SKILL OVERKILL: THE EU NEEDS MORE THAN JUST MORE TRAINING

THE EU'S UNION OF SKILLS SHOULD FOCUS ON NOT JUST LABOR SUPPLY, BUT ALSO DEMAND

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Executive Summary

The European Commission's recently launched Union of Skills initiative aims to enhance the quality of education and training across the EU by fostering lifelong learning, facilitating the mobility of workers, and attracting and retaining talent.

This ambitious effort builds upon a long history of European skills development policies, but it begs the question: what will be different from previous initiatives?

While economic theory and empirical evidence on human capital affirm the positive effects of education and training on productivity and economic growth, there is a tendency to treat skills enhancement as a universal remedy for labor market inefficiencies. Investment on skills is necessary, so the EU's focus on it is commendable; but it is a mistake to consider it a sufficient policy.

This policy brief critically examines some challenges of a skills-only approach, highlighting the risks of a labor supply-driven approach to skills provision and advocating for a more complete strategy that includes demand-side interventions and the matching process.

A closer look reveals three key risks associated with a skills-first approach:

1. **Overqualification and Skill Wastage** – Data shows that EU countries with a lower share of tertiary graduates tend to experience higher overqualification rates, suggesting that only working on the supply of skilled workers does not automatically translate into better job opportunities.
   If the demand for high-skilled labor is not sufficiently robust, many workers end up in positions that do not match their qualifications, leading to inefficient use of resources.

2. **Prolonged Unemployment Among Skilled Workers** – When workers acquire new skills but cannot find jobs that match their qualifications, they may remain unemployed for longer periods in search of appropriate opportunities.
   And in fact, where overqualification rates are higher, unemployment rates for tertiary graduates are higher.

3. **Brain Drain and Labor Mobility Challenges** – In the absence of adequate domestic opportunities, highly skilled workers may choose to migrate to countries where their qualifications are more valued.
   Evidence shows a correlation between high unemployment rates among tertiary graduates and increased emigration of young professionals across EU countries, raising concerns about long-term economic sustainability in skill-exporting countries.

This evidence points to a less talked-about mismatch, which weakens the intended economic benefits of upskilling initiatives and calls for policies that stimulate job creation and occupational quality in high-value and high-skill sectors.

To maximize the effectiveness of the Union of Skills, policymakers must go beyond supply-side measures and focus on strategies that enhance the demand for skilled labor as well as give firms and employers a much more active role in the provision of the skills they need.

Social partners, including employers' organizations, must be actively involved in shaping skills programs to ensure their relevance to industry needs. Employer-led apprenticeships, on-the-job training initiatives, and academic-industry collaborations can enhance the utility of skills investments.

In doing so, however, policymakers must also guarantee the quality of hybrid learning instruments available. Internships, apprenticeships, and other hybrid work-learning arrangements must be protected from exploitation to ensure meaningful skill acquisition.

Improved data collection and skills tracking are also needed to be able to perform better analysis on skills and on labor market matching. More granular data on overqualification, employment trajectories, and migration patterns is needed to refine policy interventions and ensure skills programs align with labor market needs.

While investment in skills is crucial for economic development, it alone does not serve as a panacea for all labor market challenges. A more holistic approach is essential: one that pairs skills development with policies aimed at stimulating demand, improving job quality, and fostering inclusive economic growth.

Introduction

In March 2025, the EU Commission launched the Union of Skills, an ambitious plan to invest in the training and education of individuals to boost productivity and the quality of learning in the EU.

The umbrella definition is very broad, encompassing as "skills" essentially any kind of competence – from basic knowledge in the schooling system to high-level and job-specific abilities needed for the most qualified occupations.

The plan is based on four pillars:

1. building skills for quality lives and jobs, through basic skills support schemes and investment in VET (vocational education and training);
2. promoting regular upskilling and reskilling, during life-long learning;
3. helping the free movement of workers in the Union, through portability of skills and certifications;
4. attracting, developing, and retaining talent – with an eye to both the ageing challenge and current geopolitical issues.

Such an ambitious project, however, risks clashing with two realities: one of competence, since the Treaties do not really give the EU much wiggle room to enact binding measures on education and training; and one of efficacy.

This policy brief will focus on the latter economic issue, namely the efficacy of acting on the supply of skills alone.

