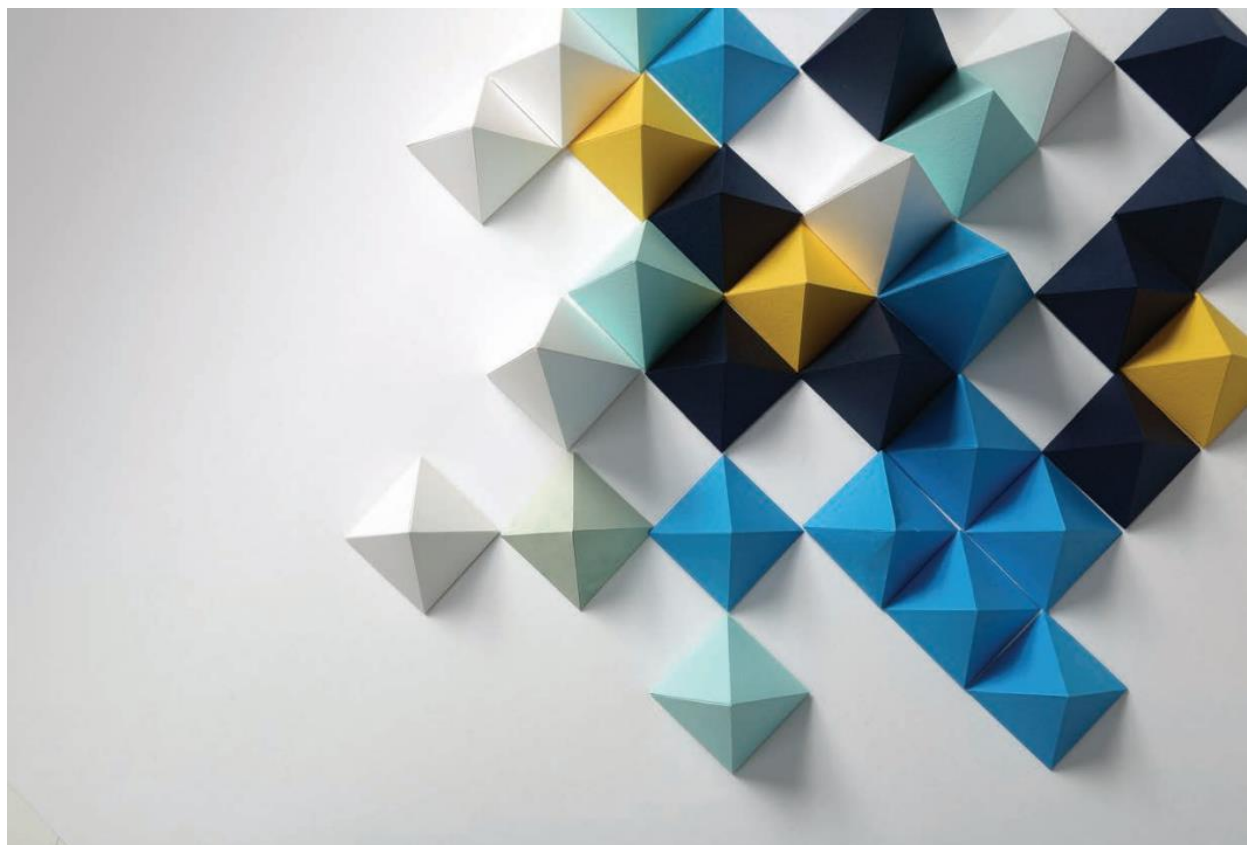




Public policies for effective micro-credential learning



About this paper

This OECD Education Policy Perspective serves as Part A in a two-part series of summary papers, published as part of the Micro-credentials Implementation Project, which ran from August 2022 to December 2023. This paper examines the evolving landscape of micro-credentials – a form of credential that individuals can earn upon the completion of organised learning activities that are smaller, more targeted, and more flexible than traditional education and training programmes – primarily in OECD countries. The paper focuses on the development of public policies that can foster effective utilisation of micro-credentials for lifelong learning, upskilling, and reskilling. The document is divided into two main sections, complemented by an Annex that provides a self-assessment tool for micro-credential policy implementation. Paper B, the following publication, presents case studies from the four European Union Member States that participated in the project – Finland, the Slovak Republic, Slovenia, and Spain (OECD, 2023^[1]).

The first section addresses the foundational elements necessary to create a thriving micro-credential ecosystem. It identifies key challenges related to supply and demand in the micro-credential landscape. In response to these challenges, the paper advocates efforts to create a cohesive ecosystem that integrates different stakeholders – education and training providers, public authorities, industries and society, and learners – to collaboratively address these issues and maximise the benefits of micro-credentials.

The second section offers an in-depth analysis of four critical policy instruments that serve as building blocks for creating a robust micro-credential ecosystem. These include regulations and guidelines for providers, public funding mechanisms, quality assurance protocols, and information systems to facilitate transparency and accessibility. The paper draws on international examples to elaborate on various approaches to public policy implementation and provides a list of consideration points for policy makers.

While this paper primarily focuses on these four policy tools, it acknowledges other influential factors that merit attention but were outside the scope of the project. These factors include employment and staffing policies at educational institutions, frameworks for recognition of prior learning, and sectoral and inter-ministerial coordination. These elements are incorporated into the self-assessment tool in Annex A, designed to assist policy makers in arriving at a comprehensive understanding of micro-credential policy implementation in their jurisdictions.

Overall, the paper serves as a guide for policy makers and stakeholders in the education and training sectors, offering a strategic framework for the integration and effective utilisation of micro-credentials.

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1 Creating an ecosystem to fully unlock the potential of micro-credentials

Micro-credentials are a form of credential that individuals can earn upon the completion of organised learning activities that are “smaller, more targeted and more flexible” than traditional education and training programmes. They are often offered fully or partly online but are also available in in-person settings. A broad range of providers offer micro-credentials, including higher education institutions, vocational education and training institutions, private companies, industry or professional associations, and non-profit organisations. Micro-credentials are typically seen as a tool to complement conventional forms of education and training and can result in standalone qualifications or be embedded in broader learning pathways (Kato, Galán-Muros and Weko, 2020^[2]; OECD, 2021^[3]).

The rising interest in micro-credentials from governments, employers and education and training institutions is largely driven by growing awareness of the importance of upskilling and reskilling for the workforce, in the face of rapidly evolving skills demand. Recognised as pivotal in facilitating swift skill acquisition, micro-credentials can be instrumental in helping workers whose skills are obsolete and whose jobs are at risk of automation to gain new skills demanded in labour markets, thereby efficiently reducing the mismatch between skills sought and those available. In this way, micro-credentials can act as a vehicle to smooth the transition to highly digitalised and environmentally sustainable economies – the so-called “digital and green transitions” (European Commission, 2022^[4]; Cedefop, 2023^[5]).

