



CEDEFOP

Towards organisations as learning workplaces

Moving beyond certified, institutionalised
continuing vocational education and training

POLICY BRIEF



POLICY BACKGROUND

In this section

Europe's skills revolution progresses through adult learning, with CVET, upskilling, and reskilling at the forefront

Workplace and virtual environments are fundamentally transforming the CVET landscape, raising new and complex policy challenges

Despite their proven impact on skills development, policies have yet to unlock the full potential of workplaces in shaping the skills landscape



Europe's skills revolution progresses through adult learning, with CVET, upskilling, and reskilling at the forefront

Several recent EU policy documents have stressed the need for a significant shift in approach and increased investment in skills to effectively tackle the long-term trend of low productivity growth that hinders the EU's economic performance.

The recent 2024 [Letta report on the single market](#) and the [Draghi report on European competitiveness](#) put labour shortages and skills gaps in the spotlight. The latter report in particular calls for a profound overhaul of Europe's approach to skills, and a significant rethinking of the design and implementation of skills policies. 'Without ambitious yet pragmatic skills policies, the EU will not be able to achieve the objectives ... in an effective and equitable way' ([Draghi, 2024, p.257](#)).

The backdrop of a new European skills policy is the looming labour and skills shortages, which are predicted to become more acute due to several factors: the shrinking active labour population, rapid technological advancements and the need for the EU to stay ahead of the curve and achieve radical innovation, geopolitical risks and the need to increase security and reduce dependencies, and the imperative of reigniting sustainable growth. The 2023 European Year of Skills has sparked greater awareness and unanimous consensus that

Europe's sustainable competitiveness, strategic autonomy and social equity hinge on people with a solid and ever relevant skill base in tune with the fast-evolving needs of the economy. The [Commission's action plan on skills and labour shortages](#) advocated for immediate measures pertaining to skills policies, working conditions, intra-EU mobility and talent attraction from outside the EU. These policy priorities are reflected in the 2024 mandate of the new Executive Vice-President-designate for People, Skills and Preparedness, who emphasises the importance of skills, education and training for the future of the EU.

Adult learning, including in and through the workplace, is reaffirmed to be a cornerstone in the renewed approach to skills.

Adult learning had already been at the core of two principles of the [European Pillar of Social Rights](#) (EPSR): the right to quality and inclusive education, training and lifelong learning (principle 1) and the importance of active support to employment and adults' right to training (principle 2). These principles have been operationalised through the [2020 European Skills Agenda](#), creating an integrated approach where adult learning is both a social right (EPSR) and an operational priority (Skills Agenda).

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While the framework addresses adult learning through various terms – ‘adult learning / education’, ‘upskilling and reskilling’, ‘continuing education and training’, ‘life-long learning’ – they all connect to EPSR’s broader social rights approach and the concept of adult learning.

The [2020 EU Recommendation on vocational education and training \(VET\)](#) and the [Osnabrück Declaration](#), aligned with the broader skills agenda, establish VET as a cornerstone for post-pandemic recovery and the twin green and digital transitions. While VET has traditionally served a dual purpose – providing initial qualifications for youth and supporting lifelong learning for adults – the importance of VET in developing the workforce’s skills base has reached new heights in response to current skills gaps and labour shortages. The growing focus on CVET, along with pathways for upskilling and reskilling, has made skills development in adulthood a critical element, not only for addressing workforce skill development needs but also for driving economic transformation.

However, adult learning participation remains insufficient. This limitation, combined with declining educational system performance, low labour mobility and suboptimal working conditions (including restricted access to training, limited career development opportunities, poor work–life balance and inadequate management practices), have become a primary driver of skills shortages. The urgency of addressing labour and skill shortages underscores the need to overhaul the entire approach to skills development in adulthood and address it systematically to cater for the upskilling and reskilling needs of the entire labour force.

Workplace and virtual environments are fundamentally transforming the CVET landscape, raising new and complex policy challenges

Traditionally, skills development in adulthood was synonymous with CVET in its institutionalised form. This system operated predominantly through accredited providers offering professional programmes, both formal and non-formal, with a clear distinction from initial VET (IVET). The landscape was characterised by dedicated providers offering certified, quality-assured training specifically designed for adults. However, three transformative factors are reshaping this institutional-based provision. Demographic shifts, particularly decreasing IVET cohorts, have forced a rethinking of traditional boundaries. Labour market dynamics, marked by vast and accelerated changes, have created an unprecedented need for the workforce population to keep pace with the labour market changes, to upskill and re-skill. Simultaneously, technological advancement has enabled the rise of digital learning platforms, fundamentally altering delivery methods and learning contexts and sources.

These changes are catalysing significant structural transformations in the landscape of skills development for adults. IVET providers have expanded into institutional CVET (Cedefop, 2023), while online and hybrid learning models for adults have proliferated. Provider–employer partnerships have strengthened and workplaces are emerging as lifelong learning

spaces. The role of employers has evolved significantly and is predicted to further expand. Beyond their traditional function as providers of workplace learning in formal programmes such as apprenticeships, they have become key stakeholders in shaping the provision of institutional CVET. More importantly, to be competitive and drive innovation, workplaces will increasingly serve as lifelong learning spaces, expanding beyond traditional institutional CVET.

Simultaneously, and perhaps most significantly, the rise of digital learning environments, particularly generative artificial intelligence (AI) and social media platforms, has created new contexts for self-regulated training. Adults increasingly engage in digital learning environments at their own pace and on their own time to update, upgrade and consolidate their skills, as these environments are becoming more accessible, more diverse and more agile to meet adults' diverse skills-development needs.

In addition to learning acquired through traditional institutional CVET, learning in and through the workplace has become increasingly necessary for business competitiveness and innovation capacity, while self-regulated learning has gained prominence. Because of this complex interplay of factors, three interconnected learning contexts emerge: institutional, workplace and digital environments (Table 1).

