on the recognition of professional qualifications. • The process of recognition, validation and certification of competences aims to identify the formal, non-formal and informal competences that individuals have developed throughout their lives. It is composed of two pathways, the school and the vocational, which are based on different sets of parameters: a) the key competences benchmarks (for validation of school education); b) the benchmarks of professional competences (for the validation of professional competences). Every adult can start a RVCC process in a Qualifica centre at any time of the year. There are about 300 centers supervised by ANQEP. • To complete the technological specialization course (CET), trainees must complete all the training components and receive a technological specialization diploma (DET). CET graduates may continue in higher education through a special admission procedure. • Students who successfully complete the Professional Higher Technician course (CTeSP) obtain a Professional Higher Technician diploma (and not a higher education diploma). They can continue their studies in higher education programmes, through an application process. • The Modular Certified Training courses allow the progression to post-secondary and higher education, if the trainees satisfy the access requirements of the course they wish to attend.

Monitoring of the VET Providers

1. The certification of training bodies is the responsibility of DGERT, which promotes the quality and credibility of training bodies operating within the SNQ. DGERT carries out periodic audits using performance indicators and evaluating the results of the training entities' training activity. Only training entities approved in the audits keep their certification. 2. ANQEP has defined a model to align quality assurance systems with the European Quality Assurance Reference Framework for Vocational Education and Training (EQAVET). This model is mandatory for schools offering vocational courses, but it is also applicable to other educational establishments offering VET courses for young people at level 4 of the National Qualifications Framework (NQF) or EQF. ANQEP is responsible for promoting, monitoring, and supporting the implementation of quality assurance systems for schools offering vocational courses. ANQEP recognizes and certifies them, in accordance with the EQAVET framework. EQAVET compliance is verified by external experts, professors, or researchers from higher education with expertise in quality assurance and vocational education.

1. All public schools provide guidance services to pupils between the age of five and the end of compulsory education. School psychology and guidance services focus mainly on the psycho-pedagogical domain, promoting relations between learners and teachers, and on lifelong guidance. They aim to reduce early drop-out from education and training, attract more students to VET courses, match VET learners' competences and skills to labor market needs, support learners and facilitate their transition into higher education or the labor market. 2. The accredited Professional Insertion Offices (GIP), supervised by the IEFP, support the entry or reintegration of unemployed people into the labor market. 3. Qualification centers provide information, counselling, and guidance services to adults (unemployed or not) on education and training offer, labor market, skills mismatch and professional opportunities.

1.7. Country Profile – IRELAND

Main structure of the VET

There are a number of routes for VET within Ireland. VET in Ireland is provided via Post Leaving Certificate (PLC) courses, Youthreach, Further Education and Training (FET) training courses, Apprenticeships, Traineeships, Skills to Advance (national initiative), and Skills to Compete (reskilling & retraining initiative).

VET Institutions

- PLCs are normally within Secondary Schools - FET Courses are in specific FET training centers - Apprenticeships vary between Education and Training Boards (ETBs) and Institutes of Technology depending on the phase/stage of the apprenticeship - Traineeships are through ETBs - Specific Skills Training – through ETBs.

Decision Making in the VET

Overall responsibility for education and training lies with the Department (Ministry) of Education and Skills (DES). In 2019 a new Department of Further and Higher Education, Research and Innovation (DFHERI) was established. This new Department now deals, primarily with VET and FET. A number of bodies, operate under the aegis of the DES/DFHERI, have responsibilities for different aspects of the education and training system; including among others: - a) the Higher Education Authority (HEA), - b) SOLAS, which is Irelands Further Education and Training (FET) Authority, - c) Quality and Qualifications Ireland (QQI), - d) the National Skills Council (NSC), and - e) the Expert Group on Future Skills Needs, which is based in the Government's Department of Business, Enterprise and Innovation.

Normally quality assurances are done via Quality and Qualifications Ireland 's (QQI) approved standards on the National Qualification's Framework, in conjunction with ongoing consultation with industry.

Financing of the VET

The National Apprenticeship system is funded through the National Training Fund (NTF) and from the Exchequer. The National Training Fund (NTF) was established with the National Training Fund Act 2000. The NTF is funded mainly by the imposition of a levy on employers. The levy is 0.7% of reckonable earnings. The levy is collected through the PAYE/PRSI system. It's income also includes European Social Fund refunds and European Globalization Funds. In 2018, the Further Education and Training Services Plan provided for a total budget allocation of EUR 647.6 million to SOLAS for the provision of further education and training programmes. Included within the funding allocated for FET is the funding for VET programmes. The funding is received from two main sources, the Exchequer and the NTF. Most of the funding is allocated through SOLAS to the ETBs. Of the EUR 647.6 million allocated to SOLAS, EUR 366.8 million comes from Exchequer funding and EUR 277.5 comes from the NTF; the remaining EUR 3.3 comes from SOLAS generated income. A change in economic circumstances in Ireland has observed a shift in spending to programmes for those in employment and upskilling those in employment. SOLAS are moving towards a performance funding model. It is envisaged that data gathered in programme and learner support system, in conjunction with CSO data, will enable SOLAS to capture learner data on the FET system and as they progress on to higher education, into employment or revert back on to the live register.

Access to the VET

In general VET is free as it is funded centrally. There are also other supports e.g. Back to Education Grants, Childcare supports and others to encourage people to take up participation on VET programmes. There is Career Counsellors in different formats across the sector. Within the Schools there are specific Career Guidance Counsellors. Youthreach works with youth to encourage VET participation. The National Centre for Guidance in Education (NCGE) has a role in the support and development of guidance in Youthreach and similar programmes.

Dropout Reduction Strategies in the VET

By striving to ensure positive employability outcomes for those undertaking FET (including VET) programmes, SOLAS aims to enhance the standing of FET amongst school leavers and other learners in Ireland. To this end, monitoring learner outcomes from FET course is a key function of SOLAS and this data, along with local labor market intelligence (also provided by SOLAS) informs the FET planning agreements SOLAS makes with ETBs as the basis for receipt of funding. These activities help to ensure that courses provided by ETBs are up to date and in conjunction with employer's needs and that learners from VET oriented courses will be job ready. Currently, most monitoring is carried out through regular surveys. However, increasingly, administrative data sets will be used to monitor learner outcomes. Initial steps were taken in pilot programmes in 2016, with further work currently on-going. The Programme & Learner Support system (PLSS) has been developed by SOLA & ETB (providers of FET & VET training) to identify outcomes (further study, employment unemployment etc) for learners who have engaged in FET & VET.

The VET Qualifications

FET programmes can be general, vocational or mixed and they normally lead to awards across several levels on the EQF (levels 1-5 on the European qualifications framework (EQF), or levels 1-6 on Ireland's National Framework of Qualifications (NFQ)); Target groups include young people who have recently completed upper secondary education, adult learners, early school leavers, the employed, the unemployed, asylum seekers, learners with special needs, among others. VET programmes within the FET sector are mostly related to apprenticeship and traineeship programmes. Learners on apprenticeship programmes must first obtain employment, and hold an employment contract. Traineeships are open to all learners (including the employed, the unemployed and those who have recently completed upper secondary education); Skills to Advance provides upskilling and reskilling opportunities to employees in jobs undergoing change and to those currently employed in vulnerable sectors with the aim of providing greater sustainability and job security.

Monitoring of the VET Providers

As most VET occurs through the FET framework in Ireland QA is through QQI.

Specifically, for Apprenticeships these are approved via SOLAS and the National Apprenticeship Council. Traineeships are also approved via SOLAS.

Transition to the Labor Market

• Apprenticeships – are required to have employment with their specific craft • Depending on the particular VET there are a range of supports normally available via the host organization (School, ETB or HEI). There are multiple other organizations that support the learners after completion to consider progression. • Most VET course contains modules on work placement, study skills and career planning.

