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EDUCATION, TRAINING AND LABOUR

Edited by
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5. THE EVOLUTION OF MICROCREDENTIALS WITHIN ITALY'S CONTINUING VOCATIONAL TRAINING SYSTEM: REGULATORY ADVANCES AND SOCIAL IMPLICATIONS

by Alessandra Pedone*

Abstract: Questo saggio si basa su studi analitici condotti nell'ambito della ricerca istituzionale di INAPP sulla formazione continua e lo sviluppo delle competenze. Esamina l'evoluzione delle microcredenziali in Italia (2023–2025), evidenziandone l'integrazione nei percorsi di apprendimento permanente, nei sistemi di certificazione delle competenze, nelle politiche attive per il mercato del lavoro e nelle strategie di inclusione sociale. Il saggio discute i progressi normativi e le loro implicazioni per le politiche e le pratiche.

Parole chiave: microcredenziali, apprendimento permanente, formazione continua, competenze, inclusione, assicurazione della qualità.

Abstract: This essay builds upon analytical studies conducted within INAPP's institutional research on continuing training and skills development. It examines the evolution of microcredentials in Italy (2023–2025), highlighting their integration into lifelong learning, skills certification systems, active labour market policies, and social inclusion strategies. The essay discusses regulatory advances and their implications for policy and practice.

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Keywords: microcredentials, lifelong learning, continuing training, competences, inclusion, quality assurance.

Introduction

In recent years, the introduction of microcredentials has reshaped the landscape of continuing vocational education and training (CVET) and the validation of competences. In alignment with EU guidelines on microcredentials, and pursuant to recent national regulations, Italy has established a comprehensive regulatory framework that integrates them, as microqualifications, into the National Qualifications Framework NQF¹ and the National Skills Certification System² (SNCC), thus extending formal certification to training programmes funded by Interprofessional Funds³.

This article builds upon institutional research conducted within the National Institute for Public Policy Analysis (INAPP) on continuing vocational training, skills development, and competence certification. The empirical basis of the analysis consists of a structured body of institutional evidence produced between 2023 and 2025, including regulatory acts, implementation guidelines, technical documentation related to the National System for the Certification of Competences, monitoring reports, and analytical outputs developed in support of national and regional policy processes.

Methodologically, the article adopts a qualitative and

¹ More details on Cedefop: <https://www.cedefop.europa.eu/en/tools/timeline-vet-policies-europe/search/28676> (Last seen on 31 March 2026).

² More details on INAPP: <https://www.inapp.gov.it/atlantelavoro/sistema-nazionale-di-certificazione-delle-competenze/> (Last seen on 31 March 2026).

³ More details on Cedefop: <https://www.cedefop.europa.eu/en/tools/financing-adult-learning-db/search/interprofessional-funds> (Last seen on 31 March 2026).

interpretative policy-analysis approach. Rather than testing causal relationships or measuring outcomes at the individual level, it examines how microcredentials are conceptualised, regulated, and operationalised within the Italian lifelong learning system. The analysis focuses on governance arrangements, certification mechanisms, and digital infrastructures, drawing on documentary analysis and institutional knowledge generated through INAPP's role in technical support, coordination and policy monitoring.

On this basis, the article interprets microcredentials as institutional instruments that reshape assessment and recognition practices, rather than as standalone pedagogical innovations. It explores how microcredentials contribute to quality assurance, transparency and inclusion by enabling modular and digitally certified learning pathways within regulated public frameworks. In doing so, the article situates microcredentials at the intersection of innovation, the right to training, and social cohesion, while acknowledging that its scope is limited to institutional and governance dimensions rather than individual learning outcomes (Pouliou, 2025).

The growing emphasis on skills development (Fonzo e Evangelista, 2025), digitalisation (Pedone, 2021; Tuomi *et al.*, 2023), and inclusion (OECD, 2019; Angotti e Di Castro, 2024), has transformed the debate on continuing vocational education and training (CVET) in Europe (Cedefop, 2023), and in Italy. Over the last decade, the intersection between education, labour, and social policies has become increasingly defined by the need to make learning more flexible, visible, and institutionally portable through recognised certification frameworks (Kato *et al.*, 2020).

In this context, it is important to distinguish analytically between portability and mobility, two concepts that are closely related but not interchangeable. Portability refers to a property of credentials: the capacity of certified learning outcomes to be formally

recognised, verified, and reused across institutional, sectoral, or territorial contexts through shared standards, qualification frameworks, and interoperable certification systems. Mobility, by contrast, concerns the actual movement of individuals across educational pathways, labour market positions, or geographical spaces. While enhanced portability can reduce recognition barriers and support mobility, it does not in itself determine learner trajectories, which remain shaped by broader institutional, economic, and social conditions. Maintaining this distinction allows microcredentials to be analysed as instruments of governance and recognition, without overstating their effects on individual mobility.