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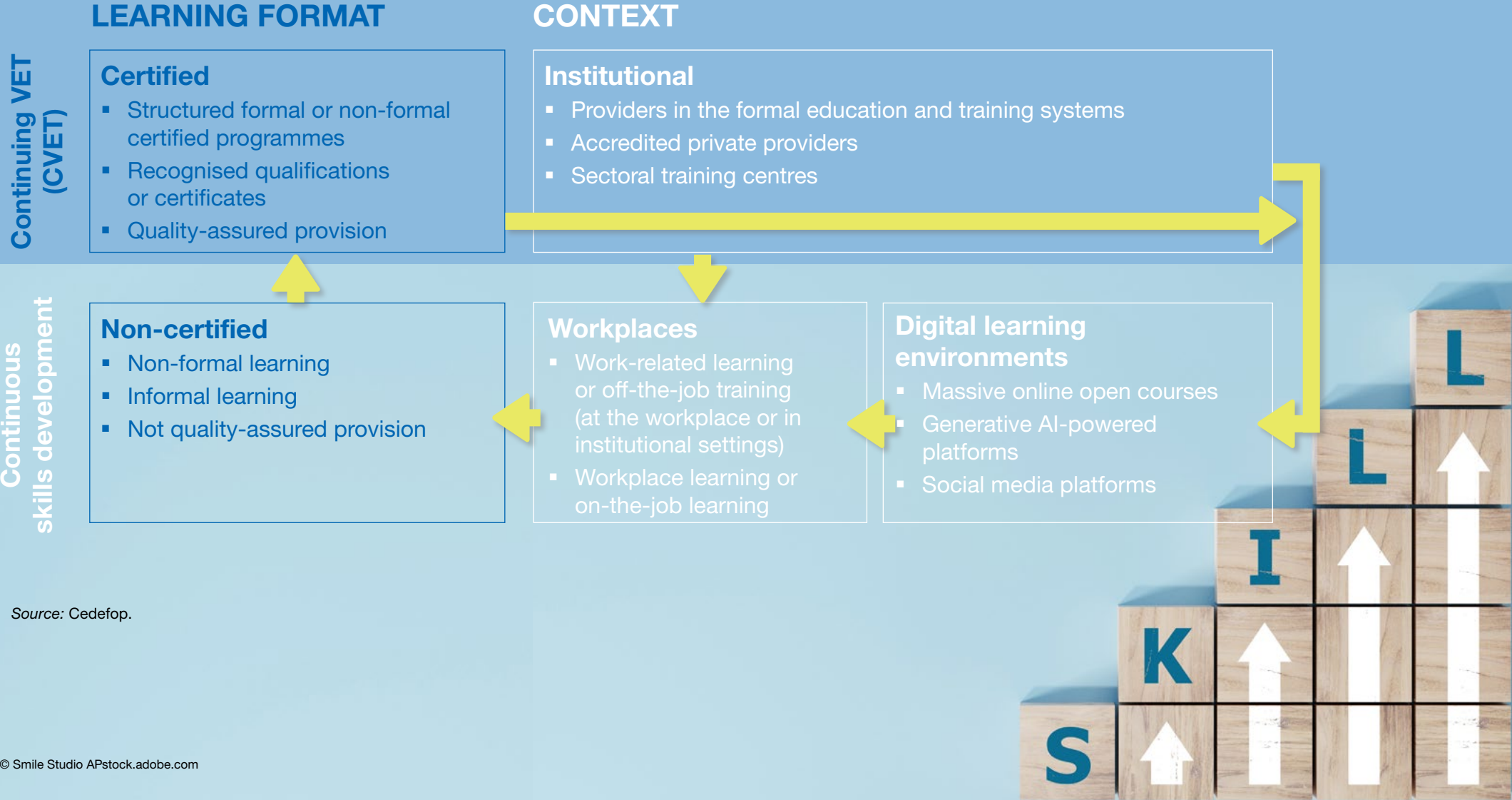


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Table 1. Emerging landscape of skills development for adults



Source: Cedefop.

Table 1 contrasts two main approaches of the learning format. First, institutional CVET represents the formalised end of the spectrum of skills development for adults, characterised by structured programmes and standardised training solutions, either formal or non-formal, that lead to recognised qualifications or certificates. A key distinguishing feature is its quality-assured provision, rooted in institutional frameworks and formal recognition systems. Second, the ‘continuous’ dimension encompasses non-formal, non-certified learning activities and informal learning experiences and represents a more fluid approach to learning. Notably, it operates outside traditional quality assurance frameworks, allowing for greater flexibility but raising questions about recognition and validation.

The ‘contexts’ dimension reveals three distinct but interconnected learning environments. The institutional context remains the traditional domain of CVET, operat-

ing through formal education and training providers, accredited private institutions and sectoral training centres. This represents the established infrastructure of CVET. The workplace context introduces a dual approach to adults’ skills development, namely on-the-job learning and work-related or off-the-job training. The latter may occur at the workplace or in institutional settings and encompasses company-specific development pathways that respond to unique business challenges and innovation needs.

This distinction acknowledges the different dynamics of structured training versus experiential learning in work contexts, with the workplace context becoming increasingly relevant in dynamic labour markets marked by rapid changes and a focus on innovation. Finally, digital learning environments represent an emerging and transformative context, encompassing massive open online courses, generative AI-powered platforms and social media platforms. This dimension reflects how technology is creating new opportunities for self-directed and informal learning.

This evolution marks a fundamental shift in skills development for adults, transitioning from a predominantly institution-based system to a complex, multi-dimensional reality. In this new landscape, skills development for adults transcends traditional boundaries, occurring across multiple contexts with varying degrees of formality. The key policy challenge lies in supporting and effectively integrating these emerging workplace and digital learning contexts into traditional certified provision, while maintaining quality and the recognition of learning outcomes. This requires developing frameworks that can bridge formal, non-formal and informal learning pathways while supporting the systematic development of skills development in workplace and digital contexts.





Box 1. Cedefop's strategic initiative to support a systematic and integrated approach to skills development within a 15-20-year time frame

In 2021, Cedefop (the European Centre for the Development of Vocational Training) launched a strategic initiative to develop a vision for a systematic and integrated approach to skills development, with particular focus on workplaces, within a 15-20-year time frame. Such a system would integrate institutional CVET with continuous skills development in workplaces and digital environments. Phase one of this initiative (2021-23) consisted of a foundation and explorative study on 'Promoting lifelong learning of adults through CVET systems and upskilling pathways', which researched:

- emerging trends in and of relevance to adults' skills development in all its formats and contexts, whether institutional, workplace or digital;
- national and sectoral approaches to support skills development outside of the institutional CVET in three countries, with a particular focus on workplaces;
- scenario sketches for a systematic approach to skills development, with a particular focus on workplaces, within a 15-20-year time frame.

