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Micro-credentials in Spain: frameworks, progress and challenges

Analysis of their development in **vocational education and training**, **higher education** and **vocational training for employment**

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EXECUTIVE SUMMARY

In recent years, **micro-credentials** have emerged as a relevant tool for **addressing the upskilling and reskilling needs** in working environments characterised by increasingly rapid technological, industrial and organisational change. Their development is part of a broader trend to promote lifelong learning, supported by European institutions and aimed at facilitating more flexible and accessible learning pathways aligned with labour market needs. In a constantly changing world, learning approaches must also evolve.

Their main framework of reference is the **Council Recommendation of 16 June 2022** on a European approach to micro-credentials for lifelong learning and employability. It defines micro-credentials as records of learning outcomes achieved through a small volume of learning and assessed against transparent and clearly defined criteria.

One of the main contributions of micro-credentials is their capacity to certify learning in areas where formal qualifications remain limited or do not yet exist. They therefore have an important role in **lifelong learning** for adults, the intended beneficiaries of these initiatives. In this respect, micro-credentials can help facilitate reskilling and transitions to new sectors of employment.

Micro-credentials can be issued by a **wide range of providers**, both public and private, across **different areas of education and training**. Leadership by the relevant public authorities is therefore essential, primarily in employment, education and training. Migration, labour mobility and international cooperation policies must also be considered, particularly in relation to the recognition and portability of learning. To be coherent and effective, this leadership should be shared within a framework of social dialogue that places individuals (as potential learners) and employers at the centre of its priorities. Their participation is especially important in identifying emerging skills needs and validating the relevance of training provision to the labour market.

This report analyses the current state of micro-credential implementation across three key areas in Spain: Vocational Education and Training (VET), Higher Education (HE), and Training for Employment.

In **VET**, the principles of micro-credentials fit naturally within a model of short, modular provision that supports progression through flexible learning pathways adapted to individual needs. Their development should not, however, be limited to dividing existing provision into smaller units. It should address current skills needs and anticipate those arising as the labour market evolves. The catalogues and registers underpinning the VET system provide a common foundation of professional skills and facilitate the accumulation and formal recognition of credits and awards, supporting their portability. They thus offer an established framework within which to develop the European approach.

In **HE**, micro-credentials extend institutions' role in lifelong learning and complement traditional Bachelor's and Master's programmes with shorter, more flexible provision that is compatible with work-life balance and linked to specific labour market needs. Their consolidation requires stronger relationships with employers, greater use of co-designed and demand-led provision, incentives for teaching staff to participate, and more sustainable funding. At the same time, broad access must be ensured so that micro-credentials do not become solely a route into university study or an option for professionals with higher qualifications and greater financial resources.

In **Training for Employment**, micro-credentials can build on established resources, although the model's development remains limited. Mechanisms for identifying skills needs and labour market trends, guidance services, training registers and participatory governance structures provide a basis for their gradual introduction without creating entirely new instruments. Their main value lies in strengthening the connection between training and the labour market, with particular emphasis on employability and job matching for groups requiring additional support. Social dialogue is essential to identify priorities and translate them into relevant training provision.

Overall, several **challenges** must be addressed to establish a coherent and widely recognised system of micro-credentials in Spain.

Progress is needed in harmonising the different areas of education and training, making better use of existing resources and increasing their visibility, while strengthening shared governance among public authorities, providers, employers and social partners. Trust must also be reinforced through transparent quality criteria, while provision remains aligned with current and future labour market needs; sustainable funding will be necessary to broaden access and expand provision; and, finally, portability and stackability across systems will be essential to prevent credentials from remaining isolated and to support lifelong learning pathways with educational and professional value.

Given the current context and available resources, Spain has an **opportunity** to make micro-credentials an effective bridge between lifelong learning and a continuously changing labour market.

MICRO-CREDENTIALS IN SPAIN: FRAMEWORKS, PROGRESS AND CHALLENGES

1. INTRODUCTION TO MICRO-CREDENTIALS: RATIONALE AND POLICY CONTEXT

Micro-credentials: what are they? What purpose do they serve? These questions provide an initial basis for examining this emerging instrument for certifying learning, intended to quickly respond to evolving labour market needs. Will micro-credentials become a lasting feature of training provision, or struggle to gain a foothold alongside existing programmes? In a social and employment context where education and training are recognised as rights, the variety of available offer can make it difficult for any particular model to stand out. Can micro-credentials provide reliable evidence of skills acquisition? This depends largely on quality safeguards, alignment with labour market needs, and employers' and learners' trust in the outcomes.

To address these questions, the report provides an **introductory analysis of micro-credentials**, tracing their development at European level and their introduction in Spain. It considers how they have been approached within the main education and training systems supporting lifelong learning. Across Europe, new labour market challenges require skills to be developed through targeted, responsive and flexible provision.

1.1. Why have micro-credentials emerged? Labour market challenges and policy responses

The European labour market – including those of individual Member States – faces **both labour shortages and a mismatch between the skills** employers require and those available in the workforce.

Across Europe, employers face difficulties in recruiting people with the technical knowledge and transversal skills they need today and will require as occupations evolve. Skills are becoming obsolete more rapidly amid continuing social, digital and green transitions; demographic pressures, the technological developments and artificial intelligence (AI) associated with the fourth industrial revolution, and growing global competition intensify these challenges.

For over a decade, the European Union has developed skills policies and strategies to align talent development with current and future labour market needs. Micro-credentials play an important role in lifelong learning by certifying learning in areas where formal qualifications are limited or do not yet exist.

This **strategic priority on the European policy agenda** has informed several initiatives. Earlier developments include the European Qualifications Framework (EQF)[1], established in 2008 to enable comparison between National Qualifications Systems and promote lifelong learning, and the **2016** Council Recommendation on Upskilling Pathways[2]. This analysis focuses on the European initiatives that have directly influenced the development of micro-credentials.

1 For more information, please visit the following link: El Marco Europeo de Cualificaciones (MEC) | Europass

2 For more information, please visit the following link: EUR-Lex - 32016H1224(01) - EN - EUR-Lex

First, the **European Pillar of Social Rights** provides a foundation for this approach by recognising the right to quality and inclusive education, training and lifelong learning, enabling people to meet current and future labour market challenges. It also recognises the right to personalised support to improve employment prospects (European Parliament, Council of the European Union, & European Commission, 2017). Similarly, Article 27 of the Spanish Constitution (1978) recognises the right to education and freedom of teaching.

Recognising **learning as a right** underpins the need for lifelong learning provision that the workforce can access alongside their daily commitments. The challenge is not only to develop the skills the labour market requires, but also to overcome the barriers adults face in accessing education and training, including cost, time constraints and motivation. These **barriers** are particularly significant for small and medium-sized enterprises (SMEs), which account for 99.8% of businesses in the European Union (Kambic & Maquet, 2026) and 99.7% in Spain (Ministry of Industry and Tourism, 2026).

Secondly, the **2020 European Skills Agenda**[3] provides a foundation for micro-credentials. This five-year plan adopts a comprehensive approach to helping individuals and businesses develop and apply more and better skills in the context of the transition to a climate-neutral Europe and digital transformation. It builds on the European Commission's 10 actions under the 2016 New Skills Agenda for Europe[4] and aligns with the **European Union's Recovery and Resilience Facility** (RRF) in relation to investment in skills and employment, channelled in Spain through the **Recovery, Transformation and Resilience Plan** 2021–2027. The Agenda thus promotes upskilling and reskilling aligned with the identification of labour market needs. Moreover, it prioritises lifelong learning, strengthens links between education and training providers and employers, and recognises the connection between Europe's economic performance and its capacity to develop and deploy human capital effectively.

The **Pact for Skills**[5], launched in 2020 as a flagship action of the Agenda, promotes sectoral partnerships and commitments across major European industrial ecosystems to strengthen employers' involvement in lifelong learning. Through large-scale alliances at European, national and regional levels, the Pact seeks to increase investment in training, anticipate future skills needs and support workforce adaptation to technological and industrial change.