Furthermore, micro-credentials, with their smaller, more targeted, and more flexible nature, facilitate a learner-centric educational approach, allowing education and training providers to cater to the needs of diverse learners. They enable modularisation and offer different learning options to learners in initial education, while also supporting lifelong learning, which is important in the face of demographic and technological shifts. Additionally, micro-credentials are sometimes viewed as a means to promote social inclusion, widening access to higher education and vocational education and training among a wide range of learners, including underserved communities (OECD, 2023^[6]).

In recent years, public authorities across OECD countries have been exploring how best to exploit the potential of micro-credentials in their education, training and labour market systems and discovered that fully achieving their promise may not be simple or swift. The exact mix of challenges in developing an effective offering of micro-credentials will vary from one jurisdiction to another, since these challenges arise from the distinct mix of education, training, and labour market systems found in each country. Nevertheless, looking across jurisdictions, common difficulties are apparent, some of which centre on the capacity of education and training providers to make an effective offer of micro-credentials, often referred to as the “supply side”, while others relate to learners or firms and labour markets, factors that concern the “demand side”. Challenges related to the supply side include the lack of incentives for public education and training providers to engage in micro-credential provision, and the absence of functioning skills intelligence systems, and the issues on the demand side include the lack of standardised, accessible information for learners.

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To overcome these challenges, the development of a robust micro-credential ecosystem is crucial. Within such an ecosystem, micro-credentials would be clearly defined and understood by different stakeholders including learners and employers, catering flexibly to the diverse needs of the workforce, and allowing for credentials to be accumulated towards traditional educational qualifications. This would not only boost employability but also support lifelong learning across various demographics. Ensuring quality through a uniform framework would enable these credentials to be recognised across different providers and borders. Achieving this requires two concerted efforts: the development of supportive public policies that integrate micro-credentials into broader educational and labour systems, and collaborative engagement among educators, policy makers, and industry leaders.

This section will first examine key challenges related to supply and demand in the micro-credential landscape. It will then discuss the need for a cohesive micro-credential ecosystem that brings various stakeholders together to tackle these challenges and subsequently realise the full potential of micro-credentials as tools for learning.

Key challenges of supply and demand

The supply side: education and training providers

In some jurisdictions, education and training providers, especially higher education institutions, have yet to develop micro-credential programmes that are closely aligned with labour market demands, due to a range of factors. Firstly, each country adding micro-credentials to its learning offerings has a pre-existing landscape of targeted, short-term learning in addition to its degree programmes. This learning may take place outside of formal programmes offered by education institutions, whether in enterprise training centres or private training firms. Where focused learning opportunities from firms and private training organisations are widely available, public education and training providers may find little scope for, or attraction to, the development of micro-credential offerings. Targeted, short-term learning may be organised by higher education institutions, and offered on a non-formal basis in programmes that do not lead to the award of a recognised credential – or, perhaps, have little labour market relevance. Where those offerings are well-established and operate on a financially sustainable basis, there may be modest engagement in micro-credential development.

Weak incentives for education and training institutions and their staff can be a second major barrier to developing and delivering micro-credentials. Current legislation and public funding structures often do not steer higher education institutions and vocational education and training institutions to engage in micro-credential offerings. In systems where the law defines their missions, unless lifelong learning is mentioned in the relevant legislation, it may not be an integral part of their activities. Similarly, in systems where education is principally subsidised by the government, unless micro-credential offerings are considered in the allocation of core public funding, they will not be prioritised by education providers. The same can be said for the staff of higher education institutions and vocational education and training institutions. Their performance review and reward structures are linked to activities other than the development of micro-credentials, such as research activities and teaching activities related to traditional study programmes, and do not incentivise academics to engage in micro-credential offerings.

While engaging experts with industry experience in the co-development and delivery of micro-credentials may boost the willingness and capacity of higher education institutions to devise labour market-relevant micro-credentials, public employment law (in case academic staff are hired as civil servants) and university career systems may hamper or prevent this approach. Though traditional education providers may be incentivised to engage in the development and offering of micro-credentials, there may also be a problem of capability. For example, public universities may have limited engagement with firms, and even in

systems where some are closely engaged with industry, this experience may be unevenly shared within and among educational institutions.

Skills intelligence systems should, in principle, inform providers of current and future skill demands and assist them in developing micro-credential offerings relevant to those demands. However, in some jurisdictions, skills intelligence may not be well-developed, leaving educators with substantial uncertainty about the skills in demand, and unaware of what opportunities exist to use micro-credentials as a means by which to close gaps between current provision and skills sought in the wider economy.

Another example of challenges concerning the supply side is the complexity of establishing universal standards applicable to a diverse range of micro-credentials. For micro-credentials to play a role in lifelong learning and educational advancement, stackability and portability are key. Education and training providers show a preference to develop and offer micro-credentials that are compatible with programmes offered by other providers (OECD, 2023^[1]). Therefore, they tend to prefer to act under recognition frameworks agreed at the national level or with some partner institutions. However, developing standards and frameworks that can work for different providers, particularly those coming from different sectors, including higher education, vocational education and training and adult education, requires extensive discussions and coordination. Given the providers' unwillingness to act under uncertainty, this process can slow micro-credential implementation. This is particularly the case in systems where education and training providers are reluctant to operate without clear government directions.

The demand side: learners and firms

On the demand side, learners and employers often face the challenge of identifying micro-credentials that meet their needs. The provision of information related to micro-credential programmes tends to be fragmented, making it challenging for prospective learners and their potential employers to make sense of different micro-credential offerings. Prospective learners can also benefit from other information that may support their decision-making, such as outcome data, completers' feedback and skills forecasting data. However, currently, this information is rarely available to learners, and the capacity of individual providers to tackle this challenge can be limited.

Another major challenge related to the demand side is a notable disparity in lifelong learning participation among individuals from different socio-economic backgrounds. Data from the OECD Survey of Adult Skills, for example, show that adults who possess a higher education degree and higher information processing skills, are of prime working age (25-54), are employed in larger firms and have higher incomes are more likely to participate in non-formal education and training than their counterparts with contrasting characteristics (Kato, Galán-Muros and Weko, 2020^[2]). Similar patterns in learner demographics are also evident in other national and international datasets, such as the European Union (EU)'s Adult Education Survey and Labour Force Survey (OECD, 2021^[3]).

Several factors appear to hinder adults from engaging in education and training opportunities. Among adults who express a desire to learn but do not manage to participate in organised learning activities, the primary obstacles often include work and family responsibilities, financial constraints and inflexibility in programme provision. In addition, others are simply unaware of the need for upskilling and reskilling, as well as the learning opportunities available to them (OECD, 2023^[6]).

Creating a micro-credential ecosystem

The challenges hindering the systematic implementation of micro-credentials necessitate the creation of a robust micro-credential "ecosystem", which encompasses micro-credentials and the surrounding policies and practices. Many of these challenges are deeply rooted in the existing structures of education and training systems. Effectively addressing them requires patient and coordinated action on the part of public

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authorities and education leaders who, through implementing both public policies and institutional practices, together can create an ecosystem that is supportive of the development and uptake of micro-credentials.