2. The Workforce Challenges and The Mechanisms to Decline Skills Shortages for Future Works

The main sectors and the skills gap/shortage reported by these sectors in the partner countries are discussed in this section as workforce challenges. Digital skills, besides being indispensable in specific sectors and occupations that develop and deliver digital goods and services, are becoming an increasingly transversal requirement across most occupations and sectors. The digital skills gap remains wide, and at risk of expanding in many EU countries. For some countries, there has been shortage of employees in nearly every sector even prior to the COVID situation. Several sectors are still in shortage even during and post pandemic situation. Unavailability of skilled staff is regarded as a major barrier to development. The gap between job supply and demand is widening in terms of the skills offered by candidates and those requested by employers. In the long run, the adoption of new technologies creates the demand for new skills that are not immediately available in the labor market, giving rise to skill shortages until the broad education system (including employer training) is able to meet the new skill requirements. A summary of job status in different crucial sectors in Europe (for spring 2020): Construction: According to another CEDEFOP report, nearly 40% of the construction industry is facing recruitment bottlenecks in European Firms; Health & Personal Care: Health and Social work sector have been amongst the top 5 contributors to the GDP across Europe. The ageing population in several EU countries will create demand for elderly care personnel. Moreover, the majority of serving professionals in the healthcare sector will retire by 2025 in many countries; Engineering: The demand for computing professionals like programmers, data scientists, system designers, etc. and engineering professionals from electrical, electronics, civil, mechanical, etc. background continues to grow across Europe.

2.1. Turkey

The main sectors are “Advanced manufacturing, Health and biotechnology, nanotechnology, clean tech, food tech, smart agriculture”. In order to improve these skills gaps and shortages in Turkey, there have been provided many intensives and funds both for SMEs and individuals by the government. With the pandemic, the government has announced that there will be much more funds for SMEs in order to catch the digital transformation and Industry 4.0 necessities in the future days.

The mechanisms to decline skills shortages for future works: National Development Plans. Those plans stress that new digital based and new skills for future works will be required as result of digital transformation and technological advancements. Presidency’s Yearly Programmes: The programme highlights that new course should be instructed, and VET programmes be revised so as to decline skills shortages for new and future works. National Employment Strategy: The strategy emphasizes that lifelong learning programmes and VET needs to be revised based on the requirements of future works. Ministry’s initiatives: new protocols are signed with sector representatives and relevant stakeholders to decline skill shortages.

2.2. Italy

Although in Italy there remains a large segment of the population that cannot find employment, there are equally large boxes to be filled on the side of employers. According to a re-elaboration

of the Cgia di Mestre on the Unioncamere and Anpal survey, 32.8% of the hiring foreseen by Italian entrepreneurs are difficult to find, especially for qualified personnel; and the search is even more difficult in the Northeast.

The mechanisms to decline skills shortages for future works: There are already existing projects at national and, above all, regional level dedicated to identifying the skills needed in the light of the 2-year pandemic we have just experienced. In order to enrich the school's educational offer and to have access to specialized skills not present in the school, schools can stipulate contracts with experts from the labor market and the professions who have specific and documented professional experience in the relevant sector.

2.3. Romania

Skills shortages are major barriers in firms' operating environment, hampering corporate investment activity and increasing investment gaps, as finding a qualified workforce is among the top five concerns for Romanian firms. Unavailability of skilled staff is regarded as a major barrier to development by a significant number of non-financial corporations in Romania, while lack of skilled personnel affected especially larger firms (60 percent) and small and medium enterprises. At a sectoral level, skill shortages affected to a larger degree companies from the industrial sector, while companies in services and agricultural sectors were influenced to a lesser extent. The top five shortage sectors accounting for 67.4% of total vacancies at national level in 2019 are: Manufacturing; Human Health and Social Work; Wholesale and retail trade; repair of motor vehicles and motorcycles; Public Administration and defense; Transporting and storage. Drivers of labor shortage in Romania: - skills and qualifications. Romania has a deficit of adapting the initial education system that produces skills mismatch through education. - the mobility of workforce - an exodus of all categories of workers. General trend of migration has as main motivations the higher salaries and the lack of demand for the fields of training offered by the initial education system. - the demographic trend: reduction of the average birth rate (with large differences by ethnic group), combined with demographic ageing and an extremely low rate of professional retraining of the elderly, associated with the high risk of unemployment for those aged 50 and over.

The mechanisms to decline skills shortages for future works: As the Fourth Industrial Revolution unfolds and the effects of the COVID-19 pandemic are likely to accelerate automation and the digital economy, investing in the right workforce skills and training models is essential to keep pace with rapid changes in technology and markets. While key education strategies are in place, Romania needs to speed up implementation of these reforms (primary, secondary, and technical and vocational [TVET]), as well as providing adequate financing to tackle the education system's institutional shortcomings. As training provided at work is not enough to close skills gaps, other platforms like private-public partnerships or Precision Training Frameworks could help to correct market failures. There is also a need to establish structured mechanisms to coordinate efforts between all the key players. An improved political environment, a meritocracy-based society, and full recognition of qualifications of Romanians living abroad could help to reduce brain-drain migration and favor the return of skilled migrant Romanians to contain the bleeding of Romanian human capital.

2.4. Czech Republic

Czech Republic has one of the lowest unemployment rates within the EU (only 2% in 2019 and nearly 3% in 2020). Therefore there has been shortage of employees in nearly every sector even prior to the COVID situation. Currently the severely hit sectors are those focusing on tourism, catering and hotel services, there used to be surplus of employees in this sector prior to COVID. Rather traditional is shortage of employees in the ICT sector. As far as skills gaps are concerned these are mainly hitting the specialized ICT sector and all sectors demanding higher levels of ICT skills – such as retail and marketing. There is also a big shortage of qualified force in the building industry – due to the higher qualification requirements there is a shortage of trained plumbers, gas engineers, electricians etc. This is due to the decreasing attractiveness of apprenticeship education among young people. Due to the current changes in shopping habits, there is also a large demand for skilled drivers and logistics specialists. In case of the Czech Republic we have to admit that implementation of the Digital State is still ongoing and rather chaotic, it will be necessary to strengthen coordination of the digital agenda process. Digital Public Administration ought to make life easier for businesses, however it also means that they will need people who will be able to utilize such tools.

The mechanisms to decline skills shortages for future works: There has to exist cooperation between the VET system and the world of work. There are already existing projects on the national level devoted to identification of needed skills and skills needed in future. As an example, Competence 4.0 can be used. It is a currently ongoing project mapping the future competences aiming to help labor market institutions to adapt to coming changes. As it will map and identify future competences, consequently the Central competence database will be updated. It will also implement elements of dual education and support cooperation of companies and secondary vocational schools. There is obviously a discrepancy between the needs of employers and “production” of the education system. Education curricula need to be changed in order to produce qualified and flexible professionals with adequate skills. As far as the employers are concerned, one way of solving the shortages is decreasing staff, rearranging job functions and increasing salaries of employees with wider scope of tasks and responsibilities.

2.5. Spain

In Spain, the gap between job supply and demand is widening in terms of the skills offered by candidates and those requested by employers. The pandemic has highlighted the need to incorporate new professional profiles with digital skills. Companies and workers have been forced to reinvent themselves to face the new challenges that Covid-19 has caused during the past year. According to the 2020 Annual Report on the State of the Labor Market by Infojobs and ESADE, the majority of job vacancies (30%) require only a basic education, while the majority of job seekers (36%) have a university degree, which is only required for 15% of the available positions. The solution to this gap lies in the reorientation of the Spanish productive fabric towards activities with high added value, with a strong role for the digital and industrial sectors, which allow the potential of human capital with higher education to be developed. There are 2 training projects to be highlighted: - on one hand, studies programmes with a technical-technological profiles approach that the market is still demanding; - on the other hand, the fact that candidates and companies are committed to continuous training in hard and soft skills, always oriented towards the achievement of the personal and professional objectives that

are established. Currently, the demand for profiles in the digital industry is increasing, as well as the ability to work in areas such as Big Data, Cloud Computing, digital content, design, AI and extended realities (Virtual, Augmented and Mixed).

2.6. Portugal

The active and working population in Portugal has significantly low digital literacy and the pandemic, with its strong technological acceleration, has further highlighted this gap. According to the Digital Economy and Society Index (DESI) 2020, only 26% of workers have digital skills in the user perspective and only 12% have advanced skills, which puts Portugal below the European average, which is also not very high (28% and 21%, respectively). Digital skills, besides being indispensable in specific sectors and occupations that develop and deliver digital goods and services, are becoming an increasingly transversal requirement across most occupations and sectors. In the food and accommodation, retail or arts and culture sectors, digitization and remote working was a less straightforward option, but the digital transformation in these sectors is also moving forward. In tourism, the remote provision of services, such as hotel check-in, ordering food or selling tickets, is booming. Art and culture promoters are using similar approaches, with products such as virtual shows and exhibitions. Rapid digitization in retail has led to an expansion of e-commerce.