Third, the **MICROBOL project**[6], implemented between 2020 and 2022, contributed to the early development of the European approach by linking micro-credentials to key Bologna commitments. It supported ministries and stakeholders in examining whether existing Bologna Process tools could apply to micro-credentials or needed adaptation. The international project consortium and MICROBOL working group contributed to a European approach in 2021, proposing standards for defining micro-credentials and guidance on their consistent design across Europe.

The **Council Resolution on a strategic framework for European cooperation in education and training towards the European Education Area and beyond**[7] (2021–2030) highlights the role of micro-credentials in lifelong learning. They can broaden learning opportunities and strengthen the contribution of Higher Education (HE) and Vocational Education and Training (VET) through more flexible, modular and inclusive learning pathways.

3 For more information, please visit the following link: European Skills Agenda - Employment, Social Affairs and Inclusion

4 For more information, please visit the following link: eur-lex.europa.eu/legal-content/ES/TXT/PDF/?uri=CELEX:-52016DC0381

5 For more information, please visit the following link: Homepage of Pact for skills

6 For more information, please visit the following link: Home - MicroBol

7 For more information, please visit the following link: EUR-Lex - 32021G0226(01) - EN - EUR-Lex

Finally, the 2022 **Council Recommendation on a European approach to micro-credentials**[8] brings together the findings of working groups and consultations involving European and national stakeholders. It provides a framework for Member States to develop micro-credentials in formal learning settings, support quality and transparency, promote experimentation, cooperation, governance and lifelong learning ecosystems, and integrate micro-credentials into active labour market policies. The Recommendation (2022) defines micro-credentials as follows:

> 'Micro-credential' means the record of the learning outcomes that a learner has acquired following a small volume of learning. These learning outcomes will have been assessed against transparent and clearly defined criteria. Learning experiences leading to micro-credentials are designed to provide the learner with specific knowledge, skills and competences that respond to societal, personal, cultural or labour market needs. Micro-credentials are owned by the learner, can be shared and are portable. They may be stand-alone or combined into larger credentials. They are underpinned by quality assurance following agreed standards in the relevant sector or area of activity. (p. 9)

Thus, micro-credentials are aimed at supporting adults progress in their careers or change direction by enabling them to combine lifelong learning with other commitments. Provision may be varied (e.g. online, blended or in-person), and can combine theoretical knowledge with practical experience (Cedefop, 2022).

In parallel, the **Council Recommendation on individual learning accounts (ILAs)**[9], also adopted in 2022, offers potential synergies with micro-credentials. It promotes the development of ILAs among Member States, as personal accounts that "allows individuals to accumulate and preserve their entitlements over time, for whichever eligible training, guidance or validation opportunity they deem most useful and whenever they want to, in line with national rules" (Council of the European Union, 2022, p. 5). This approach can encourage the workforce to participate in lifelong learning and complement the goal of micro-credentials: ILAs provide resources to access training irrespective of employment status and funding source, while micro-credentials support short, flexible provision focused on specific learning outcomes. Their combined use can support personalised learning pathways funded through ILAs and encourage participation in training aligned with employers' needs.

Following the Recommendation, the European Union has continued to prioritise skills development aligned with labour market needs. As such, the designation of 2023 as the E**uropean Year of Skills**[10] reinforced this commitment to lifelong learning and the importance of workforce development for competitiveness, innovation and quality employment.

Moreover, the European Commission's **Political Guidelines for 2024–2029**[11] introduced the **Union of Skills**[12] to address skills gaps and labour market shortages through "investment, adult and lifelong learning, skill retention and the recognition of different types of training, to enable people to work across Europe (von der Leyen, 2024, p. 12). Launched in 2025, the Union of Skills provides a more integrated strategic framework for skills, education and training policies. It aims to strengthen European competitiveness and support workforce adaptation to technological and economic change, building on earlier priorities: improving basic and advanced skills, supporting lifelong learning, strengthening labour mobility and anticipating future skills needs.

8 For more information, please visit the following link: EUR-Lex - 32022H0627(02) - EN - EUR-Lex

9 For more information, please visit the following link: Publications Office

10 For more information, please visit the following link: European Year of Skills

11 For more information, please visit the following link: Political Guidelines 2024-2029 | European Commission

12 For more information, please visit the following link: Unión de las Competencias - Comisión Europea

Subsequently, in 2026, the Council adopted the first **Recommendation on human capital in the European Union**[13] within the framework of the European Semester[14]. The Recommendation recognises skills shortages as a major constraint on competitiveness and investment, noting that 77% of EU businesses reported a lack of relevant skills as a barrier to long-term investment in 2024 (Council of the European Union, 2026). Thus, it calls on Member States to strengthen skills development by improving VET, increasing participation in lifelong learning, systematically identifying labour market needs and taking targeted action in strategic sectors such as healthcare, information and communication technologies (ICT), engineering, agriculture and education.

Alongside these cross-cutting initiatives, the European Commission has supported sectoral cooperation through sector **skills alliances** or **Blueprint Alliances**[15] for sectoral cooperation on skills and **Erasmus+**. These initiatives bring together employers, trade unions, education and training providers, research organisations and public authorities to identify emerging skills needs based on sectoral skills strategies and design training solutions aligned with employers' requirements.

Finally, in September 2026, the European Commission adopted the F**air Labour Mobility Package**[16] to facilitate labour mobility and strengthen protection for mobile workers through initiatives on skills portability and social security coordination. The Skills Portability Initiative includes proposals to improve the transparency and transferability of qualifications, simplify professional recognition procedures and create a more coherent framework for recognising digital credentials obtained within and outside the European Union. Micro-credentials can contribute to addressing shortages of skilled workers, supporting the labour market integration of migrants and international workers, and meeting demand for new digital skills (Cedefop, 2022).

These challenges concern not only lifelong learning authorities and providers, but all labour market stakeholders. Addressing them requires coordinated action by governments, public authorities, education and training providers, employers and social partners at European, national and sectoral levels.

Micro-credentials are part of the shift in mindset that has been taking shape over the last decade in Europe to reinforce the role of lifelong learning, upskilling and reskilling, as a basis for tackling the skills revolution, with a focus on sustainable development, the creation of a fairer society and resilience in the face of crises. To monitor progress, **the European Union has set three targets for 2030**:

1. **60%** of the adult population participating in training each year.
2. **80%** of Europeans with at least basic digital skills.
3. **20 million** ICT specialists, taking into account gender convergence.

13 For more information, please visit the following link: EUR-Lex - 32026H01687 - EN - EUR-Lex

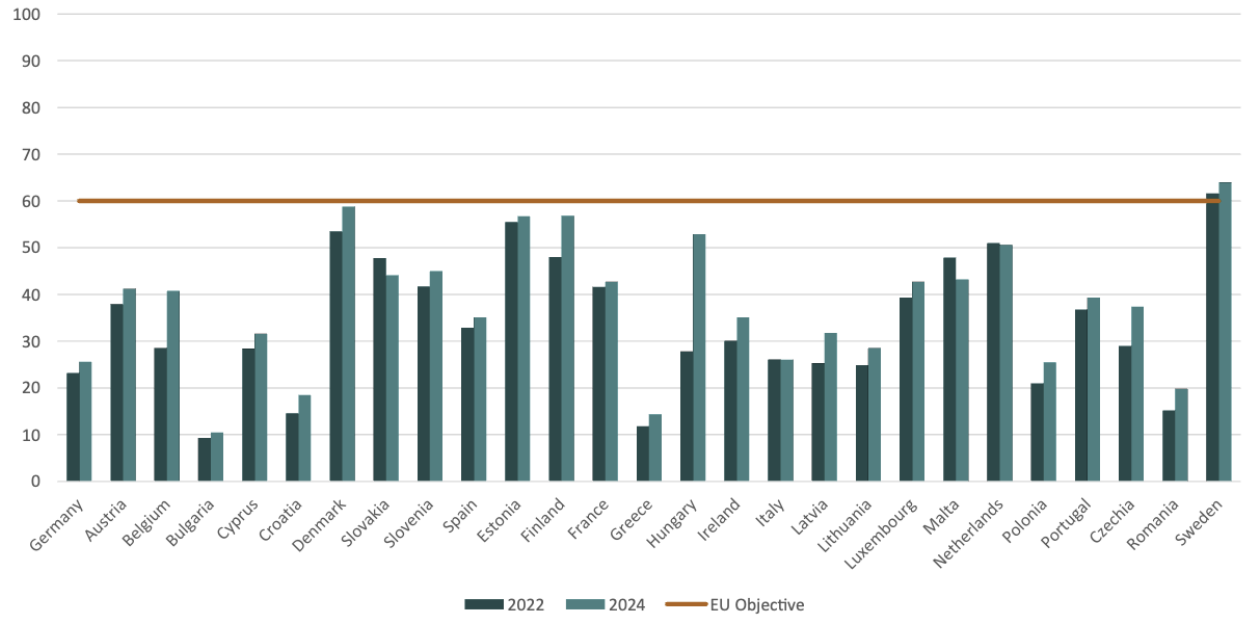
14 For more information, please visit the following link: El Semestre Europeo - Consilium