Is this time different?

On paper, the Union of Skills is a very ambitious plan. Yet is not the first one: the goal of enhancing the skills of the European population, and the workforce in particular, has a long history. The EU's engagement with adult learning and skills development can be traced back to the Treaty of Rome in 1957, which emphasized vocational training.

A more structured approach emerged in the early 2000s. In 2002, the Council of the adopted a Resolution on Lifelong Learning, and in 2006 the Communication "It is never too late to learn" to emphasize adult learning's for employability, mobility, and social inclusion. This was followed by the 2007 Action Plan on Adult Learning (2008-2010), which provided common priorities for the sector.

The 2011 Council passed a Resolution on a renewed European Agenda for Adult Learning and in 2016, the New Skills Agenda for Europe proposed collaborative efforts to strengthen human capital, employability, and competitiveness. Then came the Upskilling Pathways initiative, aimed at enhancing

basic skills among adults, and the 2020 European Skills Agenda, which introduced a five-year plan focusing on upskilling and reskilling to support the green and digital transitions.

The EU designated 2023 as the European Year of Skills, reinforcing the importance of lifelong learning in addressing labor market shortages and supporting the twin transitions. This initiative served as a precursor to the Skills Union to promote a mindset of reskilling and upskilling, ensuring that individuals and businesses possess the necessary competencies for a rapidly evolving economic landscape.

These are just the main milestones in the EU's work on skills, many more programs and initiatives exist. Some intersect other pillars of EU policy – from the Horizon program to the cohesion funds (and these are the sources of funding for the Union of Skills).

Perhaps a rationalization of these initiatives might be of use, to create a more cohesive framework or ecosystem, and the Skills Union might provide such an occasion: if properly enacted, it can bring order to the existing policy instruments.

Panacea of all problems?

The EU isn't alone in putting consistent and growing effort in skills and qualifications of its labor force. As far back as labor market discourse goes, raising educational outcomes and improving the skills of workers has been recited as a mantra to improve almost any aspect of growth and labor market inclusion. And this focus has grown over time, hand in hand with concerns of skill shortages – as shown in Figure 1.

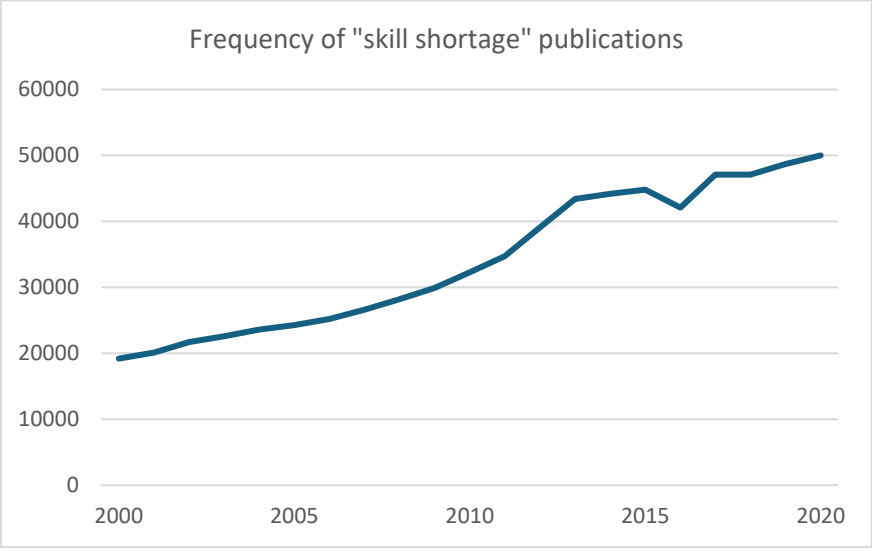

Figure 1: Number of publications on "skill shortage" per year. Source: Google Scholar.

An abundant literature shows the positive effects of a more qualified workforce. From Mankiw-Romer-Weil's (1992) augmentation of the Solow growth model to Mincer's (1984) analysis of human capital accumulation, education and training have been shown to contribute to income growth and living standard improvements.

Lucas (1988) similarly introduced a model where human capital is central to economic growth, proposing that investments in education and skills lead to sustained economic development.