The foundation study applied exploratory and normative foresight methods using a mix of extensive desk research, expert interviews, targeted case studies and expert webinars.

Phase two of the strategic initiative (2024-25) consists of a strategic foresight exercise. Building on the foundation study, Cedefop extended its foresight exercise to:

- develop a comprehensive vision for a systematic and integrated approach to skills development, with a particular focus on workplaces, over the next 15-20 years;
- map alternative scenarios and action trajectories;
- identify implementation pathways.

Despite their proven impact on skills development, policies have yet to unlock the full potential of workplaces in shaping the skills landscape

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Workplaces are pivotal for skills development in the European Union, with over 75% of the working-age population (20-64) **actively employed**. Employers are uniquely positioned to shape workforce capabilities through three key channels: supporting participation in institutional CVET, providing work-related or off-the-job training and fostering on-the-job skill development through strategic job design and employee empowerment. However, current policies have yet to fully capitalise on the potential of workplaces as learning environments, leading to a significant gap between opportunity and reality.

Evidence points to a systematic underinvestment in adult workers' participation in learning activities. In 2020, only 42.4% of employees took part in employer-sponsored training, with total training investments comprising just 0.7% of labour costs (Cedefop calculations based on Eurostat data, continuing vocational training survey). This issue is particularly acute in small and medium-sized enterprises (SMEs), where employee participation in training fell to 27.5% in the same year.

The 2019 Cedefop–Eurofound European Company Survey highlights the complex and uneven landscape of training provision across organisations of different sizes. While 45% of establishments

provided training to a moderate proportion of their workforce (20%-79% of employees), a significant number landed at either extreme. About one third offered training to less than 20% of employees, while roughly one fifth achieved comprehensive coverage of 80% or more. Interestingly, small establishments displayed both the highest likelihood of minimal training provision and the highest probability of comprehensive coverage, indicating that organisational size alone does not dictate training approaches. Other factors, such as leadership priorities and industry-specific demands, play crucial roles in shaping training decisions (Cedefop & Eurofound, 2020).

Beyond training provision, the challenges extend to on-the-job learning, skills utilisation, and the broader organisational context such as practices, culture, norms and physical environment. The 2019 Cedefop–Eurofound survey shows that only 52% of EU establishments provided on-the-job training or workplace instruction by experienced colleagues to a significant proportion of employees (20%-79%) in the preceding year. Additionally, the 2021 Cedefop European skills and jobs survey revealed that fewer than half (45%) of EU+ adult workers could fully utilise their knowledge and



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skills in their main job ([Cedefop, 2022](#)). This misalignment underscores a critical issue: even when organisations invest in training, many fail to create environments that effectively leverage these enhanced capabilities. The result is a loss of investment, as training fails to translate into competitive advantages or improved organisational performance. Research consistently emphasises the importance of effective job design and supportive environments that empower employees to grow and apply their skills through their work in bridging this gap. Particularly through ‘active’ jobs combining high demands with high autonomy, organisations have demonstrated the potential for effective workplace learning ([Cedefop & Eurofound, 2023](#)).

Addressing low employer investment in off-the-job training and the sub-optimal supply of training opportunities may prove inefficient without enabling organisations to effectively utilise and develop skills on the job through an empowering job design and a supportive organisational context, but there are still challenges to overcome. Many organisations receive limited returns on training investments, struggle with intense short-term pressures and fear losing employees to competitors after investing in their development. Furthermore, insufficient managerial capacity to implement systematic learning strategies and foster employee empowerment, alongside uncertainty about future skill requirements, presents significant barriers. Effective policies must address these barriers while considering the diverse needs driven by sectoral differences, geographical locations and organisational size. By doing so, they can foster impactful, inclusive workforce development, helping to overcome skill gaps and shortages that threaten competitiveness, innovation and social inclusion.



EVIDENCE

In this section

Cedefop examined sector-based approaches to inspire future systematic continuous skills development in workplace contexts

When anchored in industry and social partnerships, the sector skills development approaches are more comprehensive, while the public institution-led approach maintains a narrower focus on specific targets

Approaches to skills development diverge across sectors, with the technology sector adopting a transformative vision, while the construction sector remains rooted in a more traditional model

Sectoral approaches to skills development maintain strong institutional connections while adapting to new needs

Evidence-based planning, regular updates and a strong focus on anticipating future skill needs are at the core of these approaches

From institutional control to flexible coordination: diverse governance and funding models reflect different paths to sector-based skills development

SMEs require specific support mechanisms for workforce skills development, given their distinct challenges and limited resources



Cedefop examined sector-based approaches to inspire future systematic continuous skills development in workplace contexts

This policy brief synthesises evidence from phase one of Cedefop's strategic initiative to develop a vision for a systematic and integrated approach to skills development, with a particular focus on workplace skills development, within a 15-20-year time frame (Box 1). It builds on the sectoral approaches to support workplaces consolidate their workforce skills base in three countries (Box 2). It highlights current practices and provides key lessons to inform future policies aimed at unlocking the potential of workplaces in workforce skills development in a systematic and integrated way.

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Box 2. Examined sectoral skills development approaches

Within the framework of its foundation and explorative study on ‘Promoting lifelong learning of adults through CVET systems and upskilling pathways’ (2021-23), Cedefop collected evidence ⁽¹⁾ on three sectoral approaches addressing the current and future skill needs and labour shortages in the respective sectors.

FINLAND

Technology Industries Strategy 2021-30, Finland operates as an employer association-driven initiative spanning the decade from 2021 to 2030 and updated regularly. This strategy was developed by [Technology Industries of Finland \(TIF\)](#) ⁽²⁾ and provides a long-term vision that extends beyond institutional training and a broad strategic framework to guide decisions on meeting current and future expertise needs in technology companies. The strategy emerged from a recognition that without such a strategic framework, the sector would lack direction and risk inefficient resource allocation.