Within this context, microcredentials have emerged as a key policy innovation. They represent a tangible response to the call for transparency, individualisation of learning, and integration between formal, non-formal, and informal learning pathways.

The implementation of microcredentials coincides with broader structural reforms in Italy aimed at modernising the national lifelong learning system (Ciucciiovino, 2025) and addressing persistent skill mismatches in the labour market. The Ministerial Decree of 15 June 2023, which adopted the *Italian Referencing Report of Qualifications to the European Qualifications Framework (EQF)*, formally introduced the concept of *microqualifications* within the National Qualifications Framework (Mostarda, 2025). Subsequently, the Ministerial Decree of 9 July 2024⁴ extended the certification framework to microqualifications under the responsibility of the Ministry of Labour and Social Policies, defining their governance, quality standards, and digital certification procedures. Together, these reforms mark a significant step in bridging policy, institutional, and operational dimensions of lifelong

⁴ Decree of the Minister of Labour and Social Policies dated 9 July 2024 - Regulation of Services for the Identification, Validation, and Certification of Competences Related to Qualifications under the Ministry of Labour and Social Policies.

learning in Italy.

While microcredentials have been extensively discussed in the context of higher education (OECD, 2021; Martin e van der Hijden, 2023; Bruschi, 2024; Sanchez Barrioluengo, 2025), and international quality frameworks, the Italian experience offers an opportunity to explore their implementation in a broader ecosystem, one that includes interprofessional training funds, regional qualification systems, and active labour market measures. The Italian case illustrates how micro-credentials function as a strategic mechanism for bridging education and employment by validating competencies acquired through formal, non-formal, and work-based learning in alignment with national standards, while simultaneously embedding lifelong learning within broader processes of public sector digitalisation. In this perspective, digital infrastructures such as the “Fascicolo Sociale e Lavorativo del Cittadino” (FSL⁵), originally conceived as the “Fascicolo Elettronico del Lavoratore” under Article 15 of Legislative Decree 150/2015⁶ and subsequently expanded through “Decreto Sicurezza 2025” (Decree-Law 159/2025) and PNRR-funded interventions, together with platforms such as SIISL⁷ and AppLI, exemplify an integrated ecosystem that supports the recognition, portability, and transparency of learning outcomes.

Beyond regulatory alignment, microcredentials in Italy are increasingly associated with social inclusion policies. National strategies such as the Piano Nuove Competenze – Transizioni, GOL⁸

⁵ Citizen’s Social and Employment Record <https://www.lavoro.gov.it/stampa-e-media/comunicati/pagine/fascicolo-sociale-e-lavorativo-del-cittadino-raggiunta-prima-milestone>.

⁶ Electronic Worker File.

⁷ Platform of the Information System for Social and Employment Inclusion (SIISL) <https://www.lavoro.gov.it/g7-labour/nuove-misure-inclusione-e-accesso-lavoro/supporto-la-formazione-e-il-lavoro>.

⁸ New Skills-Transitions Plan and Employability guarantee reform programme (GOL) <https://www.cedefop.europa.eu/en/tools/timeline-vet-policies-europe/search/28319>.

and Crescere Green⁹ pilot project financed under REPowerEU¹⁰, explicitly promote microcredentials as tools to facilitate participation in lifelong learning for disadvantaged and low-skilled adults. Through short, modular, and flexible pathways, microcredentials could contribute to re-engaging individuals who are often excluded from traditional education systems, supporting both employability and civic empowerment.

From a pedagogical perspective, this evolution aligns with key adult learning theories, including social constructivism (Wenger, 1998), andragogy (Knowles, 1980), heutagogy (Hase e Kenyon, 2000), and connectivism (Siemens, 2005), as well as transformative learning (Mezirow, 1991) principles within digital societies.

Microcredentials reflect ongoing transformations in how learning is assessed, recognised, and made visible across the life course. Rather than signalling a shift from teaching to learning or from formal institutions to loosely defined learning ecosystems, they operate within existing educational and training systems, reshaping the ways in which learning outcomes are documented, validated, and mobilised. Their distinctive contribution lies in the increased granularity of learning recognition and in the reconfiguration of credentialing mechanisms, which allow competences acquired in diverse contexts to be formally assessed and certified within regulated frameworks. In this sense, microcredentials constitute an epistemological and institutional innovation in the recognition of learning, one that is technologically enabled but not technologically defined, and that complements established educational and certification structures (Pouliou, 2024).