All the way to more recent work, which shows that labor skills significantly contribute to economic expansion, particularly in the context of the knowledge economy, and that education substantially enhances labor productivity, thereby influencing macroeconomic performance (Gennaioli et al., 2013; Hanushek and Woessmann, 2020).

The OECD places great emphasis on skills, showing that firms at the productivity frontier employ a higher proportion of skilled workers, accounting for a significant portion of firm-level productivity disparities, and at the same time emphasizing the importance of skills and R&D investment in fostering industrial efficiency. (Cammeraat et al., 2021; Criscuolo et al., 2024).

This persisting emphasis on the beneficial effects of learning and skills on growth has fueled a policy approach that sometimes treats skill enhancement as the residual measure to cure all ailments.

Is the unemployment level high? Increase workers' skills. Does the country lag behind on innovation? Increase workers' skills. Are wages too low? Increase workers' skills.

Anytime there is a question about some economic or labor market imperfection, training and education seem to be a one-size-fits-all solution.

This is not to diminish the importance of quality education for workers, which remains crucial; but to highlight that one must frame it in the right context and pair it to investments and reforms in other areas, in order to create a fertile ground for these skills to become effective. In simpler terms, we need to act on the demand side of skills as well.

A country needs to make sure that there are effective available jobs for the workers that are being trained, otherwise it risks one of three outcomes:

1. Either the worker stays in the country where those skills have been provided, and these skills are wasted in jobs for which he/she is **overqualified** – which would be a waste of the resources employed to provide those skills;

2. or the worker prefers to keep looking for a good enough job to match the higher skills acquired, remaining **unemployed** until a satisfactory offer is found – which temporarily makes the worker and the new skills fully unproductive;

3. or the worker **moves abroad** where these new skills can be put to better use and valued more – which would imply a waste not only of the extra skills just acquired, but of the whole educational investment the country placed on the worker up to that point.

Current evidence on skills and qualifications

But are these three real dangers or exaggerated worries? What is the current status of skills provision and what are the resulting labor market effects?

I address all three of these outcomes in turn. A causal answer is not easy to identify: ideally, as I will discuss later, precise testing of these three hypotheses would require more detailed data than what is currently available. However, some big-picture evidence can already be identified, enough to warrant further research on the subject.

Outcome 1: Overqualification

With the growing emphasis on skill shortages and on the need for a more qualified workforce, as previously shown in Figure 1, one would expect countries with fewer highly qualified workers to be starving for skilled work.

It is quite stark to notice instead, as shown in Figure 2, that rates of overqualification (i.e. workers who perform jobs which require a lower qualification than the one they possess) are negatively correlated to the share of tertiary education graduates in the population. This means that countries with fewer university graduates also have the highest overqualification rates.