15 For more information, please visit the following link: Blueprint for sectoral cooperation on skills - Employment, Social Affairs and Inclusion

16 For more information, please visit the following link: Fair Labour Mobility Package - Employment, Social Affairs and Inclusion

The current progress of these indicators is reviewed below:

Chart 1. Adult participation in education and training (last 12 months)

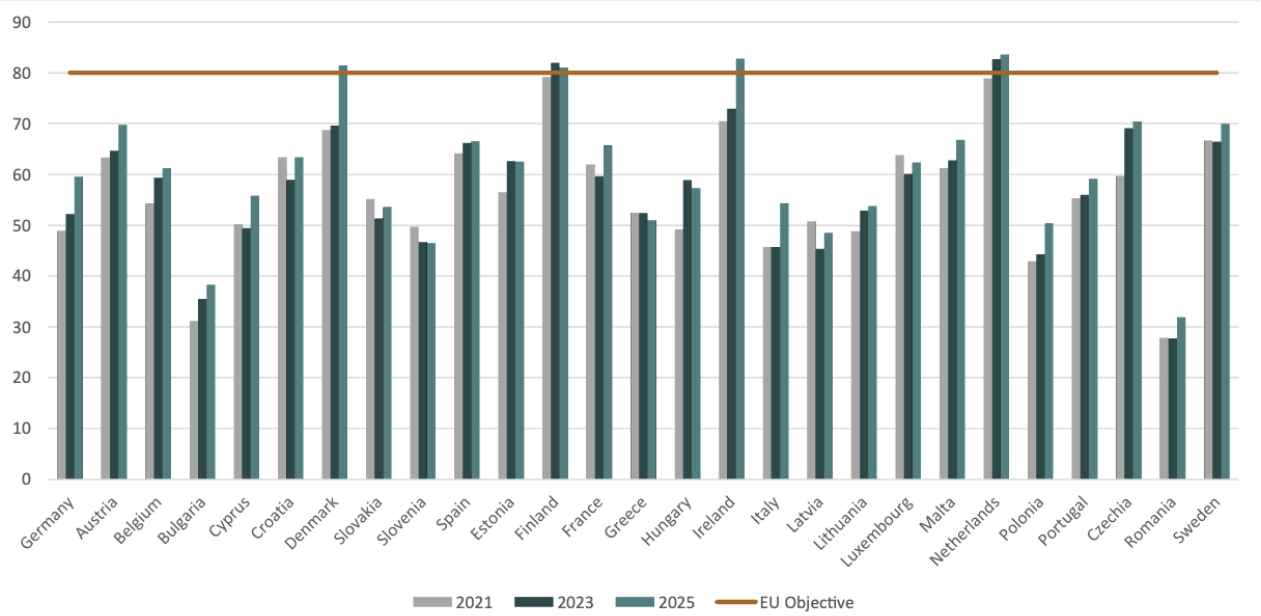


Source: (Eurostat, Participation rate in education and training (last 12 months), 2026)

Against the target of **60%** of adults participating in learning each year, Sweden was the only country to reach the threshold in 2022, at 61.6%, rising to 64% in 2024. Denmark (58.8%) and Finland (56.8%) followed closely in 2024. In **Spain, only 35.1% of adults** reported participating in education or training during the previous year, approximately two percentage points more than in 2022 and still well below the European target for 2030. Promoting lifelong learning is particularly important given the estimated greater exposure of lower-skilled jobs to automation (OECD, 2023).

These two factors – limited participation in lifelong learning and low qualification levels – reinforce the need for training aligned with future labour market requirements. In this context, micro-credentials can support participation through flexible provision focused on employers' needs.

Chart 2. Digital skills, 2021–2025 (% of people with at least basic digital skills)



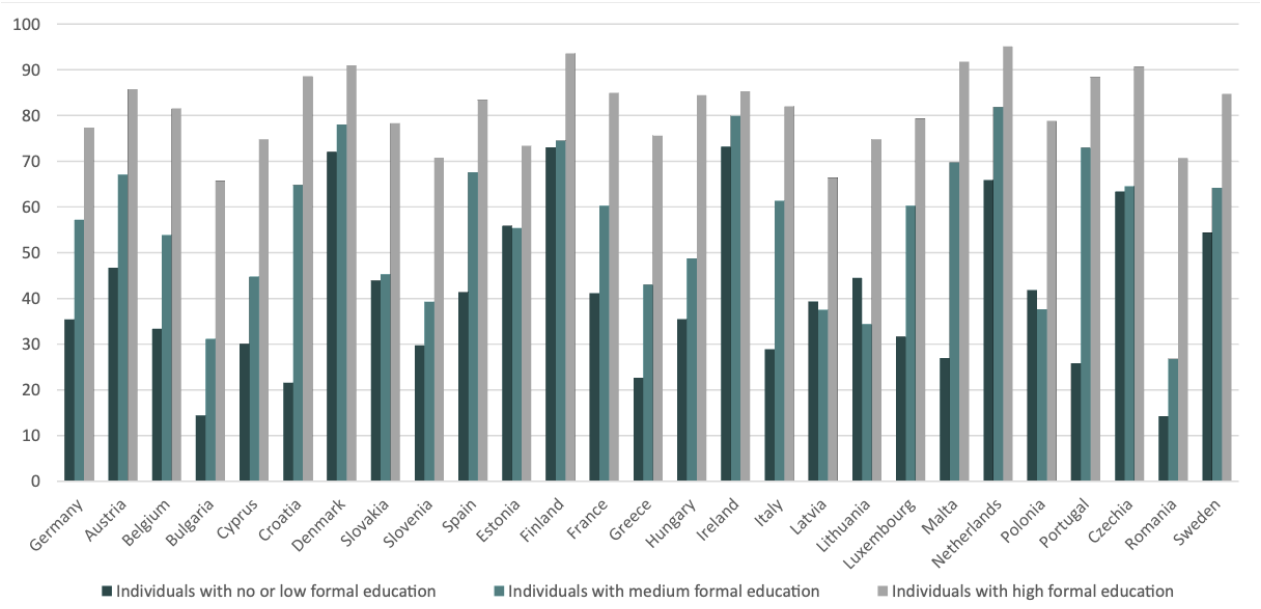
Source: (Eurostat, Individuals' level of digital skills (from 2021 onwards), 2026)

Four countries had reached the European target of **80%** of people having at least basic digital skills by 2025: the Netherlands (83.6%), Ireland (82.8%), Denmark (81.4%) and Finland (80.9%). At the other end of the distribution, Bulgaria (38.2%) and Romania (31.8%) face a substantial challenge in increasing these shares by 2030. In **Spain, 66.5%** of people had at least basic digital skills in 2025, an increase of 2.3 percentage points from 2021. Despite this progress, a gap of 13.5 percentage points remains to be closed over five years, requiring an average annual improvement of 2.7 percentage points in the following years.

A more detailed analysis considers the share of people with at least basic digital skills by level of educational attainment, classified as low, medium or high under Eurostat definitions.