SPAIN

Construction Labour Foundation 2016-20 Strategic Plan, Spain was developed by a bipartite labour market organisation, the [Construction Labour Foundation \(FLC\)](#), and serves as a framework to support enhanced training for both employers and employees in Spain’s construc-

tion sector. FLC represents a permanent bipartite institutional structure established through the 1992 Collective Agreement of the Spanish construction sector ⁽³⁾.

IRELAND

Green skills Approach for Construction, Ireland is a network of aligned public initiatives and policies working toward common green skills objectives in construction. It emerged as a response to the 2019 Climate Action Plan and 2040 Project Ireland and was developed through the [Expert Group for Future Skills Needs \(EG-FSN\)](#) ⁽⁴⁾ via two significant reports: [Building Future Skills](#) (2020) and [Skills for Zero Carbon](#) (2021). This strategic initiative addresses both the construction sector’s recovery needs and the environmental transition requirements, recognising the sector’s significance in national employment.

Data collection and analysis of the three strategies investigated, inter alia:

- policy integration (i.e. with broader policy objectives);
- institutional integration (i.e. relation with the formal education and training system);
- governance and funding.

⁽¹⁾ Desk research, interviews and a web survey were carried out between May and November 2022.

⁽²⁾ TIF is a business and labour market lobbying organisation that promotes the competitiveness and business conditions of Finland’s most crucial export industry.

⁽³⁾ The FLC delivers non-formal certified training, non-formal training programmes that respond directly to company needs, and private commercial training. It also provides formal vocational training as part of the Spanish education system, though this represents a smaller portion of its offerings.

⁽⁴⁾ A multi-departmental non-executive agency tasked with analysing labour market needs and strategising to fill these needs.

When anchored in industry and social partnerships, the sector skills development approaches

are more comprehensive, while the public institution-led approach maintains a narrower focus on specific targets

All the cases analysed provide examples of systematic approaches to address skills gaps and labour shortages at the sector level, but their scope and integration with the economic and policy EU and national agenda goals and priorities depend on their institutional anchorage. The Finnish and Spanish examples, rooted in industry and social partnership respectively, are more comprehensive, while Ireland's public institution-led approach maintains a narrower focus on specific environmental and regulatory targets.

INDUSTRY-LED VISION

Finland's strategy, anchored in a business organisation (TIF), takes the broadest view. Rather than treating environmental and digital transitions as isolated challenges, it integrates them into a comprehensive vision of sector competitiveness and innovation. This industry-led approach naturally gravitates toward linking skills development with broader economic goals – from international competitiveness to technological leadership. Sustainability and digitalisation are woven into this broader tapestry of industrial transformation, rather than standing alone as separate objectives.

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SOCIAL PARTNERSHIP APPROACH

Spain's FLC, with its unique bipartite structure, demonstrates how equal representation of employer and worker interests creates a different strategic scope. The FLC's approach balances economic competitiveness with worker development, viewing skills through the lens of both the employer and the employee. This institutional foundation leads to a comprehensive sector-wide strategy that integrates various forms of training while maintaining strong connections to both business needs and worker interests. The strategy's scope reflects this dual perspective, addressing sustainability and innovation within a framework that equally values economic and social outcomes.

POLICY-DRIVEN FRAMEWORK

The Irish example presents a more focused approach that is anchored in public institutions and driven by specific environmental targets. Unlike the broader sector-wide transformations envisioned by the Finnish and Spanish cases, the Irish initiative concentrates primarily on meeting specific climate action goals. This narrower scope, while potentially more focused and measurable, results in less integration with broader sector development needs. The strategy's public institution foundation leads to a more targeted, policy-specific approach to skills development in the sector, primarily aligned with environmental objectives rather than comprehensive sector transformation.

Approaches to skills development diverge across sectors, with the technology sector adopting a transformative vision, while the construction sector remains rooted in a more traditional model

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Reflecting the institutional anchorage, as well as sector characteristics, the approaches also showcase fundamental differences in how they conceptualise the relationship between learning and work. The Finnish example represents a more transformative vision, while the Spanish and Irish ones, though well developed, maintain a more traditional separation between learning and working. This traditional model, while having clear strengths in terms of quality control and standardisation, represents a specific view of how skills development occurs – one that sees learning as primarily happening outside the workplace through structured interventions. The Spanish and Irish approaches represent a well-established model of skills development that views training as a structured intervention separate from daily work processes. This model is built on the premise that skills are best developed through formal, organised learning experiences that can then be applied in the workplace. The FLC model treats skills development as a formal educational process, where workers step out of their work environment to learn in purpose-built facilities. While highly effective in ensuring consistent quality and standards, it maintains a clear boundary between the learning space and the workplace. Ireland's approach to green

skills in construction offers a more flexible but still traditional interpretation: 'The NZEB courses have become available for different roles and industries and so are well tailored to a range of pathways. The placement of the six NZEB Centres of Excellence means the entire state is covered' (interview). While incorporating modern delivery methods like online learning, the Irish approach maintains the fundamental premise that training is a discrete activity separate from regular work. Both the Spanish and Irish approaches demonstrate how this traditional model can be effectively implemented:

- Spain: through comprehensive infrastructure and standardised delivery;
- Ireland: through specialised centres and flexible delivery methods.

Yet both maintain the fundamental premise that skills development is primarily achieved through structured training interventions and the guarantee of quality, largely overlooking the potential of learning in and through the workplace, which complements – rather than replaces – structured, quality-assured training. Their approach aligns more closely with traditional institution-led CVET and the formalised end of the spectrum. Institutionally, they are embedded within the architecture of the CVET



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system, supported by a dedicated network of providers fully integrated into the institutional landscape. For example, the sectoral training centres of FLC offer certified non-formal training alongside formal apprenticeship programmes, while training in the construction sector under the Irish initiatives is delivered by accredited training providers.

The Finnish strategy proposes a new philosophy in skills development, positioning the workplace itself as the primary site of learning and seeing companies as learning environments rather than just for training consumers.