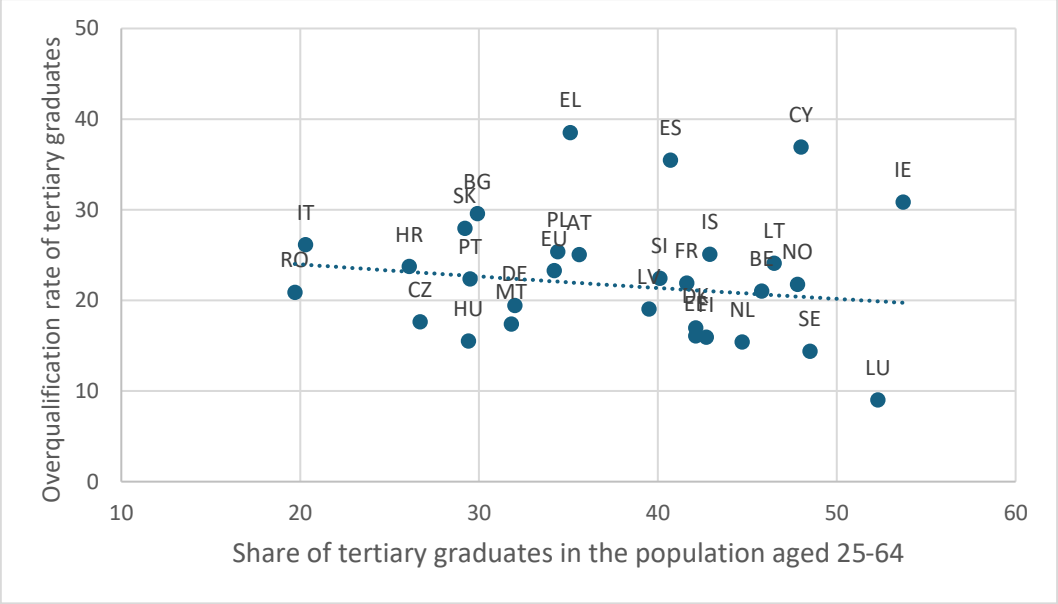

Figure 2: Relationship between share of tertiary graduates in the population aged 25-64 and overqualification rate among tertiary graduates in the same age group, in the year 2022. Source: author's calculations based on Eurostat and Cedefop data.

Clearly this is an issue that cannot be imputed to skills: fueling the labor supply of such countries with more training would likely result in even more overqualification.

The issue here does not lie in the supply of labor but rather in the demand for it. The productive capacity of these countries cannot put those skills to good use and rather demands lower qualifications.

One caveat is necessary: level of educational attainment and skills are not the same, and important differences might arise when looking at different levels of education. However, the only data source which on overqualification for a specific educational level is Cedefop's data on tertiary graduates. Thus, we can consider the analysis for tertiary educated workers as a subset of a more general discourse, or at best a proxy for the aggregate phenomenon.

Outcome 2: Unemployment

Not everyone (or at least not right away) might be content with a job below the skills they have acquired. Thus, someone might wish to refuse job offers below their qualification and prefer to prolong their unemployment spell in search for a better opportunity.

Figure 3: Relationship between overqualification rate and tertiary graduates' unemployment rate, in the age group 25-64 in year 2022. Source: author's calculations based on Eurostat data.

Figure 3 shows that indeed countries with more overqualified workers are also the ones with higher unemployment rates.

Once again, there appears to be a mismatch in the labor market. One might argue that mismatches are no new finding: a long literature has examined mismatch (Biagi et al., 2020; Brunello and Wruuck, 2021) and highlighted unemployment to be a possible result of it (McGuinness et al., 2018; Guvenen et al., 2020).

However, usually labor market mismatch is conceived as workers having too low or too few skills. And the policy prescription that ends up prevailing in response is to increase and enhance skills. Overqualification-driven unemployment, by definition, cannot be remedied by providing more skills.

Efforts would better spent on the demand side: in a time of ongoing transformations of production models, more qualified workers should represent an asset to speed up and facilitate the transition.

Workers who have invested in their skills should be valued, with a rewarding employment that can put their competence to good use and better wages and placement to reflect such value. If they cannot find a satisfying offer, as said previously and shown in Figure 3, they might prefer to prolong their unemployment spell and look for a better offer.

Outcome 3: Emigration

If even a lengthy search at home proves unsuccessful, some workers who have the opportunity to do so might choose to look for better job offers abroad. To check whether this is the case, Figure 4 combines yearly emigration flows with population data from Eurostat to develop an indicator for the emigration rate.

Given that Eurostat does not provide emigration data by educational attainment level, I take the emigration rate of younger individuals (25-29 years of age) as a proxy, since young workers are the most qualified demographic. As is apparent from the Figure 4, on the left, countries with higher unemployment of tertiary graduates also tend to have higher emigration rates for younger cohorts.

