

Insights from the SkillsPULSE Conference

“Re-Thinking Europe’s Skill Needs: Reflections Following the European Year of Skills”

On October 29, the SkillsPULSE Conference “Re-Thinking Europe’s Skill Needs: Reflections Following the European Year of Skills” brought together in Rome representatives of European and international institutions, policy makers in the Member States, researchers, experts and other stakeholders to share diverse perspectives, knowledge and discuss potential solutions for addressing Europe’s emerging skill needs and skill imbalances.

The discussions were introduced by Giancarlo Dente, Coordinator of Policy Evaluation and Human Capital Area at the Fondazione Giacomo Brodolini (FGB), and Liga Baltina, Head of Labour Market and Skills Research at FGB and coordinator of the SkillsPULSE Project.

Keynotes:

Glenda Quintini, Head of Skills and Future Readiness Division, OECD.

- Presented the research conducted by OECD in skills-related areas and emphasised that demographic change, coupled with digital and green transition, profoundly impact skill needs.
 - Populations are ageing in all OECD countries, and this trend affects both demand (e.g., consumer preferences, healthcare pressure) and supply of skills (e.g., skills obsolescence, physical intensity of tasks, motivation to train).
 - Digital advances in AI have broadened the set of skills that can be replicated by automation. Tasks more susceptible to automation are, for instance, scheduling, finger dexterity, fine arts, reading comprehension, etc. Examples of bottlenecks to automation are social perceptiveness, negotiation, service orientation, complex problem-solving, critical thinking, etc. Overall, there is no major decline in employment for now, but the content of jobs is changing.
 - The green transition will have an impact on skills and jobs needed in the future. Additionally, new green jobs require more systems skills, resource management skills and technical skills than other jobs across all skill levels.
- Regarding the supply of skills, a decline in student performance was observed, and that 27 per cent of adults have low competencies across OECD countries.
- Overall, there is a misalignment of supply and demand, which results in skills imbalances. Shortages may challenge the twin transition in the future.
- Occupations in shortages seem to be skewed towards high- and medium-skilled occupations.
- Training is crucial, but many adults do not train. The reasons are mostly time constraints related to work (29 per cent), lack of financial resources (15 per cent), shortage of time related to family (15 per cent), inconvenience of time and place (12 per cent), and lack of employer’s support (7 per cent).

- Policies related to cost reduction, skills-first approaches, making training provision more flexible, and strengthening the ecosystem are actions to be considered when trying to increase adult training.
- Relevant publications of OECD: **Getting Skills Right** collection that includes ‘*Training in Enterprises – New evidence from 100 case studies*’, ‘*Incentives for SMEs to invest in skills – lessons from European Good Practices*’, ‘*Future-ready adult learning systems*’, ‘*Measuring skill gaps in firms: the PIAAC employer module*’, and ‘*Bridging talent shortages in tech, Skills-first hiring, micro-credentials, and inclusive outreach*’.

Antonio Bonardo, Vice President of World Employment Confederation (WEC-Europe)

- The focus of this keynote speech was on the contribution of the Human Resources services industry to addressing labour and skills shortages.
- Based on a longitudinal survey conducted for WEC amongst 715 multinational companies and public organisations from 19 countries in 2024, the companies main reasons for using agency workers are the access to specific digital skills (37 per cent), access to a higher calibre of talent (36 per cent), the ability to transfer digital skills to permanent employees (29 per cent), access to specific non-digital skills (17 per cent), and specific project work (16 per cent).
- While senior executives recognise the urgency of adapting to rapid technological change and the resulting skills gap, they view agency workers as a valuable resource to bridge this gap. These temporary workers not only bring in-demand skills but also help transfer knowledge to permanent staff. The agency work sector is responding by providing targeted skilling and reskilling programmes, training millions of workers annually to meet the evolving needs of the workforce.
 - 62-97 per cent of responding countries report having major elements of social protection in place for agency workers.
 - 76 per cent of responding countries report that agency workers have a right to training in case they become unemployed.
- Examples of practices from Italy (Welcome&Work), Belgium (Travi) and the United Kingdom (REC) were presented.