The Finnish strategy marks a significant departure from traditional institution-provided CVET. While it recognises the importance of formal, institutionalised and certified training, it places greater emphasis on the workplace as the central site for learning and innovation. Although the system of institutional training and its providers remains external to the strategy's core framework, it plays a crucial role in supporting its implementation. At the heart of this strategy are workplaces, which serve as the primary drivers of skills development and innovation. This approach:

- positions learning as inherently embedded in work processes;
- views skill development as continuous rather than episodic;
- recognises tacit knowledge development as crucial;
- integrates learning with actual innovation processes;
- sees companies as learning environments rather than just training consumers.

What makes this approach particularly distinctive is its recognition that many critical competencies cannot be developed through traditional training alone. As

noted in an interview, 'The strategy explicitly acknowledges that, due to the rapid pace of innovation in the technology sector, new skills often cannot be acquired through formal / certified education and training, or even through tailored learning provision. Instead, innovation and learning are seen as inseparable processes, built on workplace learning, the transformation of tacit knowledge into explicit understanding and the sharing of ideas and experiences through networks.' Educational institutions and private training providers, for various reasons – including the constantly evolving skill needs of the sector – may struggle to keep up with the pace of change. Educational institutions may lack the agility to quickly address the technology sector's dynamic needs and often do not possess the most up-to-date expertise required for cutting-edge innovation.

This workplace-centred approach manifests through multiple interconnected mechanisms. Learning occurs by solving real business problems, engagement with innovation projects and integration with research and development activities. Knowledge development is further enhanced through network-based learning, where companies share expertise through supply chains and industry clusters. This networked approach is particularly valuable for smaller companies, which can benefit from the expertise of larger organisations through collaborative learning relationships.

The strategy's effectiveness is built on recognising that skill needs vary significantly between companies and often emerge from specific local contexts. Rather than pursuing just standardised training solutions, the approach emphasises company-specific development pathways that respond to unique business challenges and innovation needs. As noted by an interviewee, 'Quite often there is a more locally based learning need



that is met through a learning offer or solution provided locally.’ This highly contextualised approach ensures that learning is directly relevant to business needs.

Crucially, this approach requires a supportive organisational culture. TIF emphasises that the sector’s innovative nature demands both learning-to-learn capabilities among employees and a new working culture in technology companies that actively supports learning and skills development. This cultural dimension is seen as essential for enabling the kind of continuous, innovation-driven learning that characterises the strategy.

What particularly distinguishes this approach from more traditional models is its recognition that, in many cases, ‘the expertise needed for innovations does not yet exist in formal educational settings – it must first be created through workplace learning and innovation processes’ (interview). This understanding fundamentally shifts the focus from knowledge transfer to knowledge creation, positioning companies as not just sites of learning but as generators of new competencies.

This workplace-centred approach presents both opportunities and challenges. While it enables highly relevant skill development tightly coupled to business needs and innovation processes, it also requires significant organisational capability and commitment. Companies must develop strong learning cultures, systematic approaches to capturing and sharing knowledge, and effective mechanisms, including management practices, for supporting both individual and organisational learning. Despite these challenges, the approach offers a powerful model for skills development in sectors characterised by rapid technological change and continuous innovation.

Sectoral approaches to skills development maintain strong institutional connections while adapting to new needs



The Finnish strategy represents a distinct approach to skills development, one that positions itself outside of the institutional education and training system. Unlike the other two examples, which blend into the institutional landscape of the education and training system, the Finnish strategy focuses on fostering connections beyond the system's boundaries and highlighting interdependencies between the private and public sectors. This strategy identifies two critical elements for addressing skills shortages in the sector. First, the formal education system must cultivate STEM competencies across all educational levels, beginning with early education. Second, for working adults, success hinges on an extensive network of public providers and support services at the national, regional, and local levels. These services – such as career guidance, skills identification and validation mechanisms – are pivotal for workforce development. However, they are rarely offered by sector actors themselves, with smaller companies in particular lacking a human resources department to provide such support.

TIF advances this strategic vision through advocacy with education and employment authorities and by fostering partnerships between businesses and education providers at the regional and local levels.

This two-pronged approach ensures proactive industry engagement in both policy development and implementation.

In contrast, Spain's FLC plays strategic roles within the system of education and training, serving as an institutional bridge between public educational and employment bodies and the private sector. Its strategic role within the National Reference Centre for Building and Civil Engineering facilitates innovation transfer between public vocational education and industry. FLC is also collaborating with the Spanish government to harmonise the vocational training diplomas issued by the Ministry of Education with the certificates of professionalism provided by the Ministry of Employment. This effort goes beyond alignment, striving to create a flexible qualification system that meets the needs of both learners and industry.

Operationally, FLC delivers formal vocational training through its network of centres, functioning as an integral component of the Spanish education system. This dual role – serving as both a policy shaper and practical implementer – positions FLC as a transformative force in Spain's construction sector training landscape. Its ability to work simultaneously at the policy and practical levels drives

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systemic improvements while addressing immediate industry needs.

Meanwhile, the Irish example exemplifies a sophisticated, top-down approach to integrating workforce skills development into the institutional education and training system. This strategy embeds upskilling and reskilling within a broader ecosystem that includes apprenticeships, graduate conversion courses and higher education programmes. It balances immediate sector needs with long-term workforce development by integrating green skills across all training types and ensuring alignment across professional groups and qualification levels.

Traditional apprenticeships remain a cornerstone for core craft skills, but they are complemented by shorter courses designed to address urgent challenges, such as retrofitting targets. This pragmatic blend allows the Irish system to respond swiftly to sectoral demands while ensuring a coherent and sustainable skills development ecosystem that serves both current and future needs.

Evidence-based planning, regular updates and a strong focus on anticipating future skill needs are at the core of these approaches



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The Finnish technology industries' strategy represents a leading approach to evidence-based planning, using AI and big data for competence forecasting. With 2-3-year revision cycles, and lasting until 2030, the strategy balances flexibility with long-term direction. By integrating diverse data sources – historical statistics, future forecasts and academic research – it adapts to rapidly evolving technological needs. Labour market intelligence and AI-driven competence data inform goal setting and priorities, drawing on sources like [Statistics Finland](#) and the [Research Institute of the Finnish Economy \(ETLA\)](#), an independent, private, non-profit economic research institute that provides in-depth analysis of economic trends. This ensures the strategy is responsive to sectoral, regional and local needs, with particular focus on engaging microcompanies and small companies in workforce skills development.