The mechanisms to decline skills shortages for future works: VET should respond to the profound transformations caused by digitalization. The government has identified, through the draft recovery and resilience plan (2020), areas on which future policy interventions will focus. The plan draws attention to the percentage of the active population with low levels of education (approximately 50%). It sets objectives for the education and training system to modernize VET: promoting quality VET; supporting the transition to a digital and greener economy by providing learners with the necessary competences and skills; developing skills for innovation and industrial renewal in conjunction with the business world; and attracting more students to higher education, from VET. The plan also aims to enlarge the network of adult education and training providers in cooperation with the Qualifica centers, to attract more adults to VET courses. The recently launched (2020) Ativar.pt initiative aims to address the challenge of rising unemployment by promoting the re-skilling of the unemployed, particularly young adults in areas related to the digital, green and social economy. In the current economic context, in which the socio-economic effects of the pandemic crisis are evident, VET should be a crucial instrument to promote employability, social inclusion and the development of the economy.

2.7. Ireland

Pre COVID the answer would be every sector as we had almost full employment (only 4% unemployment). Demands are dominated by • Financial services sector; • ICT – high level ICT skills and less technical skills necessary for the responsible deployment, management and regulation of AI; • Construction - need for a more digitalized, efficient and climate neutral built environment. Skills are required by enterprises to facilitate Ireland’s transition to a low carbon economy in the years to 2030 in five key areas: Energy efficient retrofit both in Dwellings and Commercial buildings; Installation and subsequent servicing of Heat Pumps and other renewable heating systems; Development and subsequent maintenance of onshore and offshore Wind energy capacity; Development and subsequent maintenance of Solar energy capacity and Rollout of comprehensive Electric Vehicle fleet and charging network infrastructure. • Tourism,

Hospitality- 'Digital' skills shortages are likely to be more extensive for hybrid lower and middle level occupations, for SMEs, and in particular those that are not digitally proficient. • Retail - digital and online marketing skills gaps with increased moves to online shopping • Logistics & Transport – technological changes and automation of processes will result in a need for enhanced digital skills across all occupations in this field.

The mechanisms to decline skills shortages for future works: Career development pathways with opportunities for continuous learning or up-skilling (Continuing Professional Development Programmes - CPD). Digital badges and other types of micro-credentials have been introduced for short courses that would otherwise go without any accreditation as a means of recognition for skills and competencies, and to entice people to upskill. Better access to education – this is particularly relevant for under-represented groups; some people require extra support in accessing education and training opportunities. National plans/strategies – e.g. Ireland's National Skills Strategy 2025, The National Further Education and Training (FET) Strategy 2020-2024 – these plans/strategies are developed in line with current trends in the labor market Upskilling/Reskilling initiatives offered by organizations such as Enterprise Ireland, Local Enterprise Offices (LEOs – e.g. training webinars, programs and workshops), Regional Skills Fora, Skillnet Ireland, SOLAS (e.g. Skills to Advance – national policy initiative targeting those facing changes in work due to technology advances, changing work practices and market diversification), Springboard+.

All reports mention some mechanisms in which governmental entities have identified areas on which the future policy interventions will focus, taking into consideration various essential aspects related with the existing workforce, the needs of employers and the current ongoing crisis (the pandemic). As the Fourth Industrial Revolution unfolds and the effects of the COVID-19 pandemic are likely to accelerate automation and the digital economy, investing in the right workforce skills and training models is essential to keep pace with rapid changes in technology and markets. There is also a need to establish structured mechanisms to coordinate efforts between all the key players, especially maintaining the constant strong link between VET educational systems and the world of work. VET should respond to the profound transformations caused by digitalization. There are some strong incentives at European level that support implementation of various schemes for helping industries and employers to decline the shortages.

3. Upskilling and Updating VET

There is a general need to strengthening skills intelligence, this meaning that in order to skill for a job, there is a need for ‘real-time' information on skills demand, including at regional and sectoral level, using big data analysis of job vacancies and making it widely available. Artificial intelligence and big data analysis have great potential to identify the skills needs of the future. They can complement more traditional sources of information such as official statistics and employer or sectoral surveys. All reports mention the need to adapt the system to the requirements of the labor market and to the socio-economical general context (including, for example, the big changes produced by the Covid crisis). The future needs to ensure that vocational education and training is agile, adapting swiftly to labor market needs and providing quality opportunities for young and adults alike Several reports mention skills to support the green and digital transitions: developing a set of core green skills, statistical monitoring of the greening of our workplaces, boosting digital skills. Companies are already facing skills mismatches and gaps notably to master the green and digital transitions. Several reports mention meta skills/transversal skills, soft skills and skills for life: complex problem solving, critical and analytical thinking, taking responsibility, communication skills, flexibility, and the capacity to learn new skills There is a need for increasing STEM graduates and fostering entrepreneurial skills by encouraging especially women into Science, Technology, Engineering and Maths. The integration between formal and non-formal learning contexts, enhancing the cultural and educational dimension of the "work system" is highly considered. The aim is to increase the flexibility of vocational education and training, including by encouraging modular and non-formal learning methods It is important to broad the teaching methods to be used, so as to encourage the expression of all types of student intelligence by including in ordinary teaching activities capable of stimulating practical, social, emotional-relational, intuitive, reflective and argumentative intelligence (group work, peer education, problem solving, workshops on real tasks, project work, public events, dissertations, competitions, etc.) Several reports make reference to the key competences in VET and lifelong learning: - Basic Level Standard: Language and Communication; Mathematics for Life; Citizenship and employability; Information and Communication Technologies (ICT). - Secondary Level Standard: Culture, Technology and Science; Citizenship and Professionalism. There is a general need for embedding environmental and social sustainability into vocational education and training curricula and organizational management. Table 2. shows the current competences are expected/needed to be updated and upskilled in VET system.

Table 2. The current competences are expected/needed to be updated and upskilled in VET system

Turkey	Recent research conducted by Turkish Labor Agency (ISKUR) in 2020 revealed that an average of 12.4 % of jobs within small and medium sized enterprises had vacant positions due to skills mismatch between potential employees' skills and labor market's demand. The ratio is highest in the following sectors: Manufacturing, information and communication technology, health, social work, wholesale and retail trade, real estate, and finance sectors. The report further suggests that demanded skills within those sectors involve meta skills & soft skills (e.g. complex problem solving, taking responsibility, analytical thinking), IT skills, teamwork and marketing skills. Ministry reports also suggest that vocational education and training programs should be adapted to the needs and requirements of labor market so as to succeed economic development. In this regard, the following competences need to be updated in VET system: Meta skills: complex problem solving, analytical thinking, taking responsibility, communication skills, flexibility, and the capacity to learn new skills. Technological skills: not only for IT sector, but also as a dimension for all VET programmes.
Italy	In a scenario characterized by technological acceleration and the spread of digital technologies, it is not easy to identify which skills will be most in demand in the medium term (3 - 5 years), especially as the structural dynamics affecting the global economy have a profound impact on the labor market in several directions. In this scenario, the reform of VET institutes (Decree 61/2017) aims at: (a) the integration between formal and non-formal learning contexts, enhancing the cultural and educational dimension of the "work system". The educational value of work is twofold: learning by working, and learning to work. b) the activation and direct "engagement" of the students themselves, seen as a resource, the collective good of the country and the territory, as bearers of talents and energies to be mobilized and made to grow for the community, through a new educational pact. This pact should be able to promote increasing levels of autonomy and responsibility on the part of young people, overcoming on the one hand the stereotype of the 'fragile' student, insofar as he or she is scarcely receptive to theoretical stimuli, lacking in mnemonic, abstract, expositional and argumentative skills, and on the other hand encouraging the appreciation of students when they show themselves capable of using their own resources - skills, knowledge and personal abilities - in order to tackle and successfully complete the tasks and problems they are asked to solve. c) The assumption of a fully co-educational perspective by the teaching team. This entails broadening the teaching methods to be used, so as to encourage the expression of all types of student intelligence, and not only the logical-deductive one. In particular, this involves including in ordinary teaching activities capable of stimulating practical, social, emotional-relational, intuitive, reflective and argumentative intelligence, for example by using techniques such as group work, peer education, problem solving, workshops on real tasks, project work, public events, dissertations, competitions, etc. The final exit profiles from the various branches of vocational schools, therefore, are made up of personal, cultural and professional competences typical of the branch, but

anchored to general competences referable to the European key competences. The key competences are all of equal importance: - they are dynamic, they change in the course of life and the evolution of society; - they can be applied in many different contexts and in different combinations; - they overlap and are interconnected. Elements such as critical thinking, problem-solving, teamwork, communication and negotiation skills, analytical skills, creativity and intercultural skills underpin all key competences, and are an important reference point for schools to develop learning environments and curricula consistent with the expected learning outcomes. The key competences, therefore, are not "additional", nor are they juxtaposed to the curricular competences, but they orient teachers' planning and allow educational proposals to be adapted to the specifics of the context and to the personalization of the courses.