Launch of the skills book and experts’ panel “*Tackling labour shortages, green jobs, and AI-driven workforce transformation*” with Lukasz Arendt (Associate Professor, University of Lodz, Poland), Eamonn Davern (Independent Employment Services Expert), Matteo Sgarzi (Head of Mission International Relations, Centre d’Etudes et des Recherches sur les Qualifications (CEREQ), and Iván Diego Rodríguez (Project Manager, Valhalon, Spain). The discussion was moderated by Liga Baltina.

General overview: This panel discussion was focused on 1) the emerging AI jobs, 2) the respective evolving skills demands in the new roles, 3) the extent to which entrepreneurship skills are integrated into education for the digital and green transition, and 4) the role of Public Employment Services (PES) and career counselling in supporting this adaptation, including the essential role of promoting cooperation between career counsellors, employers, VET providers, PES, and social partners to ensure effective reskilling/upskilling in the context of green and digital transitions.

Main takeaways:

- It is important to clearly define what AI jobs and respective skills are. Then, one needs to understand whether the skills needed for AI occupations should be taught or need to be acquired through work experience. The conversation touched upon the shared responsibility

between educational institutions and employers in supporting the adaptation of the workforce to the evolving skills demanded by AI jobs.

- Entrepreneurship competence, as defined by the Key Competencies of the Council, has been suffering from issues in defining what exactly entrepreneurship is and how an entrepreneurship skill should be taught. Following this, one needs to understand whether there should be courses dedicated to entrepreneurship or whether this competence should be transversally incorporated across the curricula.
- The role of PES in supplying AI skills or supporting those displaced by automation was explored. Examples of best practices were shared, such as in the Flanders region of Belgium, where PES not only reaches out proactively to individuals but also provides career guidance alongside training recommendations.
- The example of the “*Conseil en évolution professionnelle*” (CEP) in France shows how structured counselling can bridge gaps between VET providers, employers, and PES in the context of AI and sustainability transitions. Issues around the training of the CEP workers were highlighted.

Policy experts and researcher’s roundtable “Measuring labour and skill shortages in Europe and their social and economic impact” with Seamus McGuinness (Professor and Research Area Co-ordinator for labour market research, Economic and Social Research Institute, Dublin), Irene Mandl (Head of the Information and EURES Unit, European Labour Authority), Ilias Livanos (Expert at the Department for VET and Skills, CEDEFOP), and Marcin Kocór (Professor, Jagiellonian University in Krakow). Session moderated by Giuseppe Ciccarone (Vice Rector at Sapienza University in Rome).

General overview: The aim of this roundtable was to discuss and better understand the various approaches undertaken by research institutions and EU agencies for identifying and quantifying labour and skills shortages and observing the economic and social outcomes of such shortages. In this session, the methodology developed in the SkillsPULSE project to define and measure skills shortages and gaps was presented, along with some initial results of the research efforts conducted. The experiences and approaches of Cedefop, the European Labour Authority, and the example from Poland further enriched the discussion and complemented the project’s approach.

Main takeaways:

The relevance of studying and understanding all the potential impacts of labour and skills shortages was reaffirmed, given the transformations the EU labour markets are experiencing in the green, digital and demographic transition.

The SkillsPULSE project approach regarding the investigation of skills shortages and gaps in the European Union focuses on:

- Review previous measurement techniques and evidence base related to skill shortages and gaps to better understand and define the conceptual framework.
- Conduct an empirical analysis of skills gaps in Europe based on data collected through the European Skills and Jobs Survey (ESJS) and other available sources of information.
- Build new data to understand the impacts of skill shortages and skill gaps on country-level performance using various sources of information such as the European Labour Force Survey, the European Skills and Jobs Surveys, and European Company Surveys.

Initial results of the SkillsPULSE project revealed that skills shortage and skills gaps represent themes understudied in literature, contrasting with their policy relevance in the EU. Also, a lack of consistency

in the approaches adopted in the studies found during the literature review phase was identified, indicating the complexity of adequately measuring skills shortages.

The analysis of ESJS results observed that undereducation (i.e., the level of education of workers is below the education level required by the job) in Europe is declining from 14 per cent in 2014 to 12 per cent in 2021 and that around 16 per cent of workers in the EU perceived themselves, at great extent, under-skilled (i.e., stating that their skills and abilities did not meet the requirements of the current job) in 2021.