This highlights the association between formal education and digital skills:

Chart 3. Digital skills in 2025 (% of people by level of educational attainment)

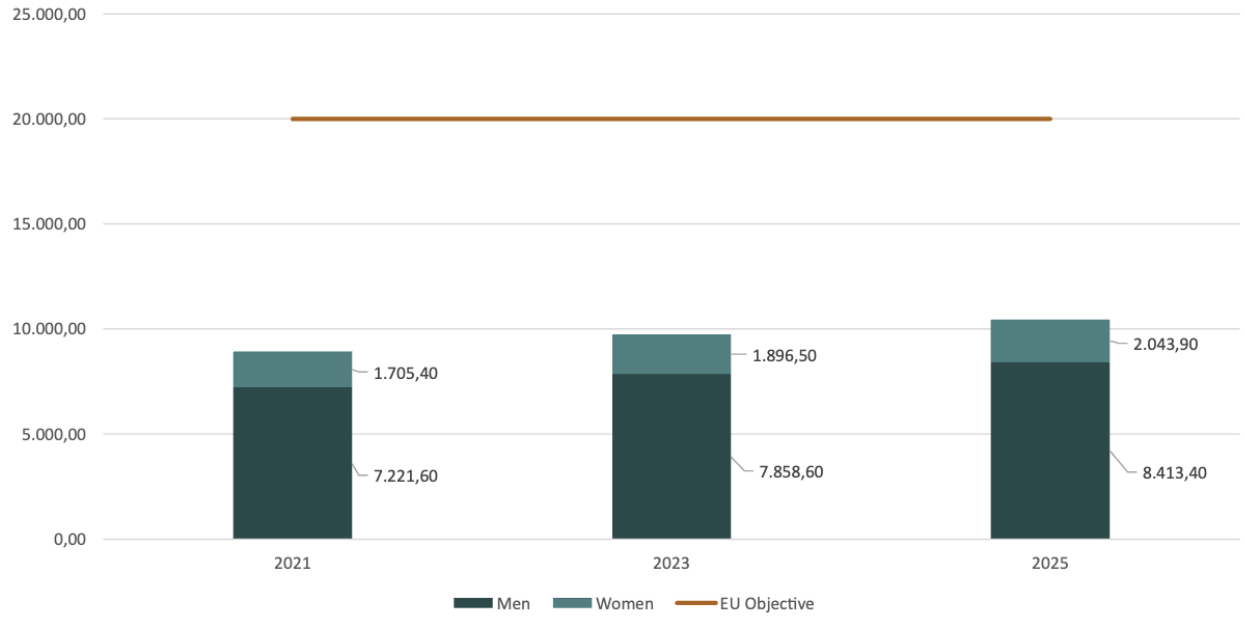


Source: (Eurostat, Individuals' level of digital skills (from 2021 onwards), 2026)

The chart shows a consistent association between educational attainment and digital skills across the countries analysed in 2025. In every case, people with **high educational attainment have the highest shares of at least basic digital skills**, generally between 75% and 95%. Those with medium attainment occupy an intermediate position, averaging around 55%, while those with low attainment average around 40%. In the Netherlands, Finland, Malta, Denmark and the Czech Republic, more than 90% of people with high educational attainment have at least basic digital skills; in contrast, this group represents less than 70% in Bulgaria and Latvia.

Croatia, Malta and Portugal show the widest gaps, exceeding 60 percentage points between high and low educational attainment. This indicates substantial differences in digital skills associated with education levels. Ireland, Estonia and Denmark show the smallest gaps, at less than 20 percentage points. **Spain occupies a relatively favourable position**, with 83.4% of people with high educational attainment having at least basic digital skills, although a significant difference remains compared with those with low attainment (41.4%). Overall, the data highlight the association between education and digital skills development in Europe.

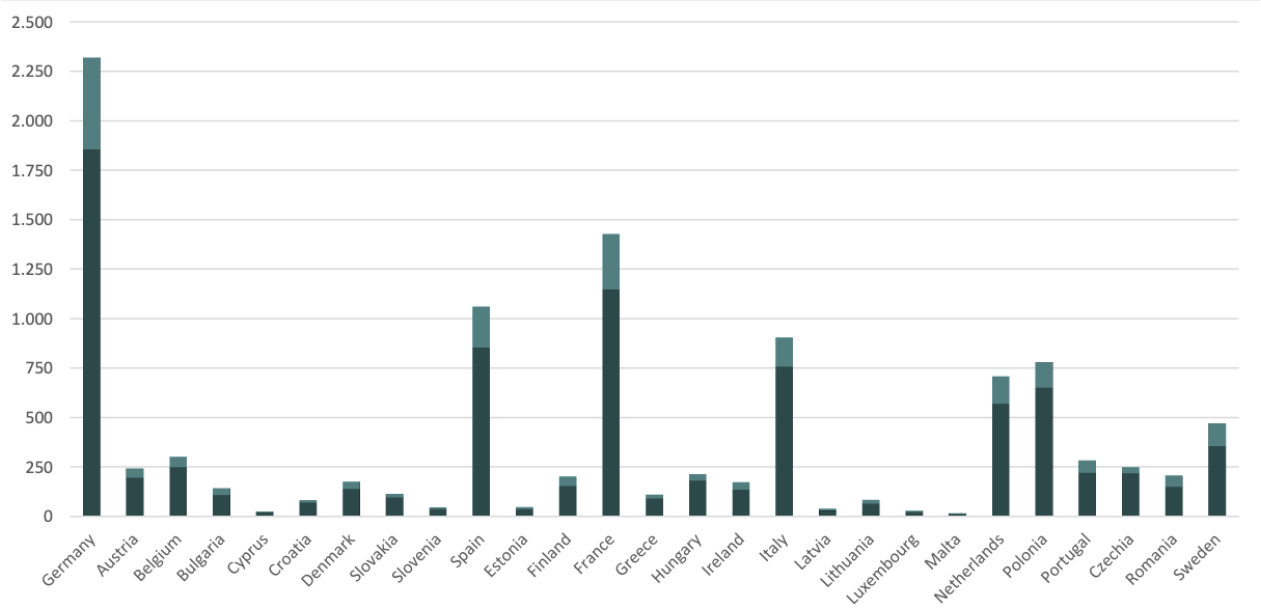
Chart 4. Information and communication technology (ICT) specialists in the European Union by sex, 2021–2025 (thousands)



Source: (Eurostat, Employed information and communications technology (ICT) specialists by sex, 2026)

Across the 27 EU Member States, approximately 10.4 million people were employed as ICT specialists in 2025, just over half the European target of **20 million**. Although the digital workforce has grown significantly in recent years, the EU would need approximately **9.6 million additional specialists** over five years to reach the Digital Decade target, based on this rounded total. Their distribution varies considerably across countries:

Chart 5. Information and Communication Technology (ICT) specialists in 2025 (thousand persons)



Source: (Eurostat, Employed information and communications technology (ICT) specialists by sex, 2026)

Germany (2.32 million), France (1.43 million) and Spain (1.06 million) account for a substantial share of the European total, while smaller Member States have much lower numbers. A marked **gender gap persists**, with men accounting for approximately 80% of ICT specialists in the EU (8.41 million) and women for approximately 20% (2.04 million). Spain is among the largest contributors to the European target, but, like the EU as a whole, needs to accelerate training and talent attraction, particularly among women, to support the 2030 target and improve gender balance.

1.2. Key characteristics of micro-credentials

Although labour markets face many common challenges, micro-credential implementation varies across Member States and areas of education and training. The following chapters examine VET, HE and Training for Employment in Spain. Nonetheless, the **general characteristics** below provide a common reference:

Definition	• A record of the outcomes of a short learning experience (specific knowledge, skills and competences), linked where appropriate to a qualifications framework and assessed against transparent, clearly defined criteria. • Their purpose is to certify knowledge and skills, supporting lifelong learning and employability. • They can be issued by different providers and recognise learning acquired in formal, non-formal and informal settings.
Features	• Short and modular learning provision. • Specialised courses with clear objectives, focused on specific skills required by the labour market. • Flexible delivery, including online, in-person and blended learning. • Transparent assessment based on clearly defined quality criteria. • Development of verifiable digital credentials to support portability and stackability within broader learning pathways.
Target audience	• Adults, generally aged 25–64, who need to reskill/upskill in response to digital, green and social transitions. • Particular attention to groups requiring additional support, promoting wider access to education and training.
Requirements	• Entry requirements vary by provider, although provision is often designed for a broad audience. • Interest in the subject may be sufficient, without a prior qualification or experience, depending on the course and provider.