A well-functioning micro-credential ecosystem would be characterised by transparency, relevance to society's needs, thoughtful pathway design, streamlined quality assurance measures and inclusive financing mechanisms. In such an ecosystem, micro-credentials would be clearly defined, allowing both learners and employers to have a good understanding of the diverse array of programmes offered by a diverse set of providers. These credentials respond to the needs of learners, society, and labour markets, are offered flexibly and can be “stacked” towards a larger traditional education programme. They enhance employability, as well as promote lifelong learning among learners from diverse backgrounds. Quality assurance would be built into the ecosystem, adhering to a common framework that ensures that credentials meet specific educational standards. This would also facilitate mutual recognition of these credentials across providers and borders. In addition, the provision and uptake of micro-credentials would be supported by stable funding mechanisms, ensuring that learners from disadvantaged backgrounds have equitable access to these valuable learning opportunities.

The importance of the ecosystem has been acknowledged from the beginning of discussions on micro-credentials, and policy documents establish the creation of a micro-credential ecosystem as a key milestone. For instance, the *EU Council Recommendation on a European approach to micro-credentials for lifelong learning and employability* has a section dedicated to proposing a set of recommendations in relation to the development of the ecosystem for micro-credentials (Council of the European Union, 2022^[7]).

The creation of a robust micro-credential ecosystem can be achieved through the combination of two strategies:

- a) the development of public policies that are supportive of providers and learners, as well as an integration of micro-credentials into wider education, training and labour market systems; and
- b) co-operation among a wide range of relevant stakeholders, including education and training providers, public authorities and employers and industry.

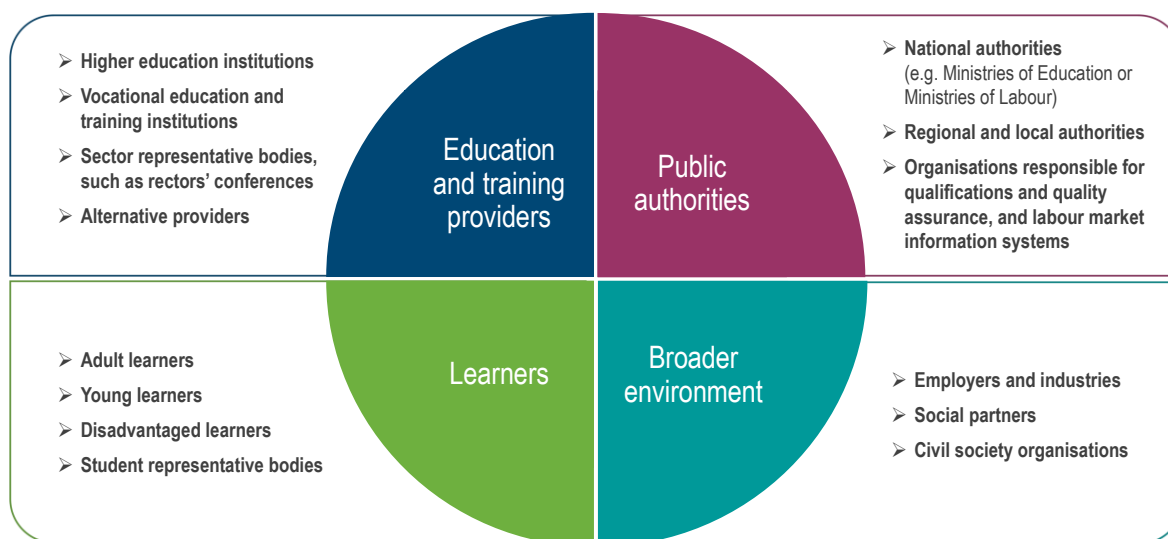
Firstly, public authorities can contribute to the establishment of a well-functioning ecosystem by laying the foundation, through supportive policy infrastructure. While education and training providers can develop and offer micro-credentials without having a policy framework in place, this may not adequately address key issues such as transparency, equity, and quality. This highlights the indispensable role of public policies. Regulatory frameworks and guidelines, for instance, can offer a common ground upon which providers can operate, while public funding can incentivise both the development and take-up of micro-credentials and ensure these programmes remain accessible to all types of learners. Comprehensive public information systems can also assist learners and employers in making sense of a range of micro-credential offerings.

In addition, the efficacy of the micro-credential ecosystem can be further enhanced by its integration into broader educational, training, and labour market systems. For example, micro-credentials could be aligned with existing educational policy tools, such as national qualifications frameworks, quality assurance procedures and academic credit systems. In integrating micro-credentials into established systems and frameworks, it is crucial to take into account and protect their distinctive characteristics of agility and flexibility. Micro-credentials can also be implemented in coordination with existing labour market policy instruments, such as a range of active labour market policies and skills forecasting systems.

Secondly, a robust micro-credential ecosystem will require the engagement of a wide range of relevant stakeholders, including education and training providers, public authorities, stakeholders in a broader environment (such as employers and industry partners) and learners (Figure 1.1). While it is possible for a single entity to offer micro-credentials on its own, collective efforts are essential to fully unlock the

potential of micro-credentials. To support the purpose of upskilling and reskilling, the engagement of employers, industry and social partners is crucial to ensure the relevance of micro-credentials. In addition, to be a tool for academic advancement, different types of education and training providers and public authorities need to come together to facilitate the academic recognition of micro-credentials and make stacking possible. Finally, coherence across different initiatives is important to deliver clear communication to learners and employers and to achieve desired outcomes.

Figure 1.1. Key stakeholders of a micro-credential ecosystem



Note: "Alternative providers" include private companies, industry or professional associations, and non-profit organisations, among others. Source: Authors' elaboration based on Council of the European Union (2022^[7])

2 Building blocks for the creation of a robust micro-credential ecosystem

Public authorities can play an important role in the creation of a micro-credential ecosystem through public policy development and implementation. In some jurisdictions, the offer of micro-credentials may commence before public bodies have established framework policies for the regulation and funding of micro-credentials, while in others, the sequence is the opposite. Regardless of the sequence, public policies act as critical levers for ensuring consistency, transparency, and quality across the spectrum of micro-credential offerings.

This section examines four key policy instruments that can be used to optimise the role of micro-credentials in facilitating upskilling, reskilling and lifelong learning. These instruments are regulations and guidelines, public funding, quality assurance mechanisms and information systems. The section will first look at different approaches to implementing public policy initiatives (e.g. direct and steering policies). It will then look at each of the four policy instruments in detail, drawing on examples implemented across the world. It will also draw up a short list of policy pointers at the end for policy makers' consideration.

While this section focuses on the four key policy areas essential to the development of a functioning micro-credential ecosystem, the authors acknowledge that there are other influential factors not explored in depth in this paper. Among these are employment and staffing policies in education providers, which may require revisions in many jurisdictions to increase incentives for teaching and academic staff to engage in micro-credential provision and promote staff mobility between academia and industry. Additionally, mechanisms for the recognition of prior learning are a critical element in order to facilitate the academic recognition of micro-credential learning. Coordination across sectors (e.g. higher education, vocational education and training, and adult learning) and among ministries (e.g. education and labour) is another area where intentional efforts may be needed to streamline micro-credential policies and initiatives at the national level. These points are included in the self-assessment tool (Annex A) to assist policy makers in having a more comprehensive overview of micro-credential policies and their implementation in their jurisdictions.