⁹ Crescere Green - Pilot Project on Green Skills <https://www.lavoro.gov.it/strumenti-e-servizi/attuazione-interventi-pnrr/pagine/m7>.

¹⁰ <https://www.italiadomani.gov.it/content/sogei-ng/it/it/il-piano/missioni-pnrr/repowereu.html>.

The objective of this essay is therefore to analyse the Italian framework for microqualifications as a case study of how policy, quality assurance, and inclusion intersect in the governance of lifelong learning. Drawing upon INAPP's empirical and institutional evidence, it argues that microcredentials can serve as a cornerstone for the future of continuing training, provided that quality, accessibility, and recognition are ensured through coherent governance and strong digital infrastructures. The analysis also contributes to the European debate on how microcredentials can enhance the transparency and comparability of learning outcomes (Cedefop, 2022) across education and labour systems, reinforcing the right to lifelong learning as a key dimension of social citizenship in the knowledge society.

1. The European policy background

At the European level, the emergence of microcredentials reflects a paradigm shift in how learning is conceptualised, validated, and recognised (Markowitsch e Bjørnavold, 2022).

The Council Recommendation of 16 June 2022 on a European approach to microcredentials for lifelong learning and employability established a shared definition and set of quality principles aimed at improving the comparability, transparency and trustworthiness of short learning experiences across Member States. This Recommendation situates microcredentials within the broader objectives of the European Skills Agenda (2020) and the Pact for Skills (2020), both of which emphasise the urgency of ensuring that adults have continuous opportunities to update and formally certify their competences throughout their working life.

According to the European framework, a microcredential certifies the learning outcomes acquired through a short learning

experience that is transparently documented, quality assured, and referenced to common standards such as the European Qualifications Framework (EQF) and the European Credit System for Vocational Education and Training (ECVET). The policy objective is to make learning modular and cumulative, enabling the accumulation and formal recognition of learning outcomes across education, vocational training, and labour market contexts.

Within this vision, microcredentials function as *bridging mechanisms* between education and employment, enhancing transparency, recognition, and the portability of certified learning outcomes across institutional and territorial systems. While such portability can facilitate learner mobility between formal education, vocational training, and employment, mobility itself remains contingent upon broader socio-economic, institutional and regulatory conditions.

Microcredentials, therefore, contribute primarily by strengthening recognition infrastructures rather than directly determining individual mobility trajectories. They embody the European commitment to lifelong learning as a social right, rather than merely an opportunity contingent on individual circumstances.

In the European context, although microcredentials have been extensively discussed within higher education policy frameworks, Cedefop's broader mapping of their role in labour-market-oriented education highlights their expanding relevance within vocational education and training (VET) and upskilling ecosystems. Empirical analyses, such as McCoshan's (2023) case study, underscore how microcredentials are increasingly embedded in active labour market policies and continuing training strategies across Europe.

2. The Italian regulatory evolution

In Italy, the integration of microcredentials into the national qualifications system has followed a gradual but significant trajectory. Initially absent from national legislation, the concept has been progressively introduced under the term *microqualificazioni* (microqualifications).

The Ministerial Decree of 15 June 2023 marked a milestone by incorporating microqualifications into the Italian Referencing Report of Qualifications to the EQF:

«In line with current national legislation and EU guidelines on microcredentials, this Report defines micro-qualifications as: qualifications composed of one or more competences that form part of broader qualifications, issued within the SNCC following short-duration pathways, which may also be flexible, personalised, and modular».

This definition explicitly aligns with the European Council Recommendation, while reflecting the Italian institutional architecture of the Sistema Nazionale di Certificazione delle Competenze (SNCC). The Decree recognises that continuing vocational training, especially that financed by Interprofessional Funds or company-level initiatives, had long lacked a national or regional framework of qualifications referable to the QNQ/EQF. The inclusion of microqualifications therefore represents a structural innovation, bringing together previously fragmented systems of certification under a shared national logic of competence-based recognition.

A second crucial step came with the Ministerial Decree of 9 July 2024, which regulated the services for the identification, validation and certification (IVC) of competences relating to qualifications under the responsibility of the Ministry of Labour and

Social Policies. The Decree operationalised the concept of microqualifications by extending certification procedures to the continuing training system managed by the Interprofessional Funds.