Benefits	• Responsiveness to changing labour market needs and potential improvement in employability. • Potential mitigation of skills obsolescence through modularity and stackability, allowing specific content to be updated without redesigning the entire learning pathway- and, as such, potential acceleration of certification where procedures allow reviews to focus on the amended modules. • Promotion of lifelong learning. • Support for upskilling and reskilling, with a focus on skills in high demand. • Potential support for the acquisition and validation of professional skills, including those gained through non-formal and informal learning. • Opportunities for closer understanding and cooperation between education and training providers and employers through a shared language. • Potential access to education for a wider variety of learners. • Provision of flexible learning pathways compatible with work and personal commitments. • Support for portability through issuance in verifiable, interoperable digital formats.
Drawbacks	• Persistence of stakeholder uncertainty about their benefits. • Potential obscuring of their value through the proliferation of unregulated formats. Difficulty in making informed decisions about short learning programmes due to limited transparency, especially where responsibility for quality assurance and recognition is unclear. • Confusion for learners arising from their complexity and diversity. • Lack of consistent transparency regarding responsibility for quality assurance. • Persistent challenges in recognition and stackability, including credit transfer. • Limitations in the reach of provision to vulnerable learners or groups requiring additional support. • Incomplete alignment with labour market needs in some areas at present.

1.3. Case Study: Ireland as a Benchmark for Micro-credentials and Lifelong Learning

Ireland is one of the **most advanced European cases** in micro-credential development, drawing on a long tradition of lifelong learning and a coherent ecosystem of skills policies and qualifications and quality assurance frameworks developed over more than two decades. European indicators show favourable trends in areas related to micro-credential objectives. According to Eurostat (2026) data, Ireland's early education and training leaving rate fell from 8.7% in 2013 to 3.6% in 2025, while participation in lifelong learning increased by 17% between 2022 and 2024.

Unlike countries where micro-credentials have only recently entered training policy agendas, Ireland has included short credentials within its qualifications system since the early 2000s, linking them to a **national strategy for skills development** and labour market adaptation. The more recent development is the international acceptance and recognition of small-volume HE qualifications, a challenge that many countries still face. What underpins the Irish approach?

The Irish model draws on a strong lifelong learning culture and extensive experience in skills policy. Three factors underpin its micro-credential approach: close **collaboration** between education and training providers and employers, supported by the National Skills Council, a business-led advisory body, and the Regional Skills Fora, which address territorial, sectoral and thematic needs; a transparent and verifiable **quality assurance system**, sufficiently flexible to respond to labour market needs and overseen by Quality and Qualifications Ireland (QQI); and **clear, accessible provision**, communicated through coordinated channels such as the Irish Universities Association's (IUA) MicroCreds project.

QQI's early exploration of Higher Education micro-credentials found that most awards in the dataset examined were at level 6 of Ireland's National Framework of Qualifications (NFQ), typically carrying 10–30 ECTS credits and delivered part time (QQI, 2021). Micro-credentials are increasingly diverse and support continuing education and training. They provide verifiable qualifications recognised within the NFQ, rather than simply certificates of attendance.

A strong public framework for skills and qualifications has been central to this development. Ireland introduced its **National Framework of Qualifications**[17] in 2003, among the earliest such frameworks in Europe. Initially managed by the National Qualifications Authority of Ireland and now overseen by QQI, it organises qualifications into ten levels based on learning outcomes across education and training. The inclusion of short courses and certificates has enabled small-volume learning to be recognised and combined since before the European debate on micro-credentials. The framework provides a common reference for learners, employers, providers and public authorities, supporting a common national understanding and international comparison of Irish qualifications.

Skills governance is also supported by the **National Skills Strategy 2025**[18], published in 2016 by Ireland's former Department of Education and Skills. It sets out an integrated approach to skills development encompassing labour market analysis, education quality, lifelong learning and recognition of prior learning (Department of Education and Skills, 2016). The National Skills Council was established to oversee implementation through monitoring and coordination with other public bodies and economic stakeholders.

Ireland's capacity to anticipate skills needs is supported by specialised institutions. These include, among others: **SOLAS**'s Skills and Labour Market Research Unit (SLMRU), which conducts labour market analysis and forecasting; the **Regional Skills Fora**, which communicate employers' needs at regional level; and the **Expert Group on Future Skills Needs**, an independent body bringing together employers, trade unions, education providers and public authorities to identify emerging skills and advise government. These mechanisms connect training planning with business and industry needs.

The Irish model also places strong emphasis on quality. QQI is the national body for quality assurance and oversight of the NQF. Its functions include programme validation, support for recognition of prior learning, provider quality assurance, advice on foreign qualifications and participation in the European ENIC-NARIC network.

The **MicroCreds project**[19] builds on this institutional and strategic foundation. Led by the IUA, it runs from 2020 to 2026 with a budget of €14.3 million and eight participating universi-

17 For more information, please visit the following link: National Framework of Qualifications | Quality and Qualifications Ireland

18 For more information, please visit the following link: Irelands National Skills Strategy 2025

19 For more information, please visit the following link: Home – MicroCreds | Short, Flexible, Accredited Courses

ties[20]. Funding is mainly streamed through the Human Capital Initiative via the National Training Fund, under the Department of Further and Higher Education, Research, Innovation and Science. The initiative aims to support lifelong learning through accessible, flexible and recognised micro-credential provision, using a common framework and a shared multi-university system.

MicroCreds' distinctive contribution is that it goes beyond funding individual courses to develop a coherent system for design, delivery, recognition, communication and quality assurance. Its framework draws on national and European standards so that participating universities' micro-credentials maintain the academic rigour associated with their other qualifications.

MicroCreds works across four complementary areas (Francis, 2024):

- **Alignment** with the national strategy. Participating universities collaborate on common standards, assessment methods and mutual recognition arrangements, contributing to an early European initiative for coordinated national micro-credential provision.
- **Collaboration and engagement** with employers to align provision with current needs and anticipate future requirements. This includes identifying priority areas and jointly designing course content and delivery, while adapting academic language to improve understanding among labour market stakeholders.
- Clear, coordinated **communication** of available provision to build understanding and trust, avoid duplication and facilitate access through a single portal[21], with current improvements intended to support integration with Europass.
- **Development** of micro-credentials across participating universities, supporting recognition and personalised learning pathways through the accumulation of credentials.

Overall, Ireland provides a relevant example of **integrating micro-credentials into a comprehensive skills strategy**. This approach rests not only on individual initiatives such as MicroCreds, but on a combination of an established qualifications framework, specialised skills intelligence institutions, stable dialogue with employers, dedicated lifelong learning funding and recognised quality assurance arrangements. The Irish experience illustrates the importance of embedding micro-credentials within wider skills and lifelong learning policy.

2. Micro-credentials in Spain

Progress in adopting a common definition of micro-credentials varies across European education and training systems. Spain is among the 42% of European countries that have adopted a definition aligned with the Council Recommendation in at least one of three areas: VET, HE or Training for Employment (European Commission, 2025). However, **implementation is not consistent across all three areas**.

The following chapters examine micro-credential development in each area, covering the applicable regulations, main stakeholders, approaches and available resources to clarify the current position in Spain.

20 Data based on the latest update to the Microcreds project. For further information, please visit the following link: MicroCreds Project Overview | Irish Universities Association

21 For more information, please visit the following link: Home – MicroCreds | Short, Flexible, Accredited Courses

3. Vocational Education and Training

Unlike the other areas – such as HE, where micro-credentials have developed as a distinct form of provision –, VET has **incorporated the principles underpinning the European approach to micro-credentials directly into the structure of the system**. The reform introduces five grades of provision (A, B, C, D and E), allowing learners to acquire small units of learning that can be formally recognised and accumulated. This enables individuals to build their own learning pathways and progress towards broader qualifications at higher levels.