Finally, it is important to note that this section primarily examines recent public policy initiatives in the realms of education and training, with a focus on utilising micro-credentials for lifelong learning, upskilling, and reskilling. While the identified four policy instruments have applications in various domains, including labour market policy spaces, the emphasis in this section is on initiatives within the area of education and training, typically under the purview of ministries of education or higher education. In addition, before the term “micro-credentials” started being recognised by policy makers, there had been a considerable amount of policy initiatives taken to support lifelong learning and continuing education. However, this section will chiefly look at initiatives that have been planned and implemented in the last five years to grasp more recent moves that governments are making in this policy space. Lastly, while micro-credentials are used in both initial and continuing education, this section will focus on policy initiatives that primarily concern micro-credentials targeting adult learners.

Two approaches to implementing public policy initiatives

When implementing public policy initiatives, public authorities can opt for different approaches that can be broadly categorised into two categories: softer, steering, and exploratory approaches, and harder and more direct policy mechanisms (Figure 2.1). In terms of regulations and guidelines, for example, a softer approach may entail creating a framework that providers can voluntarily adopt, as well as encouraging stakeholder consultations on formats and other characteristics of micro-credentials. Alternatively, a more direct approach would involve enforcing or amending legislation to codify these practices. Public funding options also range from targeted funding aimed at specific micro-credential schemes to the incorporation of micro-credentials into existing public funding schemes and/or offering individual learning accounts. When it comes to quality assurance mechanisms, pilot programmes can offer exploratory paths to experiment with good practices, while a more systematised approach would integrate micro-credentials into existing quality assurance systems or develop a new mechanism dedicated to these programmes. Lastly, in the case of information system development, options range from smaller-scale information portals to a comprehensive, nationwide system that centralises data and offerings.

Figure 2.1. Key policy instruments that can be used to support the creation of a well-functioning micro-credential ecosystem

Examples of different approaches

Softer / steering / exploratory approach	Harder / direct policy / systematisation approach
Regulations and guidelines	
<ul style="list-style-type: none"> ➤ Create a framework that providers can follow when offering and recognising micro-credentials ➤ Support providers' efforts to agree on formats 	<ul style="list-style-type: none"> ➤ Enforce or make changes to legislation under which providers operate
Public funding	
<ul style="list-style-type: none"> ➤ Use targeted funding 	<ul style="list-style-type: none"> ➤ Include in core public funding and/or extend student loan schemes ➤ Adopt individual learning accounts
Quality assurance mechanisms	
<ul style="list-style-type: none"> ➤ Experiment with quality assurance through a pilot 	<ul style="list-style-type: none"> ➤ Integrate micro-credentials in an existing quality assurance system ➤ Develop a quality assurance mechanism dedicated to micro-credentials
Information systems	
<ul style="list-style-type: none"> ➤ Create an information portal among a smaller group of stakeholders 	<ul style="list-style-type: none"> ➤ Create a nationwide information portal

Optimal initial approaches to the implementation of these policy instruments would look different across countries depending on the national context and culture accepted by stakeholders. Indeed, there is no single right approach for all countries and systems, and policy makers should carefully assess the assets and challenges in their system with stakeholders before selecting the most appropriate public policy options.

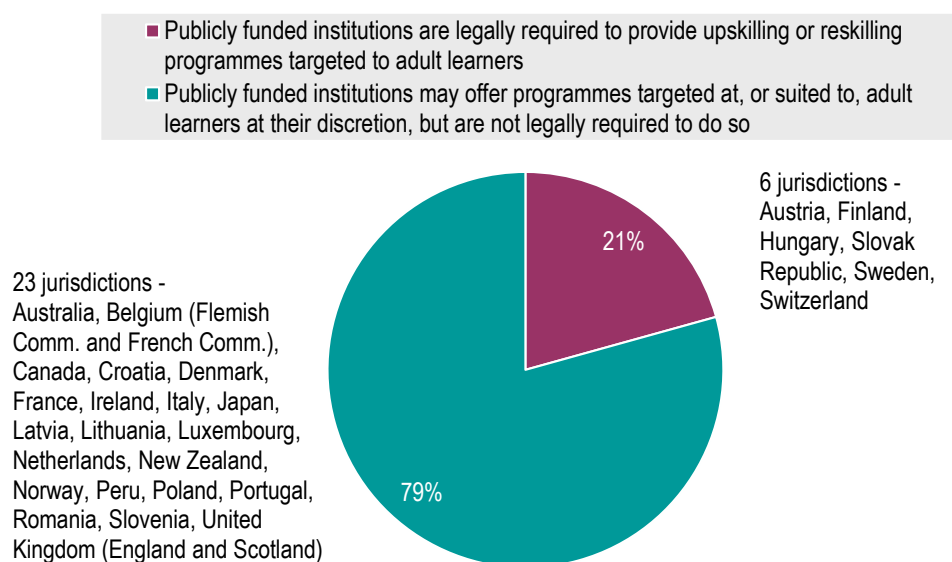
Regulations and guidelines for micro-credential providers

Public authorities use different types of regulatory policy levers to govern and steer education and training offerings, including micro-credentials. Laws, enacted by national legislative bodies, such as a parliament and congress, provide the overarching legal framework. Decrees, usually issued by heads of state or government (or sometimes by ministers), serve as more agile instruments for specific policy interventions and operate within the bounds of existing laws. Guidelines, on the contrary, are non-binding advisories issued by educational authorities, such as the ministries of education, to clarify implementation and encourage best practices.

In some cases, governments use these regulatory policy levers to mandate education and training providers to engage in lifelong learning. According to the data collected through the OECD Higher Education Policy Survey 2022, one-fifth of responding countries have set legal requirements for publicly funded higher education institutions to offer upskilling and reskilling programmes targeted to adult learners (Figure 2.2). This was the case before the emergence of the term "micro-credentials" in many jurisdictions, and therefore, references to lifelong learning in these regulatory documents are typically broader and not necessarily well-adapted to micro-credential learning, which often has a strong focus on labour market relevance and stackability. However, in more recent examples, specific references to micro-credentials are made, although often in a non-prescriptive manner. In Spain, for instance, Organic Law 2/2023 makes a reference to the role of universities in lifelong learning and addresses micro-credentials as one of the lifelong learning programmes universities may offer.

Figure 2.2. Legal requirements for higher education institutions to engage in upskilling and reskilling

In response to the question “Which of the following describes the situation with regard to the provision of upskilling or reskilling in your higher education system?”



Note: Total responding jurisdictions: 29

Source: OECD Higher Education Policy Survey 2022

In other cases, and more recently, regulatory policy levers specifically focused on defining micro-credential specifications have been emerging in several jurisdictions. In the majority of cases, public authorities

establish non-binding guidelines to define a policy direction (e.g. Australia, Canada (British Columbia), Malaysia and New Zealand), while in other cases, they have made legislative changes (e.g. Spain). There are also cases where governments have supported providers' collaborative efforts to standardise micro-credential design, which can be a foundation for the creation of national frameworks (e.g. Ireland and the Netherlands).