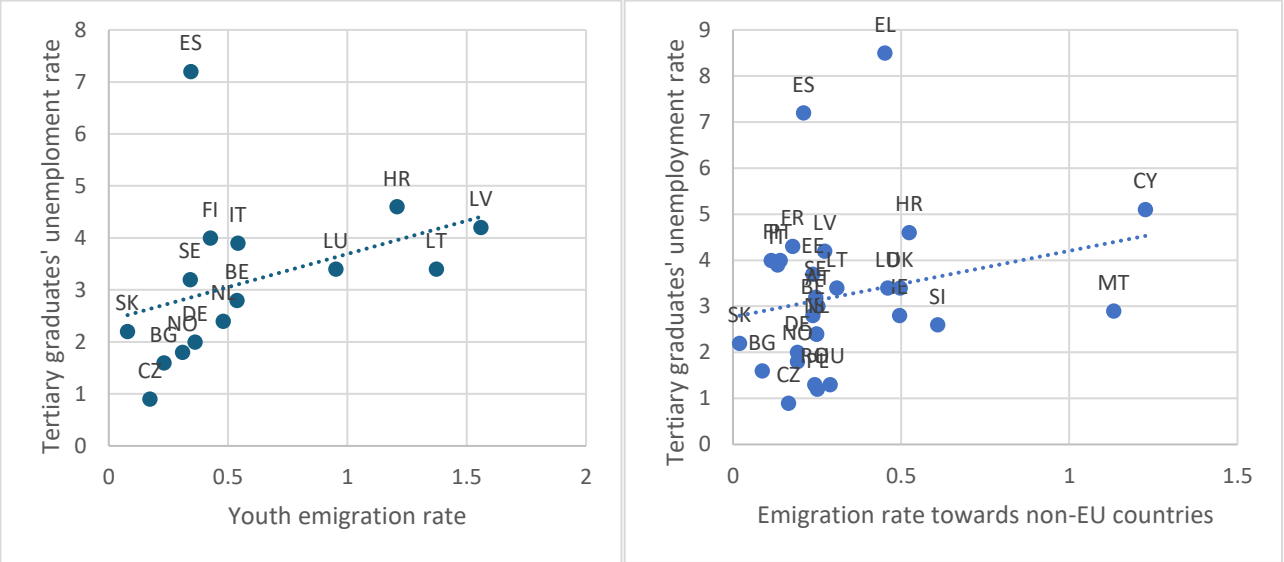

Figure 4: Relationship between the unemployment rate of tertiary graduates and the total emigration rate of young people in the age group 25-29 (on the left) and the emigration rate towards non-EU countries of all age groups (on the right), in the year 2022. Source: author's calculations based on Eurostat data.

As the free movement of workers is an EU value within the single market, the Figure on the left might not be as worrying as long as migration occurs within the EU, from one member State to another.

Unfortunately, very few countries report emigration to non-EU countries by age group, so to check whether there are significant correlations between unemployment and emigration outside the Union, Figure 4 on the right plots the emigration rate of all age groups to non-EU countries, suggesting a positive correlation between skilled unemployment and emigration outside the EU.

This suggests once again that efforts to broadly raise skills must be accompanied by careful consideration of how to turn them into viable jobs, since the lack of a fertile workplace for those skills might lead not only to higher frictional unemployment, but also to higher likelihood of more skilled workers emigrating elsewhere.

Furthermore, more qualified jobs must reflect the value of the acquired skills through quality contracts and adequate wages – as brain drain is worsened by lower compensation and more precarious contracts, which often characterize countries with fewer opportunities and higher unemployment.

It is true for the entire Union from a single-market perspective, but it is also worth realizing that the single market is far from being the reality when it comes to education and training policies. As long as skills provision is a national competence and is financed through national budgets, even emigration to another EU Member State – although not an economic problem from a single-market approach – can be a political issue.

The risks of skills-enhancing contracts

As a tangential concern, which deserves its own separate analysis but is worth mentioning here, especially in relation to the emigration of young workers, policymakers should pay particular attention to the quality of hybrid work-learning instruments.

In many EU countries, dual labor contracts such as internships, apprenticeships and sometimes civil service positions are designed to enhance skills while simultaneously providing a work experience, especially for young adults.

However, concerns have emerged regarding the quality of these contracts, as some may serve as avenues for underpaid and low-quality employment under the guise of training.

Internships, intended to provide practical experience, have been scrutinized for exploitative practices. Apprenticeships, which are often heavily incentivized, risk compressing workers' wages if not implemented appropriately.

Some countries, the regulation of internships and/or apprenticeships varies by region (e.g. in Italy and Germany), leading to inconsistencies in quality and remuneration. This fragmentation can result in

contracts that do not meet standardized training or compensation criteria, thereby compromising the quality of the work experience.

The EU has acknowledged these issues and undertaken efforts to improve the quality of such training-based contracts.

For instance, in March 2024, the European Commission proposed measures to enhance working conditions for trainees, aiming to ensure that traineeships offer valuable learning experiences accessible to all socioeconomic backgrounds.

Additionally, the European Parliament has advocated for fair remuneration for trainees and apprentices, condemning unpaid internships as exploitative and calling for a common legal framework to prevent such practices.