Spain's FLC takes a more institutionally grounded approach through its Construction Industry Observatory and a network of 54 training centres across the country. This network enables close engagement with regional realities. The FLC is developing an innovative system using big data to anticipate future market needs – analysing trends like material purchases and public tenders to predict job growth

and training needs. This data-driven approach informs the design of future training offerings. Operating on 5-year strategic cycles with strong regional input, the FLC's strategy benefits from continuous review and robust quality management.

Ireland's initiative differs by focusing on climate action targets within an 8-year time frame. While research from the EGFSN and departmental modelling inform its strategy, coordination across multiple bodies creates complexity. The approach, supported by rigorous research and foresight studies, aims to meet green political objectives by addressing skills gaps, particularly in retrofitting. [AECOM](#), a global engineering and infrastructure consultancy firm, worked alongside SOLAS to develop a data-driven model to quantify the workforce needed and identify skill gaps. AECOM's expertise in infrastructure and workforce planning was critical in analysing current and future skills needs in the green energy sector. The model also accounts for attrition rates and competing variables, like career shifts within the sector. Although the green skills initiative in the construction sector offers a broad overview, ongoing research is needed to refine training needs and gaps, with SOLAS continuing to update data and models to keep pace with emerging trends.



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From institutional control to flexible coordination: diverse governance and funding models reflect different paths to sector-based skills development

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The Finnish approach operates without a dedicated governance structure or dedicated funding source. At its core, TIF, representing 1 800 member businesses, serves as the leading strategic body. However, its leadership is exercised through orchestration rather than direction, creating an environment where company autonomy and collective action can effectively combine.

The strategy's implementation unfolds across three interconnected levels, each playing a distinct yet complementary role.

- At the company level, businesses maintain both financial responsibility and decision-making autonomy for their skills development, allowing them to align training initiatives with their specific competitive situations and client needs.
- The collective level provides the essential framework through agreements between employers and unions, with TIF negotiating national collective agreements in close cooperation with Technology Industries of Finland. These agreements establish fundamental rights and obligations regarding training and development, ensuring high standards while preserving implementation flexibility.

- At the network level, companies engage in regional and local network-based cooperation with education and training institutions. They also create platforms for resource and expertise sharing, making advanced capabilities accessible across the sector ⁽⁵⁾. Despite the technology industry's desire for cross-regional cooperation, rigid regional policies can limit collaboration between companies in different administrative regions, create inefficiencies in resource allocation, reduce opportunities for knowledge sharing and constrain the development of wider industry networks.

This multi-level framework is supported by existing industry representation structures, which help businesses navigate and access various opportunities. The funding approach mirrors this flexible structure, drawing on multiple complementary sources rather than relying on a single dedicated stream. Companies can tap into and access a strategic mix of EU, national and regional funding options. Furthermore, companies and their staff benefit from a diverse learning ecosystem, accessing training through public education and training providers (primarily

⁽⁵⁾ Examples of such platforms are the former [Finnish Advanced Manufacturing Network \(FAMN\)](#), which evolved into [MAKE](#).



...at its core, **TIF**, representing 1 800 member businesses, **serves as the leading strategic body...**



...this **multi-level framework** is supported by existing industry representation structures, which **help businesses navigate and access various opportunities...**



...companies and their staff **benefit from a diverse learning ecosystem**, accessing **training** through public education and training providers...



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VET and higher education institutions), while retaining the option to purchase tailor-made training from private providers when needed.

This integrated approach creates a dynamic system whose effectiveness depends on three critical factors: companies' awareness and engagement with available opportunities, their organisational capacity to implement skills development initiatives and their ability to effectively connect company-level actions with broader sectoral and national objectives through active participation in collective frameworks and networks.

The Spanish strategy is embedded in a permanent institutional framework, supported by industry levy funding, and represents the most structurally integrated approach. It benefits from reliable, consistent funding streams, supplemented by diminishing public funding through project participation and commercial activities for its members. A key advantage is its clear governance structure, with strong regional representation through 17 territorial councils across Spain's autonomous communities.

The FLC is well positioned to address regional needs, with 54 training centres nationwide and territorial councils that provide a practical, localised perspective. This regional structure allows the FLC to stay closely connected to local realities, adapt to regional differences and collaborate with regional governments. In Spain, where education and employment competencies lie with the autonomous communities, this proximity to local legislation is crucial. The decentralised model also facilitates broader access to courses, increasing opportunities for beneficiaries across regions.

By working closely with national and regional stakeholders, the FLC supports employers, employees and job-

seekers entering the sector. Its strong implementation capacity, bolstered by owned facilities, enables regional adaptation while maintaining central coordination. While the integration of strategy development and execution provides stability, the highly institutionalised framework may limit flexibility, agility and innovation compared to more market-driven approaches.

In the Irish case, the governance of the initiative is characterised by a decentralised structure that primarily operates through public institutions while incorporating

industry input through advisory mechanisms. At the strategic level, central governance is held by the [Department of Further and Higher Education, Research, Innovation and Science](#) through the [National Skills Strategy](#), with funding flowing from multiple public sources: the Department of Further and Higher Education, Research, Innovation and Science through a central exchequer, a training levy fund and, more significantly, the EU National Recovery and Resilience Plan, which has been crucial in supporting the expansion of NZEB centres from two to six across Ireland.

The implementation structure reflects Ireland's voluntarist approach to policymaking, where recommendations from the EGFSN are voluntarily adopted by responsible public bodies rather than mandated. SOLAS plays a crucial coordinating role through the newly established Green Skills Advisory Committee, managing both coordination and funding allocation, while the Education and Training Boards deliver training through their Centres of Excellence. While these core responsibilities rest with public institutions, the system actively incorporates non-public stakeholders through bodies like the Construction Sector Group, which brings together industry representatives with government officials. The funding model prioritises accessibility by making NZEB courses free at the point of use through the Skills to Advance Initiative, while apprenticeships receive partial employer funding with available bursaries. This hybrid governance approach, combining public institution leadership with industry consultation, creates both challenges and opportunities – while coordination across multiple autonomous bodies is time-consuming, it allows for local innovation and adaptation, though success ultimately depends on continued funding commitment and strong stakeholder relationships.