Table 2.1 lists recent examples of the use of regulations and guidelines in shaping micro-credential provision. The following paragraphs will examine these examples in terms of six characteristics: a) the providers targeted; b) workload; c) level; d) inclusion in the National Qualifications Framework (NQF) e) reference to industry and social relevance, and f) reference to stackability and portability.

Firstly, the different regulations and guidelines target different groups of stakeholders. Some of them focus on all types of education and training providers, including alternative providers, such as private companies, industry or professional associations, and non-profit organisations (e.g. Australia). Consequently, these regulations provide a relatively broad framework to accommodate diverse needs that come from different sectors, such as higher education, vocational education and training and adult education sectors. Others, on the other hand, are directed towards a certain group of providers, for instance, public universities, and therefore have a more specific framework (e.g. Ireland).

Secondly, regulations and guidelines usually refer to the workload of micro-credentials, and a general trend is to have relatively broad definitions that identify upper and lower bounds. For instance, in Australia, the size range of micro-credentials is from a minimum volume of learning of one hour to less than an Australian Qualifications Framework (AQF) award qualification. Similarly, in Ireland and the Netherlands, micro-credentials are considered to be between 1-30, and 3-30 European Credit Transfer and Accumulation System (ECTS), respectively. In other cases, micro-credentials are specified in regulations and guidelines as slightly more “micro”. In Austria, the Recommendation made by the national Bologna Follow-Up Group suggests micro-credentials to be between 3-15 ECTS, and in Spain, they are defined by Royal Decree as less than 15 ECTS. And in Canada (British Columbia), micro-credentials are expected to be under 288 hours (equivalent to around 9-11 ECTS). The types of providers involved in initiatives also have an influence on setting the workload. When initiatives only involve higher education institutions, the workload may be set based on academic credit size, such as ECTS. However, when the scope is wider, the workload may be stated in instructional contact hours.

Thirdly, the reference levels of micro-credentials in relation to existing qualifications frameworks may be specified in regulations and guidelines. In the case of the Irish MicroCreds initiative, the levels are set between level 6 and 9 of the National Framework of Qualifications (NFQ) (equivalent to the International Standard Classification of Education (ISCED) level 5-7). In other cases, micro-credentials can be offered at any levels of NQFs (e.g. Malaysia and New Zealand). In addition, the Australian National Microcredentials Framework suggests different approaches for credit-bearing micro-credentials and others. If micro-credentials are credit-bearing, their levels may be specified using the levels set in the Australian Qualifications Framework (AQF), while for micro-credentials that do not bear credits, the use of the five-level Dreyfus Model of Skills Acquisition (novice, advanced beginner, competent, proficient, or expert) is suggested.

Fourthly, while several public authorities suggest the use of the levels specified in NQFs to describe learning outcomes, it does not seem common to include micro-credentials in the NQFs themselves. Among the reviewed examples, New Zealand is the only country doing so: when they re-launched the New Zealand Qualifications and Credentials Framework (NZQCF) in 2020, they added micro-credentials and established that they could be at any level of the NZQCF (from level 1 to 10). Others, such as Australia, intentionally do not include micro-credentials in the NQFs in order to differentiate them from NQF qualifications and keep them agile and flexible (Box 2.1).

Box 2.1. Australia - reasons for not including micro-credentials in the AQF

Experts who participated in the AQF review in 2019 concluded that stakeholders did not support including shorter form credentials in the AQF as qualification types. The reasons provided mainly related to micro-credentials, including:

- Shorter credentials vary widely in their scope and level of complexity and so cannot be allocated as a qualification type to any one AQF level.
- There is potential for an increased administrative burden and cost to regulators and providers of complying with the regulatory requirements associated with an AQF qualification for many micro-credentials.
- The requirement to meet the regulatory or other requirements of an AQF credential may delay the speed to market of micro-credentials or stifle innovation, negating the benefit and promise of these credentials.
- The potential for confusion in the market as to which credentials are included in the AQF and which are not if inclusion in the AQF is voluntary.
- Shorter form credentials of uncertain quality could undermine the AQF and could be open to exploitation by unscrupulous providers.
- There are possible unintended reputational concerns internationally relating to perceptions of diminished standards should short courses be included in the AQF in the same way as full qualifications.

Consequently, the national definition that followed the review describes micro-credentials as “certifications of assessed learning or competency, with a minimum volume of learning of one hour and less than an AQF award qualification, that is additional, alternate, complementary to or a component part of an AQF award qualification”.

Source: Australian Government (2019^[8])

In some countries, short learning programmes that fall under the definition of micro-credentials were part of the NQFs before micro-credentials entered policy discussions. The Malta Qualifications Framework, for instance, refers to “awards” which are smaller than “qualifications” (such as degrees) (Malta National Commission for Further and Higher Education, 2016^[9]). The Irish NFQ also includes “minor”, “special purpose” and “supplemental” awards, which are differentiated from “major” awards (such as degrees) (QQI, 2021^[10]). However, there are other short learning programmes offered outside of these credential systems (e.g. micro-credentials offered as part of the Irish MicroCreds initiative), and these programmes are currently not part of the NQFs.

In addition to the basic format specifications, such as workload and levels, public authorities sometimes establish guidance that aims to ensure the relevance of micro-credentials. In the Canadian province of British Columbia, for instance, the definition says “micro-credentials recognise stand-alone, short duration learning experiences that are competency-based, *align with industry, employer, community and/or Indigenous community needs* and can be assessed and recognised for employment or learning purposes” (British Columbia Ministry of Advanced Education and Skills Training, 2021, p. 6^[11]). In addition, in New Zealand, for education and training providers (excluding universities) to offer nationally recognised micro-credential programmes, they must demonstrate the evidence of need through documented support from relevant stakeholders including the Workforce Development Councils, which act as the voice of industries.

Similarly, to ensure that micro-credentials support learning that can result in degree progression and completion, governments may provide guidance with respect to stackability and portability of micro-credentials. In many cases, this characteristic is mentioned as an option to providers. In Australia, for instance, the National Microcredentials Framework describes information requirements for providers to list their programmes on the national platform, and one of the recommended elements is information on stackability. In other cases, stackability is seen as one of the principal characteristics of micro-credentials. In Malaysia, as part of their effort to update the “Guidelines to Good Practices: Micro-credentials”, which was first published in 2020, they are considering making the delivery of academic credits one of the core features of micro-credentials. This means that all micro-credentials, including those offered by alternative providers, will need to be credit-bearing in order to be listed in a national register. This change has been discussed in the context of ensuring learning pathways, and it is expected to facilitate the process of academic recognition (Chua, 2022^[12]).