Under this regulation, the Funds are recognised as delegated entitled entities empowered to provide IVC services, in coordination with accredited training organisations and regional systems. They must adapt their internal regulations to define the “conditions for the provision and guarantee” of IVC services, in line with the national standards of the SNCC. Certification must follow digital and quality-assured procedures, using open digital formats and the Electronic Worker’s File (Fascicolo Elettronico del Lavoratore) to store and validate certificates (Ciucciovino *et al.*, 2021).

This innovation not only aligns the continuing training system with the principles of the national qualifications framework but also enhances the traceability and transparency of lifelong learning achievements, a cornerstone of quality assurance in adult learning.

2.1 Integration with regional systems and active labour market policies

Beyond ministerial decrees, regional authorities have been progressively incorporating microqualifications into their own training repertoires. Many regional catalogues now include modular units corresponding to microqualifications that can be separately certified and referenced within the Repertorio Nazionale dei Titoli di Istruzione e Formazione e delle Qualificazioni Professionali. The national framework provides the criteria for EQF/QNQ referencing, specifying that microqualifications may have a level “0”, a sub-classification indicating that they comprise one or more competences forming parts of broader qualifications.

This flexible architecture allows regions to integrate microqualifications into short vocational programmes and continuing training measures co-financed by the European Social Fund Plus (ESF+). It also facilitates alignment with active labour market policies such as GOL – Garanzia di Occupabilità dei Lavoratori and SFL – Support for Training and Work, where modular, short-cycle learning units are recognised as valid training outcomes.

By connecting microqualifications to programmes such as Piano Nuove Competenze – Transizioni (2024) and Crescere Green (2025, under REPowerEU), Italy explicitly links lifelong learning with the twin transitions, green and digital, identified as national priorities. These initiatives finance short, competence-based training programmes that award microqualifications relevant to the evolving needs of the labour market. In doing so, they operationalise the idea of microcredentials as policy tools for employability, inclusion, and innovation.

The Fascicolo Sociale e Lavorativo del Cittadino (FSL), Initially designed as a repository of skills, qualifications, and professional trajectories within the SIU system, has recently evolved into a comprehensive national archive that systematically incorporates all training required under Legislative Decree 81/2008 on workplace safety, certifying workers' complete training records over the life course and enabling their verification by employers. Compared to the original 2015 configuration, which primarily focused on professional and educational data, the current FSL significantly broadens its scope to include information on social benefits, family conditions, and welfare services, also through integration with systems such as SIUSS (Sistema Informativo Unitario Servizi Sociali)¹¹, while introducing predictive analytics to

¹¹ Unified Information System for Social Services.

support labour market matching, under Italy's PNRR public administration digitalisation initiative. This citizen-centred architecture leverages interoperability via the National Digital Data Platform (PDND), e-services, and AI-enabled dashboards, replacing fragmented document-based practices with a unified and dynamic system. From an operational standpoint, courses, updates, certifications, and professional authorisations are consolidated into a single, continuously updated national record, allowing employers to accurately assess prior learning and identify targeted upskilling needs, while authorised access through institutional portals such as INPS and SIISL contributes to policy personalisation, administrative simplification, and reduced duplication across public administrations.

2.2 Governance, quality and interoperability

The governance of certification of competences in Italy is structured within the “Sistema Nazionale di Certificazione delle Competenze” (SNCC), a national framework established in 2013¹² and fully operational since 2021¹³, oriented to ensure transparency, portability and public recognition of competences acquired in formal, non-formal and informal learning contexts. The SNCC operates as a multi-level public governance system in which regulatory authority, technical standard-setting, and operational delivery are clearly differentiated and coordinated through formal institutional mechanisms.

¹² Legislative Decree No. 13 of 16 January 2013 - Definition of general rules and essential levels of performance for the identification and validation of non-formal and informal learning and minimum service standards of the national system for the certification of competences. (Official Journal No. 39 of 15-02-2013).

¹³ Decree of 5 January 2021 - Provisions for the adoption of guidelines for the interoperability of public bodies responsible for the national skills certification system. (21A00166) (Official Journal General Series no. 13 of 18-01-2021).

At the strategic and regulatory level, governance responsibilities are shared among national and regional public authorities with statutory competences in education, training and labour policies. These include the Ministry of Labour and Social Policies, the Ministry of Education and Merit, and the Ministry of University and Research, the Regions and autonomous provinces of Trento and Bolzano. Together, these actors define the legal and institutional framework of the system, establish minimum national standards for certification, and ensure coherence with European reference instruments.