3.1. Micro-credentials in VET: Current Regulation and Strategic Instruments

Micro-credential implementation in Spanish VET must be understood within the transformation introduced by **Organic Law 3/2022** on the organisation and integration of VET and subsequently developed through **Royal Decree 659/2023**, which sets out the organisation of the VET system[22]. Together, these regulations establish a single, integrated system oriented towards lifelong learning, with a flexible structure based on the progressive accumulation of skills and formally recognised awards:

> The law establishes a VET system in which all provision can be formally recognised, accumulated and counted towards further qualifications. Provision forms an ascending continuum according to its scope, from short training units to full VET qualifications. It may cover a single learning outcome, one or more vocational modules, or a complete set of modules, while retaining its cumulative nature. This structure supports progressive learning pathways: each programme comprises units that can provide continuity and lead to accredited skills, certificates and qualifications recognised nationally and in Europe. (Head of State, 2022, p. 12; translated)

The Ministry of Education, Vocational Training and Sports (MEFPD) defines a micro-credential as a **qualification demonstrating learning outcomes** acquired through a short course or module **assessed transparently**, whit the associated learning delivered either in-person, online or in a blended format (Ministry of Education, Vocational Training and Sports, n.d.).

From a strictly **regulatory** perspective, Spanish VET legislation does not generally use the term "micro-credential" for the system's basic provision. Instead, Organic Law 3/2022 establishes five grades: A, B, C, D and E. Grade A and, to some extent, Grade B provision comprise "micro-trainings" comparable to micro-credentials since they are modular, cumulative and focused on learning outcomes. Both are linked to the **National Catalogue of Professional Competence Standards** and are part of a modular, cumulative approach to learning.

Under Chapter II of Organic Law 3/2022, **Grade A** provision leads to partial accreditation of skills associated with one or more learning outcomes included in broader programmes. **Grade B** provision leads to a certificate of competence and corresponds to a complete vocational module included in higher grades of provision (Head of State, 2022). Learning acquired through small units can therefore be accumulated and subsequently recognised within broader certificates.

Royal Decree 659/2023 regulates the organisation of the VET system, including its grades of provision, associated awards and progression mechanisms. Chapter I expressly uses **"partial**

22 This framework should be read in conjunction with Law 30/2015 of 9 September, which regulates the Vocational Training System for Employment in the workplace; that Act remains in force insofar as it does not conflict with Organic Law 3/2022, in accordance with the sole repealing provision of the latter.

accreditation of competence or micro-accreditation" for Grade A provision, reflecting the incorporation of principles associated with international micro-credential development (Ministry of Education, Vocational Training and Sports, 2023). The concepts should nevertheless be distinguished. The European Union's approach to micro-credentials is broad and applies across education and training settings. By contrast, Spanish VET **micro-trainings or micro-accreditations** belong to a specific regulated framework and lead into formally defined learning pathways.

Both regulations follow the same underlying approach: enabling people to access small units of learning and accumulate them progressively towards a qualification. This structure aims to support continuous skills development and improve individuals' and employers' capacity to adapt to technological, organisational and industrial change.

A key feature of the new system is its **modular nature**. Grade A micro-trainings are designed to provide **rapid responses to specific professional skills needs**, supporting progression between grades and personalised learning pathways. According to the MEFPD, they can last between 5 and 160 hours, generally have no prior academic entry requirements, and are aimed particularly at workers who need to update or supplement specific professional skills (Ministry of Education, Vocational Training and Sports, n.d.).

These micro-trainings are supported by structural instruments intended to ensure coherence and recognition of learning. They include the **National Catalogue of Professional Competence Standards**[23], which defines the skills recognised by the system; the **Modular VET Catalogue**[24], which organises the associated training content; and the **National Catalogue of VET Provision**[25], which brings together all officially recognised provision leading to accredited learning.

The law also incorporates mechanisms aimed at guaranteeing traceability and recognition of learning. These include the **State Register of Vocational Training**[26] and the **State Register of Accreditation of Professional Competences**[27], which make it possible to document the accreditations obtained and facilitate the recognition of the professional and training experience of each individual.

3.2. Governance: Key Stakeholders

The **main authority** responsible for the design and development of micro-credentials in vocational training is the **Ministry of Education, Vocational Training and Sports (MEFPD)**, which is responsible for establishing the general regulation of the system, developing common management instruments and coordinating their implementation throughout the national territory.

Alongside the Ministry, the **Autonomous Communities** play a fundamental role in planning, organising and managing training provision. Royal Decree 659/2023 assigns them responsibilities for adapting provision to each territory's economic and social needs and ensuring sufficient provision across all grades of the system.

23 For more information, please visit the following link: El Catálogo (CNECP) - Web incual - Incual

24 For more information, please visit the following link: Catálogo Modular de Formación Profesional - TodoFP | MEFPD

25 For more information, please visit the following link: Catálogo Nacional de ofertas del sistema - TodoFP | MEFP

26 For more information, please visit the following link: Consulta del Registro Estatal de Formación Profesional. MEFPD

27 For more information, please visit the following link: Acreditación de Competencias Profesionales - TodoFP | MEFPD

Another key stakeholder are **VET centres**, which deliver training and adapt their teaching approaches to the micro-credential model. For Grade A short training units, they operate within the curriculum and conditions established by the competent authorities, while retaining scope to adapt delivery and organisation to participants' needs.

Finally, **employers' organisations and trade unions** participate in governance and in identifying skills needs. Employers' organisations contribute information on industry requirements, while trade unions represent workers' perspectives and their upskilling and reskilling needs. Their participation can inform the planning and updating of training provision.

3.3. Assessment of the Current Situation

Recent VET developments indicate that Spain has chosen not to create a separate micro-credential system, but to **integrate the underlying principles into the design of its VET system**.

Grade A micro-trainings and their associated accreditations currently represent the closest equivalent to micro-credentials. Therefore, this approach places micro-trainings within a coherent structure of professional qualifications and accredited skills; learning acquired at particular stages of working life can thus contribute to broader learning pathways and progressively lead to higher-level certificates and qualifications.

However, simply dividing existing formal programmes into smaller units risks undermining the purpose of micro-credentials: responding to labour market needs rather than merely offering fragments of existing qualifications. The main **challenge** for VET is therefore to translate this modular structure into **relevant, up-to-date provision**. Skills needs identified with industry and social partners must inform the planning and updating of short training units, while their links to broader qualification pathways are maintained.

4. Higher Education

Spanish HE is mainly organised around official Bachelor's, Master's and Doctoral degrees, which constitute the formal levels of university qualification recognised within the European Higher Education Area[28]. Micro-credentials have become **increasingly important** in European university policy as a means of promoting lifelong learning and responding to skills development needs.

4.1. Micro-credentials in Higher Education: Current Regulation and Strategic Instruments

In Spain, university micro-credentials are expressly recognised in Higher Education legislation. Their regulatory basis rests on two instruments.

The first is **Organic Law 2/2023 on the University System (LOSU)**, which explicitly establishes lifelong learning as an essential university function (Head of State, 2023). It recognises micro-credentials and other short programmes as ways of fulfilling this function, extending universities' activities beyond initial undergraduate and postgraduate education. Article 7 provides

28 For more information, please visit the following link: Educación superior - European Education Area

for lifelong learning through different forms of provision, including micro-credentials, micro-modules and other short programmes.

The second is **Royal Decree 822/2021**, which provides an operational definition of micro-credentials and establishes their place within university provision in Article 37:

> […] universities may offer institution-specific courses carrying fewer than 15 ECTS credits, with or without a prior university degree as an entry requirement, in the form of micro-credentials or micro-modules certifying learning outcomes from short training activities. These courses must not be confused with qualifications offered by intermediate or higher-level VET centres. (Ministry of Science, Innovation and Universities, 2021, p. 27; translated)

This definition places micro-credentials in a category distinct from official Bachelor's, Master's and Doctoral degrees. Their purpose is not to replace traditional qualifications but to c**omplement university provision** by certifying learning outcomes through flexible, modular and cumulative programmes adapted to specific skills needs.