The methodology developed and proposed in the SkillsPULSE project to measure skills shortages in the EU is based on data from 2021 ESJS and validated through Online Job Vacancies (OJA) data collected by the Lightcast company. The initial results indicate that the EU average of the incidence of skill shortages across occupations was around 3.4 per cent (ESJS data) and 2.4 per cent (OJA data). This proposed approach will be further developed based on expert input received at consultation events organised at the EU level and in the Member States.

The European Labour Authority conducts an annual exercise to identify labour shortages and surpluses in the EU under the EURES framework. Based on the inputs provided by EURES partners and members, the 2024 report reveals increasing shortages across Europe, with particularly high incidences in sectors such as construction, engineering, healthcare, and ICT. Some of the occupations facing stringent labour shortages were heavy truck drivers, nursing professionals (including specialists), doctors, electricians, roofers, waiters, and construction labourers.

Cedefop Skills Forecast data provides relevant information for investigating emerging labour shortages in the EU. In this context, observing the evolution of three specific areas, namely the expansion of demand for labour, the long-term replacement needs, and the labour market imbalances (i.e., the share of occupational employment that is likely to encounter difficulties in finding a workforce with the right level of education) can offer a snapshot of the occupations that may face labour shortages in the future. The occupations with potential emerging shortages in the 2035 time perspective include: legal, social, cultural and related associate professionals; science and engineering professionals; personal service workers; personal care workers; building and related trades workers, excluding electricians; drivers and mobile plant operators; street and related sales and service workers.

The example from Poland revealed a skills mismatch in the Polish labour market related to both professional skills linked to the specific needs of each position and generic skills required in every job (i.e., self-organising and interpersonal skills). An essential step in solving the professional skills challenge is the identification of the specific missing skills for each job and then including the acquisition of those skills in formal and non-formal education systems. In this context, it was emphasised the essential role played by employers in developing the curricula and training plans to ensure the delivery of the skills they need.

Interactive sessions on the book's themes with the authors:

- **“Labour or skills shortages?” moderated by Professor Terence Hogarth (University of Warwick)**

The discussion under this topic explored the nature and extent of labour and skills shortages, questioning whether current labour market challenges derived from a lack of workers or a lack of skills. To explore this question, empirical evidence on labour and skills shortages was presented, methodologies and data issues were discussed, and the speakers went from an overarching conversation about structural causes and consequences of shortages and mismatches to a closer look into the role of PES in addressing these gaps.

□ **“Honing in on specific skill needs” moderated by Maria Laura Fornaci, Coordinator of Future of Workers and Senior Expert (Fondazione Giacomo Brodolini)**

The session was dedicated to discussing specific skills areas that are increasingly in demand in the EU labour markets. These areas are linked with the major transformation determined by the twin transitions digital and green.

A sector-based approach focused on those related to environmental protection reveals that the number of jobs classified as green in the EU tends to be around 2.5 per cent. With respect to green skills, it was emphasised that an enhanced focus is required to identify the skills needed and to ensure that emerging skill shortages do not act as a drag on the transition to a greener economy.

The expansion in the use of AI-related technologies in the last few years has boosted the demand for specific skills to harness AI's transformative power. In this context, an analysis of 2023 online job vacancies in Poland has revealed the expanding demand for skills related to programming in Python, the ability to use the SQL query language and overall data analysis skills to develop and implement solutions based on analytical models. Further, investigation in selected EU Member States has indicated that the skills required in AI professions are not strictly AI-related, having more of a general IT characteristic (e.g., ability to use spreadsheets or knowledge of business ICT systems).

□ **“Effective and fair skill infrastructures in Europe” moderated by Iván Diego Rodríguez (Project Manager, Valnalón, Spain)**

The chapters on this topic cover various approaches to building inclusive and effective skill development frameworks across Europe. Papers cover country-specific initiatives, such as Catalonia's EmprènFP for entrepreneurial skill-building in VET, and France's CEP service aimed at supporting career guidance. Other discussions focus on apprenticeship models in different economic systems and the integration of diversity and gender equality into skill policies.