Romania

In Romania in 2020 starts the implementation of the non-competitive project Systemic development of vocational and technical education in accordance with the needs of socio-economic development at national, regional and local level, through which the updating and / or development will be achieved:
- professional qualifications,
- vocational training standards to increase the relevance of training in the labor market,
- the curriculum and curricular auxiliaries necessary for initial vocational training.
- Strengthen vocational and technical education, especially the on-the-job learning component
- key competences at different levels of development, according to the various levels of VET education.
- promoting and supporting the integration of students in dual education
- organization and development of on-the-job learning programs (internship / traineeship, internships, practical training, technology laboratory, etc.), including firm-type activities (according to the methodologies applicable to each type of activity)
- promoting competences in all economic sectors with competitive potential and in areas of smart specialization

Vocational education and training programs need to be adapted to the needs of skills and trends in the labor market, so as to respond to national priorities for economic and social development.

Czech Republic

Even though there is no thorough system identifying future demand for skills and competences in the Czech Republic, there are various projects and studies dealing with this topic. (e. g. Competence 4.0 of the Ministry of Labor and Social Affairs) For example monitoring of new skills and production of competence models are closely related, as while producing competence models' new trends and impacts are identified across sectors. There is primarily a strict focus on professional knowledge and skills in Czech vocational schools. However currently there is a calling within the VET system, especially the secondary and tertiary education, to move from narrow professional knowledge to wider key competences leading to successful entrance of the world of work, as well as everyday life. This is aimed at higher

flexibility of employees in performing various jobs and positions according to demands of their current and future employers. Across the entire system, and depending on the type of work, there is high demand for balance of professional skills and key competences. Some professions, however, will require more professional knowledge – mechanics, cooks, drivers; others will put more stress on key competences – ability to communicate among sales agents, etc.
Below we present the three most demanded competences according to various sectors.
Secondary sector – industry
1. Reading and understanding working instructions
2. Taking responsibility
3. Willingness to learn
Tertiary sector – services
1. Taking responsibility
2. Willingness to learn
3. Reading and understanding working instructions
Nearly the same actually applies even to the quaternary sector. As seen above, the three mentioned competences plus ability to solve problems are the most demanded by employers. According to various studies, employers expect an increase of importance of the following competences and skills – knowledge of foreign languages, ability to communicate, ability to solve problems, good computer skills, ability to cope with stress.

Spain

On 7 September 2021, the Spanish Government approved the new ORGANIC LAW FOR THE ORGANISATION AND INTEGRATION OF VOCATIONAL TRAINING. This law was born from the need to reinforce some areas that are not very well implemented in the VET sector such as Vocational Guidance and Internationalization. But also, from the need to expand the catalogue of skills and knowledge that must be acquired by VET students in order to be competitive in the current labor market and meet the demand of companies. As a result of an exhaustive analysis of current professional needs, the new law has incorporated the so-called SPECIALISATION COURSES (popularly known as VET MASTERS) into the catalogue of VET qualifications, through which the skills that are in demand in today's professional world are acquired.

Portugal

Because of the Covid-19 pandemic, the Portuguese presidency focused on the implementation of the action plan for recovery, strengthening citizens' skills to respond to the new challenges they are facing. In Portugal, VET must respond to the profound transformations caused by digitalization. In April 2020, the action plan for the digital transition was launched in line with the national e.2030 digital skills initiative. The Capacitar i4.0 programme promotes the creation of in-company and inter-company training actions in this domain. Priority topics on the policy agenda are the following VET challenges: increasing participation in lifelong learning; modernizing VET provision by introducing new teaching methods and diversified VET courses providing skills-based qualifications; aligning VET with labor market needs; and reskilling and up-skilling vulnerable groups (including those who have not completed secondary education). Although significantly decreased since 2010, early leavers from education and training remain a priority. Portugal is

	particularly attentive to the profound transformations that have taken place in the labor market because of the digitalization of the economy. Some Portuguese initiatives related to Key competences in VET and lifelong learning: - Basic Level Standard: Language and Communication; Mathematics for Life; Citizenship and employability; Information and Communication Technologies (ICT). - Secondary Level Standard: Culture, Technology and Science; Citizenship and Professionality. The key competences standard for basic education is being updated and it will include new competence areas: Culture, language, and communication; Digital competence; Mathematics, science and technologies; Citizenship and employability; and Personal, social and learning competences. New programmes for promoting digital competences and social inclusion - The Programme "Jovem + Digital", created in 2020, reinforces the development of skills in the digital area, with the strategic objective of enhancing the quality, efficiency and agility of training and professional qualification, with a view to the acquisition of skills in the digital area by young adults aged between 18 and 35. New programmes for promoting digital competences and social inclusion Portuguese for non-native speakers' courses were reformulated in 2020 to respond to the learning needs of migrant citizens, aged 18 or over. These courses facilitate their social integration, helping them to find a job, to improve their communication skills and to understand their basic civil rights. Language courses are organized according to training standards included in the NQC, at levels A1 to B2 of the common European framework of reference for languages. The duration of the courses varies according to previously achieved language competences. What is still missing in Portuguese VET: Green skills – conceptual, technical and political guidance to promote environmental sustainability to all learners, but also to VET providers and companies; Update of key competences for resilience and sustainability.
Ireland	'Meta' skills – soft or transversal skills – e.g. complex problem solving, critical thinking, creativity, people management – critical to prospering in the future world of work Technological/digital competencies – no longer confined solely to the technological sector but should become a factor across all programmes – due to the impact of Covid-19 crisis and rapid pace of technological advancement. Climate Change and Sustainable Development – energy, building and environment (Nearly Zero Energy Buildings – NZEB, Building Information Modelling -BIM); modernization of construction skills, green skills, any relevant programs should embed a sustainable development focus. Design skills - digital, product and strategic design.

3.1. VET Teachers'/Trainers' Needed Competences for Upskilling the Competences of Trainees

There is an urgent need for efficient mechanisms for insufficiency re-qualification and re-skilling and up-skilling for disappearing of some specializations and introducing new ones. Often, establishing the specialization needs to be based on the existing qualification of teachers instead of the workforce requirements. VET trainers need to incorporate their hard skills into personal and soft skills Some reports describe that teacher in VET education are lacking especially practical competences and skills and company updated skills and competencies while others report that a number of practical years of experience in companies is highly valued for VET trainers. There are some specific sets of skills that are attributed to VET teachers and

which are common to those in general education/mainstream schools. Some specific clusters of skills to be mentioned: Technological – for Technology-Enhanced Learning (TEL) or if engaging in hybrid-models of learning with VLEs (Virtual Learning Environments). Emotional Intelligence, cognitive and social – learner and VET trainer relationship, mentorship, learning or emotional support and guidance are key to maintaining/encouraging learner engagement and motivation (particularly for learners from disadvantaged backgrounds). Flexibility – blended teaching and learning (inclusive of part-time/ evening courses etc.), UDL (universal design for learning) - engagement, representation and action & expression, to cater to students of diverse backgrounds and capabilities Self-directed/Independent learning – keeping up with emerging trends, change management, developing self-confidence Assessment Design – holistic approach to assessments with such being based on or in the work placement, open-book exams for certain courses (more practical approach, similar to working environment), delivery and assessment approaches to assess practical skills online Career Guidance – provide support with learner pathways, guidance for further personal or professional development. Attract more students into higher education, in particular through VET is a skill to be developed further. Table 3 shows the needed competences of the VET providers (teachers and trainers) for upskilling the competences of trainees.