Table 2.1. Recent examples of the use of regulations and guidelines in shaping micro-credentials provision

	Country	Initiative and leading organisation	Launch year	Workload	Level	Inclusion in the National Qualifications Framework	Reference to industry and social relevance	Reference to stackability and portability	Providers that operate under the legislation / guideline
Public authorities have made legislative changes	Hungary	“Amendments made to the Adult Education Act No. LXXVII of 2013” by the Parliament	2022	Not specified	Not specified	No	No	No	All types of providers in the higher education, vocational education and training and adult education sectors (including alternative providers)
	Spain	“Royal Decree 822/2021” set by the Ministry of Universities	2021	Less than 15 ECTS	Not specified (but university education is given at ISCED level 6-8)	No	Partially yes (but it applies to all programmes offered by universities, including degrees)	No	Universities
Public authorities have developed non-binding guidelines	Australia	“National Microcredentials Framework” developed by the Department of Education, Skills and Employment	2022	A minimum volume of learning of one hour and less than an Australian Qualifications Framework (AQF) award qualification*	If credit-bearing: all AQF levels If not credit-bearing: five levels (novice, advanced beginner, competent, proficient, expert)	No	Yes	Yes, but optional	All types of education and training providers (including alternative providers)
	Canada (British Columbia)	“Micro-credential Framework” developed by the Ministry of Advanced Education and Skills Training	2021	Shorter than other formal post-secondary credentials (under 288 hours)	Not specified (but post-secondary education is offered at ISCED level 4-8)	N/A	Yes	Yes, but optional	Public post-secondary institutions

	Country	Initiative and leading organisation	Launch year	Workload	Level	Inclusion in the National Qualifications Framework	Reference to industry and social relevance	Reference to stackability and portability	Providers that operate under the legislation / guideline
	Malaysia	“Guidelines to Good Practices: Micro-credentials” developed by the Malaysian Qualifications Agency	2020	Not specified	All Malaysian Qualifications Framework (MQF) levels	No	Yes	Yes	Higher education providers and alternative providers
	New Zealand	Definition set by the New Zealand Qualifications Authority (NZQA)	2018	1-40 credits in size (equivalent to 0.5-20 ECTS)	All levels of the New Zealand Qualifications and Credentials Framework (NZQCF)	Yes	Yes	Yes, but optional	Accredited education providers (including some alternative providers)
Public authorities have supported stakeholders’ collaborative efforts to standardise designs	Austria	Recommendation made by the national Bologna Follow-Up Group	2023	3-15 ECTS	Not specified (but higher education is given at ISCED level 6-8)	No	Yes	Yes, through academic recognition	Higher education institutions
	Ireland	“MicroCreds” initiative led by the Irish Universities Association	2020	1-30 ECTS	National Framework of Qualifications (NFQ) level 6-9 (equivalent to ISCED level 5-7)	No	Yes	Yes, but optional	Seven public universities
	Netherlands	“Microcredentials Pilot” run as part of the Acceleration Plan	2021	3-30 ECTS	Not specified (but higher education is given at ISCED level 5-8)	No	No	No	32 higher education institutions

Note: *In the case of higher education, the smallest AQF award qualification is an Undergraduate Certificate or Graduate Certificate, which can start at 0.5 Equivalent Full Time Study Load (i.e. six months of full-time commitment) (Australian Government, 2022^[13]).

Source: Malaysian Qualifications Agency (2020^[14]), British Columbia Ministry of Advanced Education and Skills Training (2021^[11]), Government of Spain (2021^[15]), Australian Government (2022^[16]), Hungarian Parliament (2023^[17]), MicroCreds (2023^[18]), New Zealand Qualifications Authority (2023^[19]), Acceleration Plan (n.d.^[20]), and BMBWF (n.d.^[21])

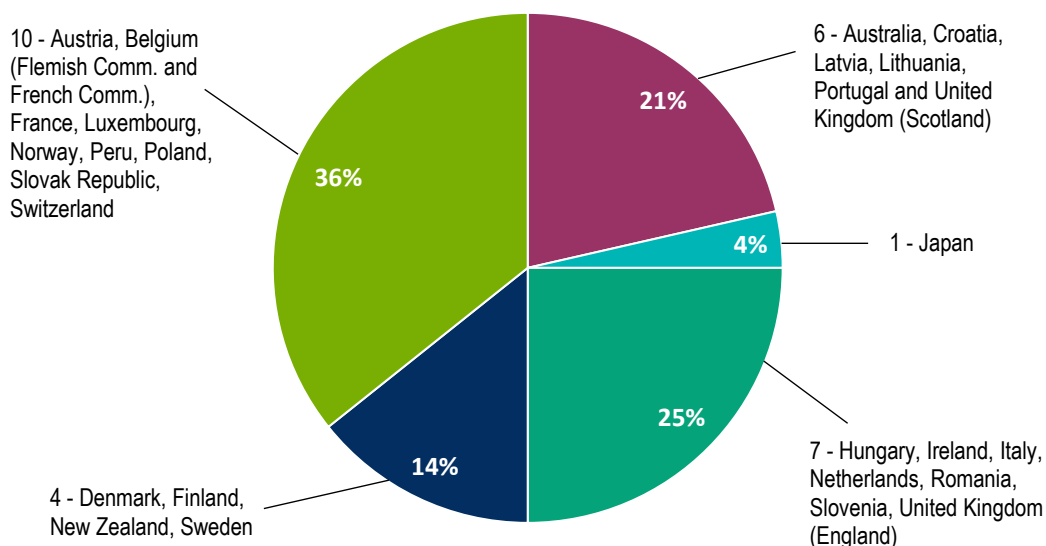
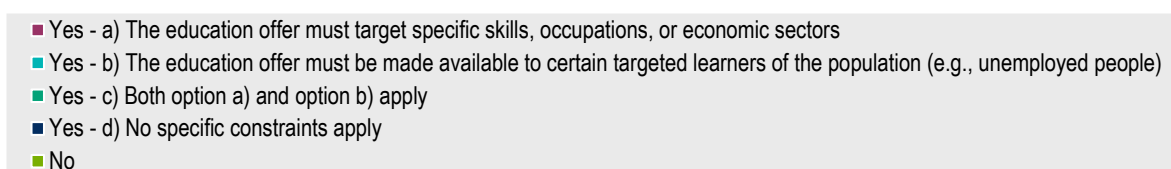
Public funding for micro-credential providers and learners

Legislation and guidelines alone cannot fully steer providers to offer micro-credentials that successfully support upskilling, reskilling and lifelong learning. Providers often need incentives to engage in new initiatives, and public funding can play an important role in accelerating micro-credential adoption. Learners, for their part, may likewise need financial support to meet the direct or indirect costs of micro-credential learning.

Governments across OECD countries are actively utilising public funding to accelerate micro-credential offerings. According to the OECD Higher Education Policy Survey 2022, approximately two-thirds of the 29 responding jurisdictions report having some form of public funding support for micro-credential provisions (Figure 2.3). In most cases, public authorities establish criteria for determining funding eligibility, including the target areas of study and specific learner groups.