Policy roundtable “Skills for a sustainable future. Italy” with Ettore Russo (Senior Policy Advisor, Anitec-Assinform), Eleonora Pisicchio (General Director, Fondo For.Te), Raffaele Saccà (Director Training Account and Territorial Articulations, Fondimpresa), Massimo Temussi (General Director of Active Labour Market Policies, Ministry of Labour and Social Policies), and Paola Vacchina, President, Forma). It was moderated by Luca Dordit (Education and labour market policy analyst, University of Udine) and preceded by a keynote by Roberto Angotti (Head of the Continuing Vocational Training and Adult Learning Research Group, INAPP). Conclusions were presented by Giuseppe Forte (Head of Human Capital Research Unit at Fondazione Giacomo Brodolini)

General overview: After having identified the main challenges affecting the Italian labour market, primarily the digital and demographic transitions, the aim of the policy roundtable was to discuss the emerging skills needs and their impact on the development of training policies, specifically focusing on the Italian case. The presentation of the main findings from an ad-hoc survey conducted by INAPP was followed by a discussion on how both policy-makers and training providers are adapting to these changes, and what are the future perspectives for Italy.

Keynote: Roberto Angotti, Head of the Continuing Vocational Training and Adult Learning Research Group, INAPP

INAPP periodically produces two surveys: INDACO-Imprese and INDACO-Adulti. INDACO-Imprese aims at identifying the demand and supply for training and non-formal and informal learning within companies (including the incidence, participation rates, intensity, and costs of training), as well as thematic insights on seniority management and digital and green transition. INDACO-Adulti focuses

on adults' participation in formal, non-formal, and informal education, as well as disparities in access based on socio-demographic, cultural, and professional factors.

The key findings from these surveys highlighted that:

- With almost 69 per cent of companies with 10 employees or more providing training to their staff, in 2020, Italy ranked 15th in the EU. Such figures depend significantly on regional disparities and company sizes, as well as on the economic sector.
- Between 2018 and 2021, the percentage of companies with six or more employees offering Continuing Vocational Training (CVT) declined from 58 per cent to 53 per cent. This trend highlights a low level of innovation in organisational and business models, along with a general lack of focus on skills development.
- Focusing on digital transformation, the relevance assigned to digital skills increases with the size of the company, as more than half of micro-enterprises and nearly half of small enterprises consider digital skills irrelevant.
- Companies' size also affects the kind of digital skills deemed relevant, with micro and small enterprises giving more importance to basic digital skills (e.g., browsing, searching, filtering, evaluating, and managing digital data and content) and middle and big enterprises assigning more importance to specialistic skills (e.g., cybersecurity and privacy management). Training offers, however, do not align with the importance assigned to these skills.
- The level of commitment to training on digital skills varies by sector: companies in the services sector are the most committed, while those in the industrial sector are less inclined to adopt policies aimed at developing digital skills. This indicates an overall lack of a clear, coordinated strategy to address emerging digital and technological challenges.
- In the 25 to 64 age group, 44 per cent are classified as low-skilled. Among those, most have a low educational level, typically only a middle school diploma and roughly half are employed. When employed, 58 per cent of low-skilled individuals hold jobs that do not require qualification. Despite this, a noteworthy proportion of low-skilled employees is registered among legislators, entrepreneurs, and senior management (26 per cent).
- Participation in training opportunities, both formal and informal, is lower among low-skilled individuals compared to those with medium and high skills. Addressing what has been defined as the "training paradox", for which training primarily reaches those who need it least, requires a set of integrated policies spanning ALMP, targeted training in terms of up-skilling and re-skilling, and a better analysis of skills needs from companies.

Main takeaways: The discussion after the keynote speech and presentation of research findings emphasised the following key points:

- the importance of interprofessional funds in developing flexible and sustainable training strategies in Italy;
- the need for training programs to move beyond purely technical skills, adapting to individuals' diverse needs by considering both their existing skills and their companies' demands;
- the critical role of integrating Continuing Vocational Education and Training (CVET) with Initial Vocational Education and Training (IVET) alongside supportive educational policies.

In summary, training is important not only for addressing changes in the labour market but also as a tool for promoting social and economic inclusion.