SMEs require specific support mechanisms for workforce skills development, given their distinct challenges and limited resources

While larger companies often have dedicated HR departments and training capabilities, smaller firms typically lack the capacity, time and resources to engage in systematic skills development.

In Finland, the strategy proposes innovative solutions to address SME needs. It encourages the formation of regional business-education networks that can provide information and outreach services to local companies. A notable initiative under discussion is the introduction of company coaches or competence coaches specifically dedicated to supporting SMEs with staff development. The strategy also promotes regional clustering, where smaller companies in similar niches can collectively address learning needs and jointly access training solutions. This approach not only makes training more accessible and cost-effective, but can also spark new business opportunities through inter-company collaboration.

Spain's approach, through the FLC, reflects the sector's composition where 98% of companies employ between 6 and 10 workers. Recognising that these microcompanies need the most support, the FLC has established a dedicated working group comprising employer representatives, trade unions and training experts to specifically address smaller companies' needs and develop effective engagement strategies.

This targeted focus acknowledges that, while large enterprises might conduct training independently, smaller firms crucially depend on sector-specific support.

Ireland's strategy faces particular challenges in engaging SMEs, especially given the sector's high current demand and workforce pressures. To overcome these barriers, the approach focuses on making training more accessible through financial incentives and adapted delivery formats. Key measures include providing free training in priority areas like NZEB and offering 'short, sharp courses' that minimise time away from work. Despite these efforts, engaging the smallest companies – often 'a man with a van' – remains challenging, highlighting the importance of industry bodies as intermediaries. Across all three countries, the strategies emphasise the need for:

- tailored support mechanisms that account for SMEs' limited resources;
- collaborative approaches that enable resource sharing and collective learning;
- financial incentives and flexible delivery formats to increase participation;
- strong intermediary organisations to facilitate engagement and support;
- recognition that standard training approaches often fail to meet SMEs' needs.



...in **Finland**, the strategy proposes **innovative solutions** to address **SME needs...**



...**Spain's approach**, through the FLC, reflects the sector's composition where **98% of companies employ between 6 and 10 workers...**



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POLICY POINTERS

In this section

Employers need systematic support to emerge as primary architects of continuous skills development

Advancing systematic skills development in workplace contexts demands a sector-based approach



Employers need systematic support to emerge *as primary architects of continuous skills development*

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The traditional approach to workforce skills development, largely relying on institutional CVET, is proving insufficient for today's rapidly evolving economy and is widening labour and skill shortages. While institutional CVET remains valuable, employers must take a more active role in workforce skills development to ensure business competitiveness and innovation capacity. This involves both designing off-the-job learning opportunities delivered in or through the workplace and fostering continuous skill development through strategic job design and learning supportive organisational contexts.

This evolution is particularly evident in modern sectors driven by technological advancement, where success depends on competencies that cannot be fully developed through institutional-driven training alone. Companies must foster environments where skills development is part and parcel of their strategies for competitiveness and innovation. This means deciding and designing specific off-the-job training and ensuring continuous learning through daily operations and innovation processes. This represents a fundamental shift from viewing skills development as an externally provided, periodic activity to seeing it as a core organisational responsibility.



...**traditional approach** to workforce skills development... is proving **insufficient** for today's rapidly evolving economy and is **widening labour and skill shortages**...



...success depends on **competencies that cannot be fully developed through institutional-driven training** alone...



...**companies** must foster environments where **skills development** is **part** and **parcel** of their **strategies for competitiveness and innovation**..

In this new paradigm, companies take on multiple roles: they create environments for continuous skill development and generate new competencies and off-the-job learning opportunities both for specific needs and where formal solutions do not yet exist. Above all, learning occurs organically through solving real business challenges, engaging with innovation projects and sharing knowledge through industry networks.

However, creating effective workplace learning environments demands systematic support. Organisations need assistance in developing internal processes for identifying skill needs, designing appropriate learning interventions, implementing management practices that support learning and measuring outcomes. Regional business-education networks and competence coaches become crucial, especially for SMEs lacking internal capabilities for structured learning approaches.

This transformation toward organisation-led skills development complements rather than replacing institutional CVET. It requires new bridges between the institutional and workplace skills-development contexts, including frameworks for recognising workplace-acquired competencies, flexible qualification systems and pathways for converting tacit knowledge into recognised credentials.

The shift demands policy approaches that create incentives to overcome short-term thinking and enable sector-specific solutions. Policies must help organisations build sustainable learning capabilities through knowledge management and innovation-driven networks, while supporting them in viewing skills development as integral to business strategy.

Organisations emerge as primary architects of skills development, orchestrating both off-the-job and continuous development through work to drive innovation and maintain competitive advantage in rapidly evolving markets.



Advancing systematic skills development in workplace contexts demands a sector-based approach

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The evidence from the three distinct sectoral approaches shows elements of a path forward for approaching skills development in workplace contexts in a systematic and integrated way. This transformation must be anchored in sector-specific strategies while maintaining system-wide coherence.

01 SECTOR-SPECIFIC GOVERNANCE EMERGES AS FUNDAMENTAL TO SUCCESS

The Finnish technology sector demonstrates how network-based coordination can drive innovation in skills development, while Spain's FLC shows the value of strong institutional frameworks. Future governance must combine these strengths – enabling sector-specific innovation while maintaining quality standards.

02 LEARNING ECOSYSTEMS NEED SECTOR-SPECIFIC DESIGN

TIF reveals how companies generate new competencies through work processes before these can be formalised in training programmes.

03 SME CHALLENGE REQUIRES SECTOR-BASED SOLUTIONS

All cases highlight how smaller companies struggle with systematic skills development, but sector-specific approaches offer solutions. The Finnish technology sector's regional clustering shows how SMEs can collectively address learning needs within their industry context, while Spain's construction sector demonstrates how strong institutional support can reach smaller companies.