Figure 2.3. Funding support for micro-credential providers

In response to the question “Do specific public funding allocations, subsidised projects or incentive schemes exist in your system for higher education institutions to offer micro-credentials or similar short upskilling or reskilling programmes? If so, under what circumstances may institutions avail of the public support?”



Note: Total responding jurisdictions: 28

Source: OECD Higher Education Policy Survey 2022

Jurisdictions employ diverse strategies for funding micro-credentials, with some opting for exploratory measures and others implementing longer-term funding mechanisms. Some jurisdictions, such as Slovenia and Spain, are taking an exploratory approach and using temporary targeted funding to support the development of micro-credentials by education and training providers. Conversely, others, including

Austria, Finland, and France, have established financial support for micro-credentials through more durable funding mechanisms, including core public funding to higher education institutions, student loans and individual learning accounts. There are also cases where these two approaches are concurrently implemented, as is the case in the United Kingdom.

This section examines examples of the different approaches to micro-credential funding to assist policy makers in effectively using public funding to pursue their goals. Given the scope of the paper, this section primarily focuses on funding initiatives implemented in the policy area of education and training, while there are other funding mechanisms to support upskilling, reskilling and lifelong learning, such as those directed towards employers (tax incentives, absentee payroll funding etc.).

An exploratory approach to micro-credential funding

Table 2.2 shows examples of public authorities allocating temporary funds to support the development and delivery of micro-credentials. It compares different initiatives from several angles, including funding sources, reference to industry and social relevance, reference to stackability and portability, providers who benefit from the funding and a funded period, which will be discussed in detail in the following paragraphs.

Firstly, temporary funding that supports micro-credential initiatives seems to come from diverse sources. In the majority of cases, initiatives are supported by public funding. For instance, in Canada (Ontario), the micro-credential initiative is funded by a provincial budget temporarily allocated in response to the COVID-19 pandemic to support upskilling and reskilling. And in Ireland, the source of allocated public funding is a National Training Fund, which is financed through compulsory levies on employers. Another major source in Europe is international funding. Various Member States use funding from the EU to support micro-credential implementation. Notably, the Recovery and Resilience Facility (RRF), a temporary instrument to mitigate the economic and social impact of COVID-19 pandemic, is allocated for this purpose in several Member States, including Belgium, Croatia, Estonia, France, Hungary, Portugal, Slovenia, and Spain. The European Social Fund Plus, an instrument used in the area of employment, social, education and skills policies, is also used in Bulgaria, Croatia, Estonia, Hungary and Romania, among others.

In many of the above examples, public and international funding is complemented by contributions from learners and providers. In Australia, Canada (Ontario) and Ireland, for instance, government funding supports the initial costs associated with the development of micro-credentials, and it is expected to have some private funding in the form of tuition fees. Similarly, in Spain, where the micro-credential pilot is funded by the EU's RRF, learners are expected to cover 30% of the costs. To also ensure equity, in Australia and Canada (Ontario), general student grant and loan support has been extended to those undertaking the funded micro-credential programmes. In the Spanish case, tuition fees can also be waived or reduced for learners from economically and socially disadvantaged backgrounds. In the Netherlands, the cost of the micro-credential pilot is covered by a range of stakeholders, including providers themselves.

Secondly, it seems common to use targeted funding to steer micro-credential provision in certain directions. In the majority of the examined cases, labour market and social relevance is a condition for funding. In some cases, this condition is relatively soft, and the assessment of relevance is based on providers' self-reporting (e.g. Slovenia), while in other cases, it is more strict, and formal partnerships with industry and social partners are required (e.g. Canada (Ontario)). In the case of the Australian pilot, micro-credentials have to be in an area of national priority, i.e. behavioural science, education, engineering and related technologies, health, information technology, or natural and physical sciences. In addition, providers have to submit an "industry endorsement" (i.e. a letter that shows support from industry or professional bodies) as a minimum, and they are encouraged to have "industry engagement" (i.e. partnerships between providers and industry).

In the same spirit, though infrequently, funding instruments are used to promote the stacking of micro-credentials. In the United Kingdom (England), for instance, one of the requirements in the Higher Education

Short Course Trial was to ensure the courses developed can be used as credit towards a full degree if learners wish. Similarly, in the United States (Colorado), the state budget is allocated to community and technical colleges and local district colleges to facilitate the creation of stackable credential pathways for at least five growing industries.

Thirdly, the majority of identified examples define providers who are eligible to benefit from the funding. In many cases, public providers are the main beneficiaries of micro-credential funding initiatives, as is often the case for other government initiatives. In Spain, for instance, there are 50 public universities and 39 private universities, and among these, the RRF micro-credential funding will be allocated exclusively to public universities.

Lastly, in terms of the duration of funding, many of the identified examples are funded for around one to three years. For instance, for the RRF-funded initiatives (e.g. Slovenia and Spain), the whole process – from the planning of the pilot to the evaluation – is expected to be completed in typically three years. Some initiatives have a slightly longer timeline. The Irish MicroCreds project, for example, runs from 2020 to 2025.

A more systematic approach to micro-credential funding

Table 2.3 lists examples of the government's attempts to integrate micro-credentials into more durable funding instruments. While the initiatives supported by temporary targeted funding tend to be directed towards the providers of micro-credentials, the initiatives with longer-term implementation can be directed towards both providers and learners. In this section, each of the examples is discussed in detail to explore different approaches to more sustainable funding for micro-credentials.

In some cases, the provision of micro-credentials (or short-term programmes that fall under the broad definition of micro-credentials) is considered in the allocation of core public funding to education and training providers. Finland, for instance, revised their core funding allocation model for higher education institutions in 2021, and the new model increased the proportion of funding allocated to institutions based on the number of credits gained through open studies (5% for universities and 9% for universities of applied sciences). Open studies are modules of degree programmes and are open to anyone, usually without any entry requirements. Given that the core grants account for the majority of the income of higher education institutions (62% for universities and 78% for universities of applied sciences), this change gives an incentive to higher education institutions to direct more efforts into continuous education. While it is too early to examine the impact of the change in the funding model, the number of participants in open studies increased considerably in the past five years (by 124% for universities and 381% for universities of applied sciences between 2017 and 2022) (Vipunen, n.d.^[22]; Vipunen, n.d.^[23]). At the same time, open studies are not necessarily designed to primarily support upskilling and reskilling (for instance, there is no requirement to seek quality validation from industry), and therefore, these programmes may be more suitable to support the objective of promoting lifelong learning.

In other cases, funding to support upskilling, reskilling and lifelong learning goes directly to learners. One way of doing this is through individual learning schemes, which are “training schemes that are attached to individuals (rather than to a specific employer or employment status) and which are at their disposal to undertake continuous training along their working lives and at their own initiative” (OECD, 2019, p. 9^[24]). In Singapore, for instance, all citizens aged 25 and above have been entitled to receive a credit of SGD 500 in their account on the government lifelong learning portal called “MySkillsFuture” since 2015. The credit can be used to participate in government-approved training programmes, many of which are often heavily subsidised by the government (maximum 90% of course fees) and therefore offer affordable prices. This initiative is supported by the government's Lifelong Learning Endowment Fund, which was created in 2001 for the purpose of pooling funding for continuing education and training. France also started offering individual learning accounts (*compte personnel de formation*, CPF) in 2015, and employed individuals

receive EUR 500 per year and can accumulate their credit up to EUR 5 000. The CPF is funded through a compulsory training levy on firms.