Table 3. VET teachers'/trainers' needed competences for upskilling the competences of trainees

Turkey	➢ *Autonomy,* ➢ *Teamwork,* ➢ *Adaptation skills, entrepreneurship,* ➢ *Good communication skills,* ➢ *Creativity,* ➢ *Willingness to learn, problem solving skills,* ➢ *Basic and complex decision-making skills,* ➢ *Critical thinking skills,* ➢ *Digital competences including information technology, technology literacy, data literacy.*
Italy	➢ *Personalized teaching,* ➢ *The widespread and intelligent use of laboratories,* ➢ *The integration of skills, abilities and knowledge,* ➢ *Guidance teaching,* ➢ *Interdisciplinary teaching.*
Romania	➢ *Practical competences and skills,* ➢ *Technical skills update/upgrade in the new technologies and job requirements.*
Czech Republic	➢ *Ability to communicate,* ➢ *Willingness to learn,* ➢ *To communicate with future employees of their trainees.*
Spain	➢ *Personal Competences: Autonomy, Involvement, Entrepreneurship, Problem solving,* ➢ *Communicative competences,*

- *Digital competences: Information and data literacy, Communication and collaboration, Digital content creation, Security and safety,*
- *Collaborative competences: Teamwork, Problem solving, Decision making.*

Portugal

- *Literacy,*
- *Language skills improve communication and cooperation,*
- *Digital skills.*

Ireland

- *Emotional Intelligence,*
- *Mentorship,*
- *Learning or emotional support and guidance,*
- *Flexibility: blended teaching and learning,*
- *Self-directed/Independent learning,*
- *Assessment Design,*
- *Career Guidance.*

3.2. Continuous VET Training for Trainers/Teachers

Teachers and trainers in VET are key actors in ensuring its quality and relevance to today's demands. They work in the context of innovation, globalization, rapid technological and societal changes that pose challenges to education and training systems across Europe and globally. Committed and competent teachers, trainers and other VET professionals were acknowledged as key agents for high quality initial and continuous VET. Evidence shows they can embrace new challenges and reforms and ensure quality and effective learning experiences for both young and adult learners. Various arrangements are in place for teachers and trainers in initial and continuous VET aiming for modern pedagogical and adult learning approaches and the appropriate mix of skills and experience they need to deal with current and emerging needs. All reports sustain that teachers are to update their knowledge, skills and competences and the professional development of teachers/trainers is often included in the country's strategic priorities. Continuous professional development requirements, regulation, provision and monitoring vary significantly across countries: there are established legal basis for it, it is a teacher right, sometimes covered by collective agreements or an obligation or part of the school development and quality assurance processes. Sometimes, attending continuous professional development translates into wage bonuses for teachers. Teacher's continuous professional development provision also varies across countries. In most, accredited training courses or programmes are considered together with training in companies or using e-environments. Some tailor-made courses complement teacher competences. Different bodies provide teacher continuous professional development programs, depending on the organization of VET: higher education institutions and universities, teacher training institutes, in-service training institutions, national centers or agencies working in VET, non-state providers of adult education, VET schools, municipalities and companies. In recent years, EU-funded projects have acted as significant drivers of teacher and in-company trainer professional development. Most measures supporting VET trainers have originated in EU-funded projects. Table 4. shows the Continuous VET Training for Trainers/Teachers in project countries.

Table 4 Continuous VET Training for Trainers/Teachers

Turkey	Continuous training is a right provided to individuals according to the related regulations. Teacher Training and Development General Directorate designs in-service teacher trainings for teachers. Training programs and plans could be accessed through: oygmen.meb.gov.tr VET teachers/trainers are required to attend in-service teacher training seminars organized once or twice a year either in their schools or working location. A formal program designed centrally is implemented for continuous development of teachers. It is mostly on pedagogic competences, curriculum information, IT information, student assessment and evaluation as well as teacher-parent collaboration. In addition, selected teachers based on their needs, expectancies and service time are nominated to participate in teacher training in teacher training centers. The training costs are covered by the State budget. In 2019, new collaboration protocols were signed, and the content of in-service VET teacher training was enriched. From that year on, teachers were ensured to participate in vocational and on-the-job trainings organized by MoNE with the contribution of sector representatives (MoNE of Turkey, 2020b). All teachers as well as interested trainees are possible participate in programs offered by public education centers and its costs are covered by state. Recent regulations are aimed to prompt in-service teachers to pursue to a higher degree of education. The teachers attaining a higher degree receive an additional service score which contributes them in their school selection and a minor change in their salaries.
Italy	Law 107 of 2015 defines the training of school personnel as "mandatory, permanent and strategic" and recognizes it as an opportunity for effective professional development and growth, for a renewed social credibility of contribution to innovation and qualification of the educational system. The new regulatory framework indicates some innovative tools: o the principle of mandatory in-service training; o the assignment of a personal training card to teachers; o the definition of a national training plan (three-year), with relative financial resources; o the inclusion in the three-year plan of the training offer of each school of the recognition of training needs and training actions planned; o the recognition of participation in research, training, documentation of good practices, as criteria for enhancing and incentivizing teacher professionalism. The National Plan for the training of school personnel, provided for in paragraph 124 of article 1 of Law 107 of 2015 represents an institutional reference framework and offers a strategic vision of training. The "system" of in-service training is envisioned as a "lifelong learning environment" for teachers and consists of a network of opportunities for professional growth and development for teachers.
Romania	Continuing professional development of teachers and instructors is a right defined by the Law of National Education that supports career advancement and professional development. Advancement in a teaching career is ensured by acquiring the relevant degrees: - the second teaching degree is awarded after at least four years of service (after passing the teacher-confirmation exam), undergoing at least two school inspections and passing an exam in methodology and main subject ; - the first teaching degree is awarded after at least four years

after awarding the second degree, undergoing at least two school inspections and defending orally a written thesis. Professional development is compulsory by participation in accredited training courses (teachers have to gather minimum 90 ECTS every five years). The training is provided by public and private education institutions and by NGOs, and can be partially or fully covered by the State budget.

Czech Republic

Teachers at state schools are required to undergo teacher training financed from the budget in order to maintain and further improve their qualifications and skills. The headmasters are obliged by the School Act to enable further training of teachers. Certain amount of further training is required in order to reach another career level. The HE institutions provide accredited teacher training.

Spain

In-service training, which teachers undertake throughout their professional career and which enables them to broaden, develop and update their knowledge, skills and attitudes, may be formal or non-formal and include both subject-specific and pedagogical training. It is offered in different formats, such as courses, seminars and peer observation, as well as through the support of teacher networks. In certain cases, continuing professional development activities may lead to additional qualifications. In Spain, the education authorities are responsible for in-service teacher education. Specifically, the Ministries and Departments of Education of each Autonomous Community which, together with the schools and teacher training centers, are responsible for planning and delivering teacher training. In relation to training modalities, teacher training centers offer 5 different modalities: 1. courses: programmed to contribute to the updating of teachers' knowledge. 2. seminars: these are usually proposed by the organizing entity or by the teachers themselves in order to explore in depth educational issues in a specific discipline or its didactics. 3. working groups: they arise from the initiative of teachers to develop curricular materials. They must present a report reflecting the work that has been carried out. 4. school-based training projects: these are training activities focused on the school itself in order to promote educational innovation and the improvement of the school itself. 5. conferences: a one-off event that disseminates content on a given topic or serves to exchange or discuss progress on it. Both courses and seminars may be given in a face-to-face or blended modality. Their duration must be longer than 20 hours and if they include a non-face-to-face period, this must not exceed 20% of the duration and must be justified with a report or individual or group work. Online training is also envisaged, which may include some face-to-face sessions for coordination.

Portugal

VET teachers should be graduates of an initial teacher training course higher level teacher training, such as teacher and trainer training courses and trainers, and educational science. The profession of trainer is regulated for those working within the SNQ. The initial pedagogical training of trainers is mandatory and has a minimum duration of 90 hours. Trainers can certify their pedagogical competences acquired in a formal, non-formal and informal way through the process of recognition, validation, and certification of trainers' competences (RVCC-For). Continuing professional development (CPD) is compulsory for career progression for teachers. CPD can take the form of training courses, workshops, internships, and accredited projects. CPD can be provided by higher

	education institutions, by training centers run by school associations, by non-profit scientific associations non-profit associations, by the Ministry of Education and by public associations or accredited private associations and cooperatives. The CPS for trainers is provided by IEFP.
Ireland	There are different structures depending on provision; • Teachers who are within Schools and deliver e.g. PLC have to be registered with Teaching Council and must follow CPD • Apprenticeship Instructors work in ETBs – they currently do not have to have a pedagogical qualification and there is no formal CPD structure • Apprenticeship lecturers work in HEI – they normally fold the Institutes CPD initiatives, but it is not a formal requirement • Tutors/Trainers on VET programmes in ETBs are increasingly required to have pedagogical qualifications but there is significant variation demands on subject matter skills.