A core component of this governance architecture is the National Qualifications Framework (QNQ), adopted in 2018¹⁴ and referenced to the European Qualifications Framework in 2023. The QNQ provides the formal structure for classifying qualifications within eight levels, defined in terms of knowledge, skills, autonomy and responsibility, and serves as the basis for cross-referencing national qualifications to European standards. Alongside the QNQ, the Atlas of Work and Qualifications¹⁵ constitutes the second pillar of the technical infrastructure underpinning the national repertory. The Atlas provides a shared taxonomy of work processes, activities and expected outcomes, developed at national level in collaboration with regional authorities and periodically updated.

Vertical coordination within the SNCC is ensured through binding inter-ministerial decrees, State–Regions agreements, and national technical guidelines that regulate the updating of the national repertory and the interoperability of awarding bodies. Qualifications included in the national repertory must comply with

¹⁴ Decree 8 January 2018 Establishment of the National Qualifications Framework issued under the National Skills Certification System pursuant to Legislative Decree No. 13 of January 16, 2013 (18A00411) (Official Journal General Series No. 20 of January 25, 2018).

¹⁵ More details on INAPP: <https://www.inapp.gov.it/atlantelavoro/> (last seen on 31st March 2026).

a set of compulsory elements, including reference to a public awarding authority, standardised competence descriptors, alignment with national and European qualification levels, and linkage to national statistical classifications of economic activities and occupations. These requirements ensure consistency and legal validity across different territorial and sectoral contexts.

At the technical-operational level, the development and updating of competences and qualifications follow a structured process combining technical investigation and institutional validation. Technical analysis is conducted by the INAPP, in collaboration with sectoral stakeholders and subject-matter experts and subsequently validated by a national technical group established under the 2015 decree¹⁶ and the 2021 interoperability guidelines. This arrangement separates evidence-based technical work from formal institutional decision-making, reinforcing transparency and accountability.

Horizontal accountability is embedded through shared technical standards and interoperable digital infrastructures. The descriptors of the Atlas of Work and Qualifications constitute the sole national benchmark for comparing qualifications issued by different public awarding bodies, thereby preventing fragmentation and ensuring mutual recognition across systems. All certification processes within the SNCC are required to comply with common quality principles, including independence of assessment, traceability of evidence, and consistency of outcomes.

Decision-making authority within the SNCC follows a hierarchical yet coordinated logic. Strategic decisions concerning system design, qualification standards and long-term development

¹⁶ Decree 30 June 2015 Definition of an operational framework for the national recognition of regional qualifications and related skills, within the National Register of Education and Training Qualifications and Professional Qualifications referred to in Article 8 of Legislative Decree No. 13 of 16 January 2013. (15A05469) (Official Journal General Series No. 166 of 20-07-2015).

are retained at the national and interinstitutional level, while regions and authorised bodies are responsible for implementation within their respective domains. Long-term responsibility for system integrity, coherence and European portability rests with public authorities at national level, supported by a consolidated technical infrastructure and formal coordination mechanisms. Thus, the SNCC constitutes a stable institutional framework that integrates decentralised implementation within a unified regulatory and technical architecture. By anchoring certification practices to shared standards, interoperable tools and clearly allocated responsibilities, the system ensures quality, comparability and public trust, while allowing responsiveness to territorial and sectoral labour market needs.

The Italian framework places particular emphasis on quality assurance and interoperability. Certification schemes are to be developed and adopted exclusively by public entities, primarily the Ministry of Labour, supported by INAPP and the technical group responsible for updating the National Repertory of Qualifications and the National EQF Coordination Point. All certificates must be digitally signed and stored according to the Codice dell'Amministrazione Digitale¹⁷, ensuring integrity, accessibility, and long-term preservation.

The Decree of 9 July 2024 also envisages the participation of enterprises, bilateral bodies, and accredited training providers as “entitled entities” authorised to deliver specific IVC services. This creates a multi-layered governance structure, combining national oversight with operational decentralisation, a design intended to guarantee both quality and responsiveness to local training needs.

Furthermore, the use of interoperable digital platforms such as the SIISL (Social and Labour Inclusion Information System)¹⁸ and

¹⁷ Digital Administration Code (Legislative Decree No. 82/2005).

¹⁸ More details on <https://www.lavoro.gov.it/>.

AppLI (AI platform - Labour Inclusion Application)¹⁹ connects individual learning records with employment services, enabling real-time validation and transparency of competences across institutions.

In this regard, Italy's model anticipates the integration of digital credentials and blockchain-ready verification systems, aligning with the European initiative on Digital Credentials for Learning (EDCI).