The incorporation of micro-credentials into legislation, identified by the OECD (2023) as good practice, has been accompanied by specific policy instruments. These include the **Action Plan for the Development of University Micro-credentials in Spain** (also known as the Microcreds Plan), introduced by the former Ministry of Universities with funding under the Recovery, Transformation and Resilience Plan. This is the main strategic framework for implementing micro-credentials in Spanish universities and sets out five objectives (Ministry of Universities, 2023):

- Promoting lifelong learning.
- Transforming universities into institutions accessible to all ages.
- Offering micro-credentials with educational and employment impact.
- Guaranteeing adults access to new learning opportunities.
- Supporting the development of personalised learning pathways.

A distinctive feature of Spanish HE is the **Skills Intelligence Strategy for Higher Education**[29], promoted by the Ministry of Science, Innovation and Universities, the main responsible authority. The Strategy defines skills intelligence as the systematic collection, analysis and use of information on labour market skills demand to inform academic decisions and improve the relevance of training provision (Ministry of Science, Innovation and Universities, 2025). Thus, it aims to strengthen HE institutions' capacity to anticipate trends, identify emerging skills needs and adapt programmes to green, digital and social transformations.

The Strategy is complemented by a **Skills Intelligence Toolkit**[30], which provides HE institutions with tools for continuous labour market monitoring and a methodology for identifying skills needs and developing micro-credentials in response.

29 For more information, please visit the following link: Estrategia de inteligencia de competencias para la educación superior que de soporte en el diseño de microcredenciales

30 For more information, please visit the following link: Estrategia de Inteligencia de Competencias para la Educación Superior

Micro-credentials are therefore considered **particularly suitable for responding quickly to emerging skills demand**. The Strategy emphasises that their design should draw on ongoing labour market monitoring and closer relationships between universities, employers and public authorities; nonetheless, their usefulness will depend substantially on institutions' ability to establish sustained collaboration with employers and industry, incorporating identified skills needs into new provision.

HE institutions are also working with the Conference of Rectors of Spanish Universities (CRUE) and the University Network of Postgraduate Studies and Lifelong Learning (RUEPEP) to **establish shared foundations and a common understanding of micro-credentials**, following an approach similar to Ireland's. Micro-credentials regularly feature on RUEPEP technical conference agendas, and dedicated working groups have been established. The CRUE-RUEPEP Working Group's (2024) **Guidelines for the design and accreditation of university micro-credentials**[31] identify common principles for definition, quality assurance and alignment with employment, alongside recommendations for improvement. A key consideration is the relationship between university micro-credentials and the Spanish Qualifications Framework for Higher Education (MECES).

4.2. Governance: Key Stakeholders

The main institutional actor in the development of university micro-credentials is the **Ministry of Science, Innovation and Universities (MICIU)**. Its functions include the definition of the strategic framework, the promotion of financing instruments, coordination between administrations and the promotion of initiatives within the scope of HE.

HE institutions are central to the model. Both the LOSU and the Microcreds Plan assign them responsibility for developing lifelong learning provision and integrating micro-credentials into institutional strategies. They exchange knowledge and coordinate their work through bodies such as the Conference of Rectors of Spanish Universities (CRUE) and the University Network of Postgraduate Studies and Lifelong Learning (**RUEPEP**).

The Autonomous Communities also play an important role in funding and the oversight and implementation of HE policy. Current support for micro-credentials comes principally from the Microcreds Plan, with €50 million in NextGenerationEU funding for university provision, student support and engagement with industry. The Autonomous Communities are responsible for transferring and distributing these funds within their respective areas of responsibility.

The **National Agency for Quality Assessment and Accreditation** (ANECA) and the **Spanish Network of University Quality Assurance Agencies** play prominent roles in quality assurance. The Skills Intelligence Strategy proposes integrating micro-credentials more fully into universities' internal quality assurance systems and developing evaluation procedures tailored to this provision. In this context, micro-credentials certify specific, verifiable learning outcomes that can be accumulated and transferred. They are issued by universities under quality criteria aligned with the Standards and Guidelines for Quality Assurance in the European Higher Education Area, ANECA's criteria and those of the Autonomous Communities' evaluation agencies.

Moreover, ANECA (2022) has also undertaken to promote and assure micro-credential quality beyond universities, encompassing interested institutions and organisations such as public authorities, employers, social partners, etc. It calls for **internal and external quality assurance** procedures that are clearly documented, accessible, responsive to stakeholders' needs and

31 For more information, please visit the following link: orientaciones_microcredenciales__1.pdf

expectations, and aligned with European reference standards and the frameworks applicable to each field.

4.3. Assessment of the Current Situation

Spain already has a **specific regulatory framework and public strategy** for consolidating micro-credentials within universities' lifelong learning provision.

The current priority appears to be less about creating new legal categories than strengthening governance arrangements that bring HE's objectives and language closer to employers' needs. Responsive quality assurance and skills intelligence are also necessary to connect university activities more effectively with society's and the labour market's skills requirements. In this context, **micro-credentials are a key instrument** for extending lifelong learning in Spanish HE, broadening institutions' traditional role and supporting more flexible, specialised responses to emerging demand.

A central **challenge** is ensuring the model's **sustainability** after European funding ends by strengthening dedicated funding arrangements. Established university micro-credential models illustrate the role of employers in co-financing design and providing scholarships or tuition fee discounts for unemployed or vulnerable learners, reducing reliance on learner self-funding. They also highlight opportunities to supplement public funding with HE institutions' own resources.

5. Vocational training for employment

In Spain, micro-credential development within Training for Employment builds on existing policies and structures in the **National Employment System**, rather than starting from scratch. These include instruments for identifying training needs, planning provision, career guidance and training registers, as well as participatory governance arrangements involving public authorities and social partners.

Micro-credentials in Training for Employment share with the other areas the aim of certifying specific learning and supporting flexible lifelong learning pathways. However, their design places **greater emphasis on immediate labour market adaptation** and continuous professional skills development. This reflects the **job-matching role** of Training for Employment stakeholders, with particular attention to jobseekers and persons requiring additional support, including people with low qualifications and older workers.

A central feature is the emphasis on **sectoral and cross-sectoral social dialogue**. Both the European Recommendation and Spanish regulatory developments stress the active involvement of employers' organisations and trade unions in identifying training needs and designing micro-credentials, helping connect provision with industry requirements. These organisations thus play a central role in identifying skills needs, designing content, setting sectoral priorities and supporting the relevance and usefulness of micro-credentials.

5.1. Micro-credentials in Training for Employment: Current Regulation and Strategic Instruments

Royal Decree 438/2024 develops Law 3/2023 on Employment and establishes that micro-credentials in the field of Training for Employment must be designed and agreed through

mechanisms of social dialogue between representative organisations of employers and workers. Likewise, the regulation provides that these micro-credentials should not be linked to the National Catalogue of Professional Competence Standards, thus differentiating them from the accreditations regulated within the VET System. In addition, the sixth additional provision of Royal Decree 438/2024 establishes the definition of micro-credentials for lifelong learning and employability:

> […] micro-credentials providing specific knowledge, skills and competences to meet work-related or personal needs and support progression in a changing labour market and society are to be developed within the framework of Training for Employment. Development must respect the allocation of responsibilities across Training for Employment, Vocational Education and Training and Higher Education. Within the Training for Employment system, micro-credentials designed and agreed by employer and worker representatives through social dialogue must not be linked to the National Catalogue of Competence Standards and, consequently, the Vocational Education and Training System. Public and private providers may issue them, including employers, social partners, professional associations, universities, private training providers, local authorities, and research and innovation organisations. (Ministry of Labour and Social Economy, 2024, pp. 40–41; translated)

This approach reflects a fundamental principle of both the European Recommendation and analyses of implementation in Spain: micro-credentials should respond directly to employers' actual needs, consistent with Public Employment Services' job-matching role.

In the Training for Employment, one of the most relevant aspects of the Spanish model is the existence of various instruments that have characteristics compatible with the principles established by the European Union for micro-credentials.