3.3. The Training Opportunities in VET Education for Future Works

All reports include existing systemic opportunities within their VET educational system for future works and jobs that will be required in the future. These opportunities are highly related with the VET systems and the way each system is organized. A special mention is for the dual system education for initial or advanced VET which seems operational in all countries involved in this research. There is a sustained need to strengthen and further develop this type of education, as it seems to be the most fit with the future works. Some reports include systems aimed at young people who have left the education system and who are at risk of social exclusion. These systems include qualified training, oriented towards their specific needs and interests, aligned with local labor market trends or Vocational Training Opportunities Schemes for unemployed people. A special emphasis can be observed on the importance of the participation of representatives of the world of work and the professions whose important contribution is highly needed not only to identify the skills in relation to occupational needs, but also to set the same construction of the profiles considering the rapidity of the changes taking place in all economic and production sectors and that require skills that are also in continuous evolution.

3.3.1. Turkey

From students' perspective, a dual form of initial VET education has been adopted for many years at EQF level 3,4 and 5. Within this frame, pupils get theoretical education in VET schools as wells as trainings in various sectors based on their area of work. Current VET Law acknowledges that organizations are required to offer internship and complementary vocational education programs for VET pupils in upper secondary and post-secondary levels. Apart from regular VET period, ISKUR provides a support mechanism with on-the-job trainings offered by many organizations. Those serve as a traineeship that combine learning in education and practice in training centers. Besides, with a lifelong learning approach, community colleges offer training programmes for those needing vocational skills. From VET teachers' perspective, they have similar facilities with teachers in mainstream schools. They both have the possibility to participate in the trainings designed centrally by Teacher Training and Development General Directorate. However, as of 2019, in-service VET teacher training was involved in vocational and on-the-job trainings organized centrally but with the contribution of many sector representatives.

3.3.2. Italy

The elaboration of the unit profiles, the declination of the learning outcomes in terms of competences, the reference of the addresses to the ATECO codes of the economic activities and to the economic and professional sectors have been the result of a work that the administration has shared with the stakeholders of the school and with the educational institutions, also through the national networks of the different addresses. The participation of representatives of the world of work and the professions has provided an important contribution not only to identify the skills in relation to occupational needs, but also to set the same construction of the profiles of the addresses so that they maintain those characteristics of flexibility and adaptability to change that are essential to deal with the evolutionary dynamics that arise from the rapidity of the changes taking place in all economic and production sectors and that require skills that are also in continuous evolution.

3.3.3. Romania

In 2012, initial three-year professional programmes were reintroduced, after a three-year break. In November 2016, the dual form of initial VET at EQF levels 3, 4 and 5 were introduced, endorsed in April 2018 by amendments to the education law. Implementation of dual VET started in 2017/18, currently only at EQF level 3. In 2016, new training standards for initial VET qualifications at EQF levels 3 and 4 were approved by the education ministry. The standards are compatible with occupational standards for continuing VET. In 2017, the methodology for the certification exam for qualifications at EQF level 3 was revised and a skills demonstration component (practical examination) was introduced, aiming to increase the certificate's relevance to the labor market.

3.3.4. Czech Republic

As far as secondary schools are concerned, there is insufficient interconnection of teaching with practice and elementary schools. Even within further education there are very few opportunities for retraining in the use of new technologies associated with changes in workload. All this will lead to a further shortage of skilled staff in new technologies in business practice. There is a real need for a dual element in secondary education. It also calls for updating of the Digital Education Strategy with introduction of breakthrough technologies. There will also be necessary lifelong learning and re-skilling in these technologies – these will always be at least one step ahead of us. And as the schools do not have such technologies available, it will be absolutely necessary to interconnect schools and trainers with businesses.

3.3.5. Spain

In order to answer this section, we must focus on the so-called DUAL VET modality that facilitates the access of VET students to future jobs. The DUAL VET modality is based on the "learning by doing" methodology that combines stays in the training center and in the company. According to the new VET Law, within the dual modality we must differentiate between 2 types: General Dual Vocational Training: the duration of the stay in the company is between 25% and 35% of the total duration of the training and the company also assumes up to 20% of the learning outcomes or professional modules of the curriculum. This type of dual vocational training is in the nature of tutored practical training that does not generate a contractual link with the workplace, nor does it receive any remuneration. Advanced or alternating Dual VET: the duration of the stay in the company is between 35% and 50% of the total duration of the training and the company assumes up to 40% of the learning outcomes or professional modules of the curriculum. This type of dual vocational training will constitute a paid contractual

relationship between the student and the company and, therefore, allows the student to receive financial remuneration.

3.3.6. Portugal

A number of policy developments have recently been introduced, with the main focus on promoting digital skills and supporting vulnerable groups. The e.2030 National Digital Skills Initiative programme aims to equip the population with the right skills to use digital technologies effectively by investing in training the population. In 2019, the Digital Competence Dynamic Reference Framework (DDRSCF) was developed. The Capacitar i4.0 programme (69) was also instituted, which includes the following initiatives (Ferreira, 2020): (a) the creation of i4.0 academies in companies to promote innovative technologies, processes, operations and methodologies; (b) inter-company training actions on digital skills; (c) a network of qualified i4.0 trainers. In 2019, the Second Chance programme was launched. This programme is aimed at young people who have left the education system and who are at risk of social exclusion. It provides them with qualified training, oriented towards their specific needs and interests, aligned with local labor market trends. IEFP developed the pilot project Learning gives employment, aiming to increase the attractiveness of learning. The training courses are carried out in partnership with training operators and business associations, introducing innovations in apprenticeship courses. They also aim to strengthen the link with companies and the labor market, and to increase the visibility and attractiveness of these courses for civil society, young people, families and companies. Cedefop's European Skills Index (ECI) measures countries' performance in developing, activating and matching skills. Portugal is progressing relatively less well in skills development. Inclusive VET and equal opportunities are core elements of the Portuguese education and training system. Since 2010, the country has made considerable progress in tackling early drop-out from education and training. Financial support is available for trainees. Subsidies, grants and scholarships are aimed at inactive or unemployed individuals. The Operational Programme Human Capital (POCH) and the Operational Programme Social Inclusion and Employment (POISE) provide financial support to trainees who can receive them through the training providers. Incentives for trainees may take the form of: (a) professionalization grant: aims at supporting trainees during the FCT period (subject to the reservation of the grant); (b) study material grant: fixed according to economic needs; (c) training grant: granted to unemployed aged 23 or over. (d) travel allowance; (e) accommodation allowance; (f) food/meal allowance; (g) social support for trainees with dependents; (h) personal accident insurance. Support for the training of employed adults is provided by the companies within the scope of the monitoring and evaluation of the Operational Programme Competitiveness and Internationalization Operational Programme (POCI/COMPETE 2020). The IEFP also offers social support programmes when there is no EU funding for VET courses and training providers, including training providers, including companies, such as the POCH, complemented by some actions funded by POISE. These operational programmes are part of within the framework of Portugal 2020, a partnership agreement adopted between Portugal and the European Commission, which brings together the actions of the five European Structural and Investment Structural and Investment Funds, including the ESF. Employers can receive financial support for staff training or to cover costs when the training is provided during normal working hours and is carried out by an external training provider. The government provides financial support to companies that enter into employment contracts with unemployed people, with provision of training. Firms providing vocational training to employees also benefit from exemption or reduction of the employer's

social security contributions. Due to the Covid-19 pandemic, the government has launched an exceptional training plan to enable employers to promote the professional qualification of their employees. The initiative aims to help businesses mitigate the challenges posed by the Covid-19 pandemic, ensuring their viability and the maintenance of employees' employment contracts.

3.3.7. Ireland

Skills to Advance – run by SOLAS and ETBs, this initiative provides reskilling and upskilling opportunities to employees in jobs undergoing change or those employed in vulnerable sectors. Post Leaving Certificate (PLC) courses Apprenticeships & Traineeships – Organized through SOLAS, ETBs, Institutes of Technology; these are programmes of structured education and training which combine learning in the workplace with learning in an education and training center (NFQ Level 5+ / EFQ Level 4+) Further Education and Training (FET) courses Vocational Training Opportunities Scheme (VTOS) – an education and training programme for unemployed people Youthreach – provides opportunities for school leavers without formal qualifications to build on work skills and basic education Back To Education Initiative (BTEI) - provides part-time education programmes, giving participants an opportunity to combine a return to learning with family, work and other responsibilities.