Overall, the Italian policy trajectory demonstrates a systemic approach: microcredentials are not treated as isolated educational products but as components of an integrated ecosystem linking formal, non-formal, and informal learning to national and European standards. The governance structure combines central coordination (ensuring coherence and quality) with delegated operational capacity (ensuring flexibility and responsiveness).

This dual logic, unity in principles, diversity in implementation, is what enables microcredentials to function as instruments of lifelong learning and social innovation. They reflect the evolution of adult learning policies from the traditional focus on training provision to a broader vision of learning rights, competence transparency, and active citizenship in a digital society.

Microcredentials play a dual role in promoting inclusion. First, they make learning accessible by reducing time, cost, and formal entry barriers, a crucial aspect for adults balancing work, family, and care responsibilities. Second, they increase recognition equity, allowing competencies acquired in informal or work-based contexts to be validated and certified.

Beyond technical definitions, the concept of "inclusion" has become central to Italy's lifelong learning policies. Microcredentials are explicitly framed as instruments to improve access to education

¹⁹ More details on: <https://appli.lavoro.gov.it/> (last seen on 31 March 2026).

and training for disadvantaged and underrepresented groups. The Piano Nuove Competenze – Transizioni (2024) formalised this link by prioritising training for vulnerable workers and those at risk of exclusion from digital and green transitions.

Programmes such as GOL – Garanzia di Occupabilità dei Lavoratori illustrate how modular training and certification pathways are being applied to social inclusion. By integrating microcredentials into the logic of active labour market policies, GOL enables unemployed, low-skilled, or older adults to obtain officially recognised competences that can be immediately valued in employment services. Similarly, EDO – Educazione Digitale per l’Occupazione offers short digital upskilling modules that are certified through microqualifications aligned with the DigComp framework (Cosgrove e Cachia, 2025). These initiatives demonstrate how the combination of flexibility, digitalisation, and validation supports re-entry into learning for groups historically marginalised by traditional education systems.

Although the microqualification system is still in an early phase of implementation, preliminary evidence gathered through INAPP’s monitoring of continuing training shows promising trends. Several sectoral initiatives have already adopted microcredentials as part of funded training schemes.

For instance, the Crescere Green Pilot Projects launched under REPowerEU in 2025 finance short, competence-based courses in green and circular economy sectors. These projects target unemployed individuals, GOL beneficiaries, and low-skilled adults, aiming to certify at least 20,000 learners with microcredentials by 2025. The modular structure allows participants to accumulate competences that can later be recognised within formal qualification frameworks.

Evaluation data from similar programmes (GOL, EDO) suggest three major potential benefits:

1. higher participation rates among vulnerable groups, particularly women, migrants, and older workers;
2. improved employability outcomes, with many beneficiaries securing re-entry into work or career advancement within months of certification;
3. enhanced trust among employers and training providers in digital and short-cycle certification mechanisms.

These outcomes confirm that microcredentials can operate as both a quality assurance mechanism, ensuring transparency and comparability, and a social inclusion instrument facilitating access and recognition for those most distant from formal education.

Despite the significant progress made in defining and operationalising microcredentials, the Italian system continues to face structural challenges that reflect its historically complex governance of education, training, and labour policies. The coexistence of multiple authorities, national ministries, regional governments, and Interprofessional Funds, ensures pluralism and responsiveness but also introduces risks of fragmentation.

This institutional complexity represents a significant challenge for the full integration of microcredentials into the national system, though its nature is neither uniform nor entirely structural. Regional differences primarily concern procedural arrangements and institutional capacities, including the sequencing of identification, validation and certification services, the accreditation criteria applied to training providers, and the organisational models through which certification functions are delivered. While these variations reflect constitutionally grounded regional competences, they are also partly transitional, linked to the gradual alignment of regional systems with nationally defined standards and recent regulatory updates. Additional constraints derive from uneven digital implementation rather than from the absence of a national digital framework. Differences persist in the

adoption and effective use of national and regional registers, interoperable information systems, and digital tools supporting certification, traceability and data exchange. These disparities affect the timing and consistency of implementation across territories, rather than the formal validity of microcredentials within the national system.

Ensuring coherence while preserving contextual flexibility, therefore, constitutes a key governance challenge for the coming years. Addressing this challenge requires not the further centralisation of competences, but sustained investment in coordination mechanisms, technical support and digital interoperability, so that regional diversity operates within a shared institutional and infrastructural framework. To ensure inclusion, certification services must be easily reachable by individuals outside formal education or stable employment. This requires coordination with Public Employment Services, career guidance networks, and social partners, along with the provision of digital tools (such as AppLI) for personalised orientation. In this sense, microcredentials become part of a broader ecosystem of lifelong learning services, rather than a stand-alone educational innovation.