Implementing such frameworks can help balance the dual objectives of skill development and protection against labor exploitation, but more legislative protections should be instated.

At the same time, if such a heightened effort is to be placed on the provision of new and updated skills throughout the career of workers, appropriate forms of training for all workers – not only young ones – must be adequately protected by labor law to ensure that these learning opportunities do not come at the expense of job quality, employment stability or workers' financial security.

Conclusion: So, where do we go from here?

Once again, the goal of this analysis is all but to diminish the importance of skills, or to advocate for a reduction in skill enhancing programs. The Union of Skills has great potential to help workers be as qualified as possible, and as a result better equipped, to face the transitions – green and digital – that will shape the labor market.

However, while investment on training and education is necessary, it is not sufficient.

The aim of this brief is to advocate for a more comprehensive discourse on skills, to make sure that they are never treated as a residual or standalone solution. As a rule of thumb, any policy that focuses on skills should be paired with concrete actions on the demand side to ensure that those skills do not go to waste.

What kind of concrete actions should be implemented is not the scope of this policy brief, and it merits much more detailed and multifaceted analysis. There isn't one single solution for any kind of policy. However, some suggestions can be advanced.

First and foremost, much more detailed information is needed to have a precise idea of the phenomena at play. Already in previous sections, I have mentioned the lack of available data for a more precise measurement of overqualification and related phenomena.

Ideally, skills-enhancing programs should track workers for some time after their conclusion, checking if workers change jobs, move up within firm, and/or gain productivity. Or if these skills were provided to young or unemployed individuals – i.e. out of the workforce – whether and when an entry into the labor market follows the conclusion of the program.

Microdata should also include demographic variables to identify any specific subpopulations – by gender, age, citizenship, level of educational attainment – most impacted and most excluded by each program. At the same time, information on emigration by skill level could be provided by Eurostat, or further analysis using the Labor Force Survey should be performed.

Importantly, data should be comparable across countries. The EU's work on microcredentials is a good step in this direction, but a lot depends on the countries' willingness to truly participate in such an EU-wide mechanism for mutual recognition of qualifications.

In many instances, portability of certifications is limited even across regions of the same country: in Italy, for example, skills' certification is a constitutional competence of Regions, and despite a 2013 law mandating mutual recognition of certifications, guidelines on how to do so were issued only in 2021 (Decreto Ministeriale 5 gennaio 2021) and in some cases have not yet been fully implemented by all Regions.

Effective improvements in data availability can be combined with work on the demand side of skills through institutional dialogue with the social partners. Making sure that employers' organizations are actively involved in the development of policies, of skills programs and of data collection can lead to best practices of skills intelligence, which would allow the most effective skills policies to be implemented and reduce mismatches.

If the demand side of the labor market can be effectively involved in this dialogue, they can not only inform public policies, but also be an active actor already in skill development. From more effective academic orientation, to the activation of apprenticeships for school-to-work transitions, to on-the-job training and company-specific academies: firms and employers must become an active asset in the development of adequate skills.

A separate, more in-depth report of Member Countries' best practices for involving employers in the provision of skills would be a helpful avenue of exploration, as it would ground such research in real-world examples and provide a solid starting point for concrete proposals of country-level policies.

As jobs become more complex, firms cannot reasonably expect educational systems to provide workers with the exact skills that match the specificity of the tasks needed. It will be up to the policymakers to design flexible enough tools and up to the employers to use them proactively and appropriately to shape the workforce they require.

Finally, skills policies should also strategically linked to industrial policy. Adequate competences are one of the main tools that the EU can count on to face the digital and green transitions. For this reason, effective skills provision programs should be linked to specific industrial programs.

From this perspective skills are one of the ways in which, in such an uncertain global scenario, the EU can come out on top if it is able to leverage its democratic and inclusive values to attract (and retain) a qualified workforce, able to produce technological and productive innovations that will shape the future economy. In such a sense, skills can even be conceived as a strategic geopolitical tool.

But like any precious tool, skills provision must be carefully and appropriately utilized, to make sure that it remains sharp and effective, that it does not lead to a botched last-resort fix, and that it is used in conjunction with adequate and complementary tools to maximize the quality of the resulting job.

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