4. Upskilling and Updating Workforce: "Existing Competences and Expected Future Competences"

The demand for qualified employment with mixed high skills is colliding with the speed of technological change, accelerated by the pandemic. New personal and soft skills like communication skills, adaptability, continuous learning etc. will be needed more Demand for emerging, highly digitalized professions will grow as new technologies are adopted in the production of goods and services. The technological podium is occupied by cloud computing, big data analytics and the Internet of Things. This is followed by cybersecurity, artificial intelligence, and digital commerce and robotization. Among the sectors most affected by this transformation are Digital Communications and Information Technology, Financial Services and Healthcare. The sudden and dramatic change in the workplace landscape has accelerated emerging trends such as flexible working, high-EQ leadership, and re-skilling, to the point where they are now fundamental to organizational success (hybrid working, result driven work, new leadership competencies, mass upskilling, increased personal responsibility) More emphasis on sustainable development and practices doubled by HRM and Talent Management – managing more diverse workers (in-line with ageing population and diverse ethnic backgrounds)

Turkey - The current employment rates, skills mismatch situation, the pandemic, and the digital transformation it accelerated influence the potential change in workforce. Many SMEs are striving to manage its workforce and will need organizational changes inevitably. From workforce perspective, the demand with highly skilled employees will become prominent more than the day before. Technological and digital skills will become more demanded in future organizations. Besides, new personal and soft skills like communication skills, adaptability, continuous learning etc. will be needed more in such organizations. As lower cognitive jobs have a potential risk to transform into automation, employees will possibly be expected to have higher cognitive skills to manage organizations' stuff and utilities. Therefore, physical as well as lower cognitive skills will have a risk of not responding to the workforce in the next five to ten years.

Italy - The health and economic crisis caused by the pandemic is accelerating change in production, logistics and, consequently, work. An increasing percentage of companies are planning organizational changes to manage the different volumes of demand. Automation and digitization are the key words of this change. The demand for qualified employment with mixed skills is colliding with the speed of technological change, accelerated by the pandemic. Analytical thinking skills and creativity will be enhanced in new organizational structures. Demand for emerging, highly digitalized professions will grow as new technologies are adopted in the production of goods and services. The technological podium is occupied by cloud computing, big data analytics and the Internet of Things. This is followed by cybersecurity, artificial intelligence, and digital commerce and robotization. Among the sectors most affected by this transformation are Digital Communications and Information Technology, Financial Services and Healthcare. In this context, the skills needed to compete in the job market will also have to change. Critical thinking and analytical skills, problem solving, and self-management are skills that will be in high demand over the next five years. But the ability to work in multidisciplinary teams and to use and manage technology are also proving to be crucial.

Romania - The coronavirus pandemic has resulted in pivotal shifts in attitudes and expectations among workers and leaders, as both call for permanent changes in how and where we work, workplace relationships and future skills. The sudden and dramatic change in the workplace landscape has accelerated emerging trends such as flexible working, high-EQ leadership, and re-skilling, to the point where they are now fundamental to organizational success: - the working world is ready for a new "hybrid" model: a mix of office-based and remote working is the best way forward. The universal ideal of spending half the time in the office and half working remotely transcends geographies, generations and parental status. - the end of the hours-based contract and 40-hour week: trends are in favor of "results-driven work", whereby contracts are based on delivering against business needs rather than working a set number of hours. - new set of leadership competencies and these expectations are expected to accelerate a reinvention of the modern-day leader. - mass upskilling, especially digital skills and further digital upskilling in the post-pandemic era - sustaining trust in the new working world (increasing personal responsibility).

Czech Republic - As there is quite a high-level of professional training in the Czech Republic, soft skills will be demanded, as these provide higher flexibility of employees. As digital skills are and will be a must, there will be high demand for IT skilled employees either newly hired or trained by the company. SME´s will become more digitized using various kinds of software, the ERP systems will require employees at all positions to have some level of IT skills. And these systems will have to be introduced within companies, although their implementation is rather difficult as it requires the current employees to change their modes of operation. After the recent lockdowns there remained an increased demand for home office on part of the employees. Also some companies discovered advantages of this system (lower costs of renting of offices etc.), even though others refuse this. However, it is very likely that the percentage of companies enabling home-office at certain positions will increase. There will be a considerable amount of training done at companies themselves, as they have the tools and technology as well as the expertise.

Spain - We consider that there are 2 main changes that companies are facing in relation to the workforce: On the one hand, TELEWORKING or REMOTE WORKING. If before Covid-19, less than 5% of workers were teleworking at national level, this figure has multiplied sharply due to the pandemic, exceeding 30%. This fact has forced the Spanish government to urgently address the reform of Article 13 of the Workers' Statute, which had already become obsolete and insufficient, by approving Law 10/2021, of 9 July, on teleworking. The main novelty of this Law is the stiffening of sanctions for companies that fail to comply with the obligation to sign a teleworking agreement adapted to the Law. On the other hand, the need for training in digital skills. Companies of all types (not only large corporations, but especially SMEs) need to implement digital talent in their processes. It is not only a question of hiring professionals with solid digital skills, but also of transforming their own workforces through constant training. The digital transformation of companies is a process that requires great perseverance and must be permanent. In order to acquire technological knowledge, it is necessary to change the mentality of the entire organization of a company, from its management to the employees of its different areas.

Portugal - The investment in training in the digital area will continue to grow very significantly and, since digital skills are a need across all areas/departments and functions, the development of training plans should also be transversal, aimed at all employee profiles. The ICT

(Information, Communication and Electronic Technologies) companies, all professions transversally need training in the digital area. In the case of Industry, digital training is more necessary in one or another specific case, namely in the indirect areas of R&D, engineering, maintenance, marketing and commercial, but also in key people of the operation (such as supervisors of manufacturing/assembly lines or supply chain managers to improve process efficiency). Several companies provide in-house training given by their own employees (specialists in the training topics) and some of them even have their own Academies. The training area itself should increasingly adopt digital technologies, such as the use of virtual reality, in which unique virtual environments can be simulated to teach techniques, skills or procedures in exceptional conditions without having to be replicated in reality at very high costs. Enterprises should have the means to identify the need to upgrade skills and qualifications, either by using their own means or by activating the opportunities offered by VET provision.

Ireland - Digital transformation – re-configuration of operational structures to accommodate distributed teams, emergence of new technologies means more emphasis on training and development/upskilling (new skills needs), new roles emerging in-line with change (e.g. new senior positions such as chief digital officer, digital evangelist, innovation officer, chief digital innovation officer – demand for cross-sectoral skills with business and technological capabilities). More emphasis on sustainable development and practices - Corporate Social Responsibility – CSR strategies, sustainable work placement opportunities, flexible working (giving students an opportunity to work while studying, more emphasis on transversal skills with versatile responsibilities, introduction of 4-day working week), workplace design, new leadership and management approaches, human resources development initiatives, workplace productivity initiatives HRM and Talent Management – managing more diverse workers (in-line with ageing population and diverse ethnic backgrounds), established career pathways and opportunities for continuous learning or up-skilling (emphasis on professional development), health and wellbeing of employees (work-life balance), talent retention Remote & Hybrid working – changing nature of work, this was particularly evident during Covid-19 pandemic.

4.1. Current Competences Are Expected/Needed to Be Updated and Upskilled Within Labor Market

The following clusters of skills can be considered as Current Competences Are Expected/Needed to Be Updated and Upskilled within Labor Market:

1.- Technological and digital skills – technology, media, information literacy, data analytics and online content development and curation – particularly in-line with the changing nature of work (remote and hybrid working); technical competences corresponding to 4.0 industry

2.- Higher order skills (extended set of competencies in addition to core qualifications, key across all skill levels) – flexibility, entrepreneurship, willingness and ability to adapt, problem solving, conflict management etc.

3.- Transversal skills/cross-sectoral skills – data analytics, foreign language and cultural awareness, problem solving, innovation, creativity etc.

4.- Multilingual skills - particularly relevant to professionals in ICT, Sales & Marketing, Financial Services and Freight Transport, Distribution & Logistics

5.- Social skills – interpersonal skills - communication and negotiations, empathy, social awareness, tolerance, cultural adaptation and awareness of diversity, gender equity

6.- Physical skills – motor skills and strength, all skills that involve physical condition The transversal skills, soft skills, cross-sectoral skills may include some very relevant new aspects such as: Meaningful decisions, Social intelligence, Innovative and adaptive thinking, Culture and diversity, Big Data Universe, Media literacy, Trans disciplinarily, Creative mindset, Knowledge management, Virtual collaboration.