3. Inclusion and equity in CVET and adult learning

In this article, inclusion is not understood solely in terms of access to learning opportunities or participation rates. Rather, it refers to the capacity of institutional arrangements to mitigate structural inequalities linked to socio-economic status, gender, age, migration background, and labour market segmentation. Inclusion therefore, entails addressing asymmetries of power that shape who is able to accumulate, demonstrate, and have competences recognised within formal systems. From this perspective,

microcredentials contribute to inclusion not merely by widening participation, but by reconfiguring recognition mechanisms in ways that reduce discriminatory barriers and enhance the visibility of competences acquired in diverse life and work contexts. Inclusion thus becomes a matter of institutional design and distributive justice, rather than a simple expansion of enrollment.

Within this framework, microcredentials provide an empirical field for rethinking learning rights in adult education. When combined with instruments such as individual learning accounts (ILAs), they can contribute to more inclusive adult learning ecosystems by reducing financial constraints while supporting personalised and cumulative competence development (Farkas, 2024). Importantly, such instruments affect not only access to training, but also the conditions under which learning is formally recognised and valued.

The digital and informational transformation of contemporary societies further reshapes learning as a continuous, distributed, and interconnected process. Microcredentials reflect this shift by enabling the recognition of competences acquired across multiple contexts and modalities, including work-based, non-formal, and informal learning (Peters *et al.*, 2025). Their inclusive potential, however, depends on how digital infrastructures and governance arrangements mediate visibility, legitimacy, and trust.

While policy discourse explicitly links microcredentials to inclusion (Council of the European Union, 2022), the implementation of inclusive measures remains uneven. This gap highlights the need to move beyond declarative commitments and to embed inclusion objectives more systematically within governance structures, funding mechanisms, and recognition practices.

INAPP's INDACO surveys on Continuing Training confirm a growing demand among enterprises for short, flexible, and outcome-

oriented learning pathways in Italy (INAPP, 2024). Companies participating in the surveys increasingly highlight the need for training that directly supports upskilling and reskilling, particularly in digital and green domains (INAPP, 2025). These findings align with the rise of microcredentials as a means to ensure quality and transparency while also enhancing the responsiveness of training provision to economic transformation, but disadvantaged groups, particularly low-qualified adults, still encounter barriers in accessing training (Angotti e Pedone, 2025).

These obstacles are not primarily regulatory but structural: digital divides, lack of awareness, and insufficient guidance persist. Although national platforms such as AppLI and SIISL provide digital access to learning opportunities, digital literacy remains a precondition that not all users possess. Without targeted outreach, microcredentials risk reproducing existing inequalities rather than mitigating them.

To translate inclusion into practice, policies must therefore be complemented by active support measures: personalised guidance, community-based counselling, and financial incentives. From a pedagogical standpoint, inclusion also means recognising and validating prior informal learning (Gauthier, 2020), particularly that acquired in precarious or unpaid work contexts. The new IVC framework offers this possibility, but its effectiveness will depend on how accessible and user-friendly these services are for individuals outside traditional training networks.

4. Towards a European learning ecosystem

The Italian experience must be interpreted within the broader European endeavour to build a shared learning ecosystem based on transparency, mobility, and lifelong learning rights. The

integration of microcredentials into national frameworks across Europe is fostering a new model of education, one that values competences as dynamic and portable, transcending institutional and geographical boundaries.

The dissemination of microcredentials is contributing to a broader cultural shift in how competencies are valued and communicated. They promote a shift from teaching-centred provision to learner-driven ecosystems, where adults can construct individual learning pathways responsive to their experiences, motivations, and life circumstances (European Commission, 2022).

This process enhances not only the visibility of individual competences but also the strategic capacity of enterprises to identify and anticipate skill needs. By embedding microcredentials into continuing training systems and lifelong learning, it could be possible to gradually build a shared language of competences across sectors, a precondition for effective labour market transitions and sustainable innovation.

In this sense, microcredentials serve as a social infrastructure for learning: they connect individuals, institutions, and employers through a common grammar of recognition. The challenge ahead is to consolidate this infrastructure through coherent governance, sustained investment in digital tools, and a renewed pedagogical focus on learning as transformation.

The success of microcredentials depends largely on the credibility and portability of the certificates they represent. The introduction of digital certification and interoperable databases offers a promising step forward, but full interoperability between national, regional, and European systems has yet to be achieved.