04 INTELLIGENCE GATHERING AND STRATEGIC PLANNING MUST REFLECT SECTOR REALITIES

The Finnish use of AI for competence forecasting and the Spanish Construction Industry Observatory exemplify how sector-specific monitoring enables targeted responses to emerging needs. These approaches must be adapted for different sectors while maintaining cross-sector learning opportunities.



...evidence...shows elements of a path forward for approaching **skills development in workplace contexts** in a systematic and integrated way...



...all **cases highlight** how smaller companies struggle with systematic skills development, but **sector-specific approaches offer solutions...**



...**transformation requires balanced implementation:** strong sector-level coordination with cross-sector learning, regional adaptation within sector frameworks and stakeholder engagement at **multiple levels...**



05 RECOGNITION FRAMEWORKS NEED SECTOR-SPECIFIC ADAPTATION WHILE MAINTAINING SYSTEM-WIDE CREDIBILITY

Spain's work on harmonising vocational qualifications with professional certificates shows how sectors can bridge formal and workplace learning without compromising standards.

This transformation requires balanced implementation: strong sector-level coordination with cross-sector learning, regional adaptation within sector frameworks and stakeholder engagement at multiple levels. The goal is not to create isolated sector systems but to enable targeted responses to sector needs while maintaining coherent national skills frameworks.

Success demands recognition that effective skills development combines institutional CVET's strengths with sector-specific workplace learning approaches. It is not about choosing between institutional and workplace skills development contexts, but creating integrated sector-based systems that leverage both for maximum impact.

POLICY BRIEF

Towards organisations as learning workplaces

Moving beyond certified, institutionalised continuing vocational education and training

This policy brief highlights the need to transform adult skills development by expanding beyond traditional continuing vocational education and training (CVET) to include workplaces and digital environments supported by frameworks that connect formal, non-formal and informal learning pathways.

It stresses the importance of workplaces as lifelong learning spaces and argues that policies should enable learning through work. Drawing on case studies from Ireland, Spain and Finland, the brief explores sectoral approaches to workforce skills development. Finland's transformative model places workplaces at the core of learning, while Spain and Ireland rely on more traditional, institution-based training provided primarily outside the workplace.

Key themes include sectoral governance, SME support and intelligence-based skills planning. The findings offer actionable insights for policies that encourage employers to take a more active role in workforce skills development, shifting from periodic training to continuous, workplace-integrated learning that boosts business competitiveness and innovation.

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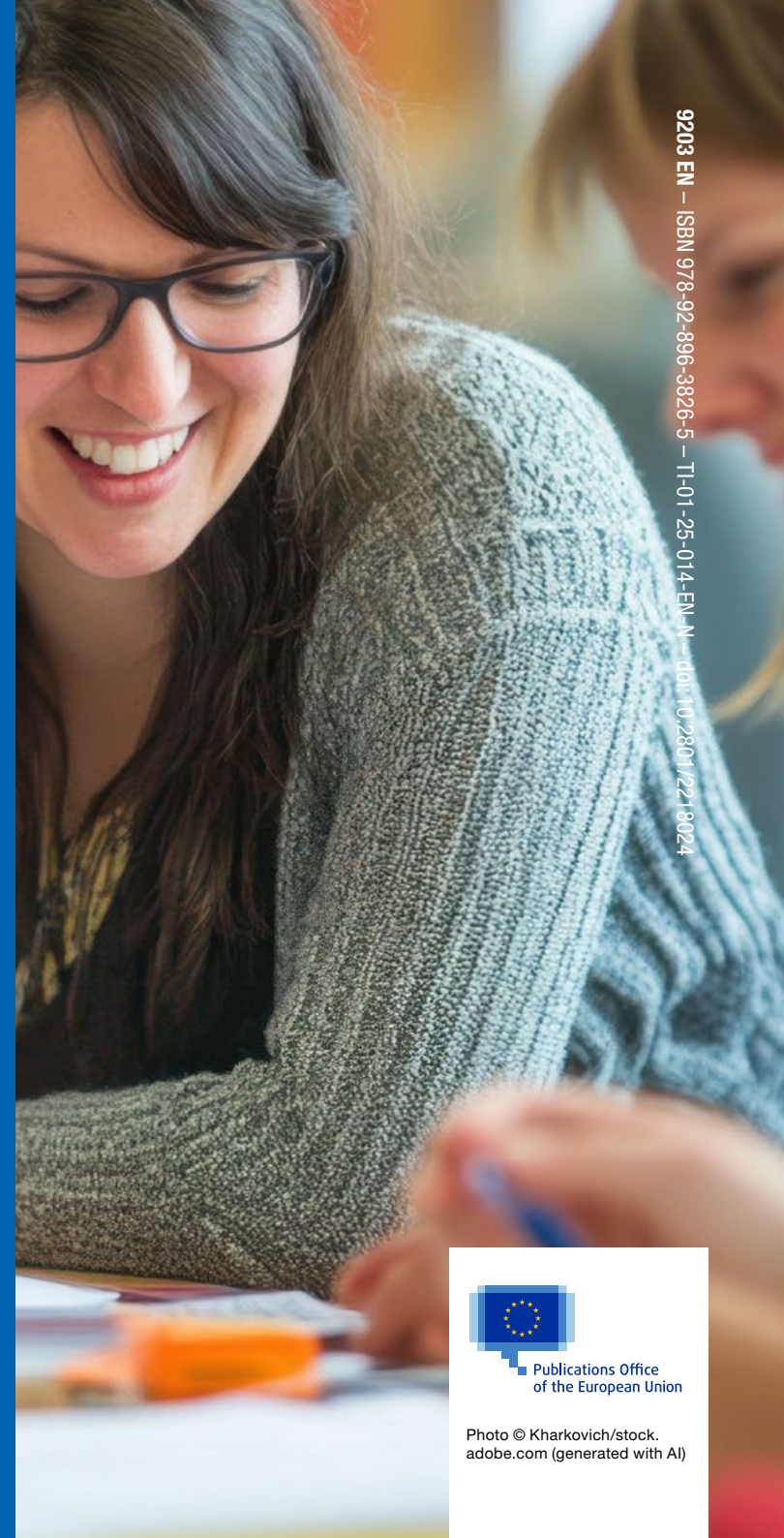
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