Perspective of the SMEs; The skills and competences that need to be updated and reinforced coincide with the "future" skills that workers should have considered the current scenario The professions will continue to have the same names but will undergo major changes at functional level (many, more specifically, with a heavy load of analytical functions). We are witnessing the emergence of new professions, precisely those that arise from the specialization of functions that historically were not disaggregated, as is the case of modelling technicians, a profession that did not exist until now Beside the already mentioned clusters of skills, SMEs may consider also: ***Management skills – leadership and people management skills, supervisory skills, financial literacy, strategy, project management, risk management, innovation and change, marketing and Business / Cross-enterprise skills – entrepreneurship, innovation, creativity and design, sales and marketing***.

Technological perspective; Urgent upskilling needed. All ITC related skills and basic digital skills are required and will be further required. All technical competences corresponding to 4.0 industry are to be developed, updated and upskilled. Various industries involve high demand of more specific technical skills, in new domains and in emerging industries together with reorganization of other traditional domains (e-commerce, marketing, etc.).

4.2. The Lower/Higher Cognitive Skills and Socio-Emotional Skills Are/Will Be in Demand Within Labor Market as A Consequence of Lower Interest in Manual and Repetitive Jobs

It will make no sense for young people of school age to prepare them only for the professions of today, which may disappear in the future. They need to be equipped. They must be equipped above all with ***horizontal skills and abilities*** that will enable them later on to adjust more easily to the occupational profiles of the future. For the active workers, the ongoing mutations are giving increased importance to training and professional recycling actions so that they maintain the necessary ***employability skills***. They will certainly need to have ***the ability to process and evaluate information, the ability to learn, to process and apply knowledge, to analyze and reason, and to evaluate and decide***.

Among the mentioned higher cognitive skills mentioned are: ***cognitive flexibility, complex problem solving, critical thinking, literacy and numeracy (including quantitative and statistical skills), strategic thinking, decision making, reliability, research skills, time management, organization, creativity***.

Emotional intelligence has clearly emerged as the defining trait of today's successful employee Some emerging mentioned skills are also: ***entrepreneurship and initiative taking, interpersonal skills, empathy and respect (including ethical values), communication and negotiation, adaptability and resilience, passion and enthusiasm, personal motivation, self-control and ability to focus, team working***.

Some of the additional skills mentioned are: ***Foreign languages, Intercultural competences, Personal well-being, Mental hygiene, mental health, Resilience, Skills for international trade, Cross-enterprise skills Good leadership*** from companies is essential. The border between working and personal life might become important There will be a greater need to reform education and emphasize the vocational training routes.

5. Conclusion

In accordance with the findings from partner countries, Table 5 is prepared and presented below:

Table 5. The Needed Competences from Partner Countries

The Needed Competences	Turkey	Italy	Romania	Czech Republic	Spain	Portugal	Ireland
Advanced maintenance of railway rolling stock					●		
Analytical Skills		●					
Analytical Thinking	●						
Artificial Intelligence and Big Data					●		
Artisan Bakery and Pastries					●		
Audio Description and Subtitling					●		
Cell cultures					●		
Citizenship and employability						●	
Citizenship and Professionality						●	
Communication and Negotiation Skills		●		●			●
Counselling			●				
Creativity		●					●
Critical Thinking							●
Culture, language, and communication						●	
Culture, Technology and Science						●	
Cybersecurity in Information and Communication Technology Environments					●		
Cybersecurity in Operational Technology Environments					●		
Decision-Making	●			●	●	●	
Digital Design							●
Digitization of Industrial Maintenance Intelligent					●		
Emotional Connection					●		
Entrepreneurship							●
Flexibility	●						
Group Work		●					
Guidance			●				

Hybrid and Electric Vehicles Safety Maintenance Sector Additive Manufacturing					●		
Implementation of 5G networks					●		
Independent Thinking				●			
Information and Communication Technologies (ICT)						●	
Innovative Skills	●				●		
Intercultural Skills		●					
Language and Communication						●	
Manufacturing Building Information Modelling (BIM)					●		
Mathematics for Life						●	
Mathematics, science and technologies;						●	
Numeracy and Literacy	●			●		●	
Operation and Promote Responsibility				●			
Organization					●		
Peer Education		●					
People Management							●
Problem Solving	●	●		●			●
Railway signaling and telecommunications systems					●		
Reflection skills	●						
Skills Assessment			●				
Taking Responsibility	●			●			
Teamwork		●					
Technological/Digital Competencies	●					●	●
The Capacity to Learn New Skills	●						
Videogame Development					●		
Virtual Reality					●		
Willingness to learn Tertiary sector – services				●			
Workshops on Real Tasks, Project Work, Public Events, Dissertations, Competitions		●					

There is a general need to strengthening skills intelligence, this meaning that in order to skill for a job, there is a need for ‘real-time' information on skills demand, including at regional and sectoral level, using big data analysis of job vacancies and making it widely available. Artificial intelligence and big data analysis have great potential to identify the skills needs of the future. They can complement more traditional sources of information such as official statistics and employer or sectoral surveys. All reports mention the need to adapt the system to the requirements of the labor market and to the socio-economical general context (including, for example, the big changes produced by the Covid crisis). The future needs to ensure that vocational education and training is agile, adapting swiftly to labor market needs and providing quality opportunities for young and adults alike Several reports mention skills to support the green and digital transitions: developing a set of core green skills, statistical monitoring of the greening of our workplaces, boosting digital skills. Companies are already facing skills mismatches and gaps notably to master the green and digital transitions. Several reports mention meta skills/transversal skills, soft skills and skills for life: complex problem solving, critical and analytical thinking, taking responsibility, communication skills, flexibility, and the capacity to learn new skills There is a need for increasing STEM graduates and fostering entrepreneurial skills by encouraging especially women into Science, Technology, Engineering and Maths The integration between formal and non-formal learning contexts, enhancing the cultural and educational dimension of the "work system" is highly considered. The aim is to increase the flexibility of vocational education and training, including by encouraging modular and non-formal learning methods It is important to broad the teaching methods to be used, so as to encourage the expression of all types of student intelligence by including in ordinary teaching activities capable of stimulating practical, social, emotional-relational, intuitive, reflective and argumentative intelligence (group work, peer education, problem solving, workshops on real tasks, project work, public events, dissertations, competitions, etc.) Several reports make reference to the key competences in VET and lifelong learning: - Basic Level Standard: Language and Communication; Mathematics for Life; Citizenship and employability; Information and Communication Technologies (ICT). - Secondary Level Standard: Culture, Technology and Science; Citizenship and Professionality. There is a general need for embedding environmental and social sustainability into vocational education and training curricula and organizational management.

Generally, VET programs need more to make a balance between providing practical and specific occupational skills with providing a set of flexible, transferable, and employability skills. The involvement of social partners – business associations and trade unions – is crucial. Social partners play an important role in the governance of training systems, in creating training opportunities, and in providing training. VET providers need to reinforce opportunities for work-based learning and apprenticeships There is an expressed need in giving a certain level of autonomy to the VET providers, allowing them to react quickly to skills challenges, offer fast reskilling programmes and work in close partnerships with employers from both public and private sectors The key competences are all of equal importance: - they are dynamic, they change in the course of life and the evolution of society; - they can be applied in many different contexts and in different combinations; - they overlap and are interconnected. The key competences, therefore, are not "additional", nor are they juxtaposed to the curricular competences, but they orient teachers' planning and allow educational proposals to be adapted to the specifics of the context and to the personalization of the courses. All systems should focus on linking vocational education and training to forward-looking economic strategies and

innovation systems, ensuring better permeability between all sectors of education and training There is a need for embedding environmental and social sustainability into vocational education and training curricula and organizational management and a need for increasing the digital readiness of vocational education and training institutions VET needs to develop appropriate career guidance professional development, which will enable teaching those skills. In this way, they will be well-informed by labor market and be ready to it in close future. Several reports identify the high demand for up-to-date professional knowledge among VET graduates or part of the employers Some specific clusters of competences and skills have come to the fore that were not considered until now: Innovation: the ability to search for solutions, to detect changes and to see opportunities are in great demand in a competitive environment and are in tune with adapting to future scenarios. Emotional connection: it is not enough just to be sociable; we must also learn to know ourselves better and enhance our most human side, which is essential when it comes to developing skills. Organization: prioritizing the most urgent and important tasks over others to make the day more productive. Decision-making: starting from a good analysis of the situation and being agile in the decision-making process.