A key instrument is the **Catalogue of Training Specialities**[32]. It brings together National Employment System provision and information on associated skills, delivery modes, technical requirements and assessment criteria. It also provides for continuous updating in response to identified labour market needs, offering a potential route for identifying and incorporating micro-credentials within Training for Employment.

Another essential resource is the **State Register of Training Providers**[33]. It establishes requirements for providers authorised to deliver training specialities and records information on centres, online training platforms, quality indicators, and monitoring and control arrangements. These features align with the quality and transparency principles promoted by the European Recommendation.

The **Spanish Strategy for Active Support for Employment 2021–2024**[34] and its successor for **2025–2028**[35] also provide for a single personalised employment record integrating public employment service users' employment and training information. This could potentially support a future ILA recording micro-credentials obtained throughout each person's working and learning life.

32 For more information, please visit the following link: Catálogo de Especialidades Formativas | Servicio Público de Empleo Estatal

33 For more information, please visit the following link: Registro Estatal de Entidades de Formación

34 For more information, please visit the following link: Disposición 20185 del BOE núm. 292 de 2021

35 For more information, please visit the following link: Disposición 14693 del BOE núm. 170 de 2025

These instruments show that a large part of the infrastructure necessary for the development of micro-credentials already exists within the National Employment System, although their specific adaptation to this new approach continues to be an evolving process.

5.2. Governance: Key Stakeholders

Within Training for Employment, the **Ministry of Labour and Social Economy and the State Public Employment Service (SEPE)** provide policy direction, coordination and national-level management within their respective responsibilities, alongside regional authorities responsible for implementation in their territories. In coordination with regional Public Employment Services (PES), SEPE contributes to planning, funding and evaluating Training for Employment and analysing skills needs. These activities connect with career guidance, employability support and job matching between employers and jobseekers.

SEPE's instruments include the Occupations Observatory, which analyses labour market developments, occupational profiles and trends, and training needs across economic sectors. Its findings can inform skills needs identification and the design of training activities, including those that could lead to micro-credentials.

The **Autonomous Communities** also play a fundamental governance role. They contribute to identifying and anticipating training needs, updating provision and planning active labour market policies, generally in coordination with social partners and other sectoral stakeholders.

Another relevant stakeholder is the **Network of Guidance, Entrepreneurship and Innovation Centres for Employment (COE)**, established under the Spanish Strategy for Active Support for Employment 2021–2024. These centres support career guidance, innovation in active labour market policies and training for guidance practitioners. They can help jobseekers and employers understand and use training opportunities, including micro-credentials, to improve employability.

Last but not least, the S**tate Foundation for Training in Employment (FUNDAE)** also plays a key role. As SEPE's partner in Training for Employment, it has extensive experience in continuing training programme management and a tripartite governance model involving public authorities, employers' organisations and trade unions. This experience gives it substantial technical capacity to support future employment-oriented micro-credential systems.

5.3. Assessment of the Current Situation

Training for Employment has a regulatory framework that **provides for micro-credential development**, alongside labour market analysis, guidance, planning and training registration instruments that could support implementation. Established National Employment System structures also facilitate social dialogue and job matching. However, the existence of these resources does not in itself demonstrate a consolidated micro-credential model, effective implementation or measurable results.

The main **challenge** is therefore clarifying how skills needs identified through labour market analysis and social dialogue translate into micro-credential design. Their relationship with existing instruments and the applicable quality and recognition conditions also need clarification. Compared with the other areas examined, evidence of implementation progress in Training for Employment remains limited.

6. Conclusions

Skills have become a **priority on European and national policy agendas** in recent years. It has been noted that micro-credentials can complement formal education and training systems – which often struggle to respond quickly to skills mismatches and anticipate rapid labour market change – by offering a **flexible response to evolving skills needs** without replacing traditional qualifications and learning pathways, and can support employability and career progression.

Micro-credentials offer potential benefits for both learners and employers. On one hand, they can help professionals improve employability and access employment and learning opportunities through delivery modes compatible with work and personal commitments. On the other hand, they can help employers identify and recruit workers whose verified skills match their requirements. Moreover, recognising professional skills and experience within lifelong learning can strengthen cooperation between education providers and the labour market, helping keep training content current and responsive to demand.

Nonetheless, challenges remain, including formal recognition, integration into established education, training and employment systems, and continuing scepticism among some stakeholders. Effective implementation in Spain will therefore depend on the following **success factors**:

1. **Harmonisation of regulation across education and training areas.** Spain already has regulatory frameworks, but further coherence at national and European levels is needed to support recognition and portability. Greater consistency between areas can prevent parallel systems from developing independently and instead promote complementarity.

2. **Awareness of existing resources.** A key challenge is integrating and simplifying existing instruments rather than creating an entirely new micro-credential system. This requires coordination of employment, VET and HE policies across national and regional authorities, and facilitating access to a common register of quality-assured provision. The Irish experience also offers a useful example of coordinated communication that brings information and resources together in an accessible, easily navigable format.

3. **Integrated ecosystem with shared governance.** Micro-credentials can be issued by diverse providers across learning settings and encourage collaboration between education and employment stakeholders. Stronger partnerships, safeguards, incentives and channels for dialogue with employers and social partners can support recognition and strengthen providers' design and delivery capacities. Shared criteria are essential for comparability, portability and stackability, avoiding fragmented provision of unequal value. Integration into education and employment systems consequently requires sustained cooperation to ensure that micro-credentials address verifiable needs and retain academic and professional value while formal recognition challenges are resolved.

4. **Trust through transparency and verifiable quality.** Responsive, relevant quality assurance criteria are necessary to establish credibility and enable comparison in an increasingly skills-based labour market. Consistent, transparent assessment and continuous labour market monitoring can support the usefulness and credibility of credentials. Standardisation must nevertheless preserve flexibility and responsiveness rather than impose undue rigidity. Thus, quality criteria should assess how effectively micro-credentials meet labour market needs and may include both ex ante and ex post evaluation.

5. **Continuous monitoring of skills demand.** Rapid occupational change requires ongoing labour market monitoring and anticipation mechanisms that can translate changing skills demand into micro-credential design and updates promptly. As such, skills intelligence must be systematically connected with learning outcomes and provision design, enabling flexible responses to emerging upskilling and reskilling needs.

6. **Sustainability and scalability of lifelong learning.** Sustainable micro-credential development depends on recognition and acceptance by employers and potential learners, as well as stable funding with an appropriate distribution of responsibility among authorities, providers, employers and learners. However, safeguards shall be in place so as such expansion does not compromise quality, relevance or equitable access.

7. **Portability and stackability of micro-credentials.** Their value depends substantially on recognition and usefulness beyond the issuing institution or system, and on whether they can be combined into coherent, progressive learning pathways. This requires interoperability across lifelong learning systems, shared learning outcome recognition criteria, alignment with qualification levels and credits, and, where appropriate, accumulation towards broader certifications. The aim is to prevent isolated credentials and support their transferable, cumulative value. More significantly, a common European or national language that makes this value clear to learners, providers and employers would support use and acceptance.

With the European Commission's support and the commitment of Spain's lifelong learning authorities, **micro-credentials are expected to be part of future education, training and employment provision**. Lifelong learning must nevertheless build on basic skills acquired through compulsory education, allowing micro-credentials to support adult professional specialisation while complementing formal systems.

This approach places micro-credentials within a broader understanding of lifelong learning. In broad terms, micro-credentials initiatives increasingly recognise that **skills and human capital policy are closely linked** to industrial policy, mobility and migration, labour market performance and long-term competitiveness. Employers and social partners consequently have a central role in identifying skills needs and developing effective training responses.

In an **increasingly skills-focused labour market**, opportunities to acquire and certify skills can support employability and alignment with digital, green and social needs. Micro-credentials' eventual success will nevertheless depend substantially on employers' and learners' recognition of their value. **Unresolved questions** must be addressed as implementation progresses, particularly around stackability and pathways spanning different systems; the balance between flexibility and quality regulation; sustainable funding; and interoperable, portable digital credentials across Europe.

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