In this respect, quality assurance must extend beyond certification to include data protection, transparency of providers, and continuous monitoring of learning outcomes. Only by building trust in the reliability and comparability of microcredentials can the

system achieve both national recognition and European portability.

Conclusion

From a pedagogical standpoint, microcredentials embody the principles of andragogy and eutagogy, learning that is self-directed, experience-based, and oriented toward personal growth and social participation. They support adults not only in acquiring work-relevant skills (OECD, 2024) but also in enhancing their capacity for reflective learning and self-recognition.

This dimension is particularly relevant in the Italian context, where continuing training has long been characterised by asymmetries in access and quality. Microcredentials could help to rebalance these disparities by providing smaller, more attainable learning units that can act as gateways to further education and employment (OECD, 2023).

Moreover, by linking learning outcomes to digital credentialing systems, microcredentials enable learners to construct visible, portable records of their competencies, a process that strengthens personal agency and transparency. In this respect, they foster a new form of lifelong learning: the ability to participate actively in knowledge economies through recognised and validated learning.

Italy's experience offers potential to illustrate that microcredentials transcend mere administrative innovation, potentially embodying a learner-centred paradigm of modular, transparent, and continuous learning. This shift, both structural and cultural, would redefine lifelong learning as a dynamic, distributed ecosystem where competences are progressively built, validated, and shared across diverse contexts. Italy's contribution to this process lies in its effort to connect policy innovation with social

inclusion. By embedding microqualifications into active labour market policies and interprofessional training systems, the Italian model bridges the gap between the world of work and the world of learning.

Yet full realisation faces significant challenges: regional IVC procedures remain transitional with inconsistent quality standards, while low-skilled workers risk exclusion due to digital divides. Although the 2024 Decree envisions unified national certification schemes, implementation demands sustained technical support, IT interoperability, and targeted outreach to ensure accessibility for vulnerable groups.

Italy's approach, while coherent and ambitious, will require a sustained long-term strategy to fully integrate its digital systems with the European Learning Model and the Europass Digital Credentials Infrastructure (EDCI). This necessitates not only technical interoperability and data standardisation across national platforms like FSL and SIISL, but also harmonised quality assurance mechanisms and cross-border recognition protocols to ensure portability and credibility within the European Qualifications Framework (EQF).

Ultimately, the diffusion of microcredentials should be seen as part of a wider shift toward a culture of learning as a common good (UNESCO, 2020). In the face of technological transitions and social inequalities, lifelong learning can no longer be considered a private investment or an optional policy area; it must be treated as a shared responsibility that sustains democracy, innovation, and social cohesion.

The long-term vision is not merely administrative but cultural: a transition towards a society where learning is recognised as a continuous, networked, and shared responsibility. In this sense, microcredentials are not simply technical tools, they are social contracts for a more inclusive, transparent, and resilient

learning economy.

The analysis points to a coherent transformative continuum linking regulation and innovation, policy design and lived practice, access and empowerment. Microcredentials emerge not merely as technical devices, but as institutional instruments that connect individual learning trajectories with collective objectives of social and economic development. Through their integration into regulated certification systems, they redefine how learning beyond traditional boundaries is recognised, valued, and mobilised.

This reconfiguration contributes to the modernisation of lifelong learning governance and reaffirms its normative foundation. Learning is articulated not only as an individual opportunity, but as a public responsibility and a shared societal project, grounded in rights, relationships, and institutional trust. In this sense, microcredentials consolidate a vision of lifelong learning that combines flexibility with public accountability.

The consolidation of this model entails clearly defined responsibilities for public institutions, training providers, and social partners. Evidence from the current implementation phase demonstrates that sustained investment in digital infrastructures, organisational capacity, and quality assurance mechanisms is essential to ensure consistency and credibility across territories and sectors. Where such conditions are in place, microcredentials function as effective connectors between policy intentions and operational practices.

Maintaining a balance between adaptability and reliability remains a structural governance task rather than a contingent risk. Microcredentials derive their legitimacy from adherence to shared standards, transparent assessment procedures, and interoperable certification systems, while retaining the capacity to respond to diverse learning contexts and labour market dynamics.

Finally, inclusion constitutes a defining criterion for

evaluating the effectiveness of microcredentials. Their impact must be assessed not solely in quantitative terms, but in relation to their capacity to expand access to recognition for groups traditionally underrepresented in formal learning pathways, including low-qualified adults, migrants, women, and workers in transition. In this respect, microcredentials stand as a concrete institutional mechanism through which lifelong learning policies can translate principles of equity and social cohesion into practice.

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