It is relevant to note while some jurisdictions have introduced individual learning accounts as nearly a universal right to all citizens or workers (like France and Singapore, as noted), others narrow their target groups. In Austria (Upper Austria), for instance, individuals eligible for learning accounts (*Bildungskonto*) are those without higher education and higher education graduates with a gross monthly income of less than EUR 3 000. These individuals can receive grants to cover 30-60% of the training costs with a limit of EUR 1 000 to 4 000 depending on the type of programmes¹. Similarly, in the United Kingdom (Scotland), a training credit of up to GBP 200 per year is given to those without higher education and actively seeking employment or currently in low-paid work (an annual income of GBP 22 000 or less).

In addition, in many cases, public authorities define programmes that are eligible for the use of individual learning accounts. Scotland, for instance, re-launched their then Individual Learning Accounts as Individual Training Accounts in 2017 and increased the focus on their role to support upskilling and reskilling (as opposed to lifelong learning in general). Under the renewed scheme, programmes eligible for funding need to be offered in the government's priority areas, including agriculture, business, construction, early years and childcare, health and safety, science, technology, engineering, and mathematics (STEM), social care, and transport, and demonstrate quality and positive labour market outcomes. According to the evaluation published by the Scottish Government in 2023, the changes made in 2017 had brought the outcomes they sought, which is to support upskilling and reskilling of the labour force (Scottish Government, 2023^[25]).

Another way to provide financial support to learners is the inclusion of micro-credentials into existing loan systems. The United Kingdom (England), for instance, plans to extend the income-contingent loan scheme for degree programmes to smaller units of learning, such as modules, starting in 2025. The initiative is called "Lifelong Loan Entitlement (LLE)" and was announced in 2020. This new scheme will allow learners to use their loan entitlement to the equivalent of four years of post-18-year-old education (GBP 37 000 as of March 2023) at their own pace over their lifetime. Qualifications at levels 4-6 of the Regulated Qualifications Framework (RQF) (equivalent to ISCED level 5-6) or their individual modules will fall under the scope of the new loan scheme. While the main aim of this initiative is to permit more flexible learning, particularly for adult learners with work, family and personal responsibilities, it also supports the upskilling and reskilling of higher education graduates. Currently, those who already hold a first degree at RQF level 6 (such as a bachelor's degree) are not entitled to take up the loans to enrol in programmes at equivalent or lower levels. However, the implementation of LLE will allow these graduates to also use the loans up to the entitled amount, and therefore, a person who previously had taken out a student loan to study a history degree, for instance, will be able to use the remaining LLE to finance for a Higher Technical Qualification in Software Development (Government of the United Kingdom, 2023^[26]).

Combining the two approaches

Some countries combine different funding methods to maximise the impact of government interventions. In Singapore, for instance, in addition to the regular training voucher "SkillsFuture Credit" of SGD 500, an additional budget was given to all entitled individuals to support their upskilling and reskilling in the midst of the COVID-19 pandemic (i.e. SGD 1 000 for those aged 40 to 60 and SGD 500 for others, as of 31 December 2020) (Government of Singapore, 2023^[27]). Similarly, in the United Kingdom (England), as part of efforts to prepare the Lifelong Loan Entitlement, which essentially requires changes to the existing income-contingent loan system, targeted funding was allocated to higher education institutions to experiment with flexible and modular courses under the Higher Education Short Course Trial.

¹ In Austria, each of the nine federal states (*Bundesländer*) provides individual learning accounts (*Bildungskonto*) to promote participation in further education and training. The amount and criteria for eligible programmes and individuals differ across the states (Cedefop, 2023^[55]).

Table 2.2. Recent examples of the use of public funding to support micro-credential initiatives - exploratory approach

Country	Initiative	Funded period	Funding source	Amount	Reference to industry and social relevance	Reference to stackability and portability	Providers who benefit from the funding
Australia	“Microcredentials Pilot in Higher Education”	2023-24 (Round-1) and 2024-26 (Round-2)	Public, and in some cases, private (providers have discretion over whether they charge students tuition fees)*	AUD 18.5 million	Yes	Yes	Table A higher education providers** (Round-1) and all higher education providers (Round-2)
Canada (Ontario)	“Micro-credentials Challenge Fund”	2021-22	Public and private (tuition fees charged to learners)*	CAD 15 million	Yes	Not specified	Post-secondary institutions (colleges, universities, Indigenous Institutes and private career colleges)
Ireland	“MicroCreds” – one of 24 projects funded under Pillar Three of the “Human Capital Initiative”	2020-25	Public (National Training Fund – a compulsory levy on employers) and private (tuition fees charged to learners)	EUR 12.3 million	Yes	Yes, but optional, and ECTS credits are given	Seven public universities
Netherlands	“Microcredentials Pilot in Higher Education” – one of the initiatives ran under the “Acceleration Plan” and “Npuls”	2021-23	Mix (contributions from participating institutions, the Association of Universities (VSNU), the Association of Universities of Applied Sciences (VH), SURF and the Ministry of Education, Culture and Science)	Unknown	No	Not explicitly mentioned but ECTS credits are given	32 higher education institutions
Slovenia	One component of the “Recovery and Resilience Plan for Slovenia”	2022-25	International (EU’s RRF)	EUR 10.1 million	Yes	Yes	Four public higher education institutions

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Country	Initiative	Funded period	Funding source	Amount	Reference to industry and social relevance	Reference to stackability and portability	Providers who benefit from the funding
Spain	One component of the “Recovery and Resilience Plan for Spain”	2023-26	International (EU’s RRF) and private (30% of the costs to be covered by learners in the form of tuition fees)***	EUR 50 million	Yes	Yes	Public universities
United Kingdom (England)	“Higher Education Short Course Trial”	2022-25	Public	GBP 2.5 million	Yes	Yes	Higher education institutions
United States (Colorado)	“Opportunities For Credential Attainment”	2022	Public	Around USD 3 million	Yes	Yes	Community and technical colleges and local district colleges

Note: *Financial support for students to take up micro-credentials is also available.

**Higher education providers that are self-accrediting bodies and eligible for all funding under the Higher Education Support Act 2003, including general Commonwealth funded places.

*** Tuition fees may be exempted or reduced for learners from economically and socially disadvantaged backgrounds (up to 25% of all learners).

Source: Colorado General Assembly (2022^[28]), Office for Students (2022^[29]), Australian Government (2023^[30]), Government of Ontario (2023^[31]), Government of Spain (2023^[32]), Irish Universities Association (2023^[33]), Acceleration Plan (n.d.^[20]), and European Commission (n.d.^[34])

Table 2.3. Recent examples of the use of public funding to support micro-credential initiatives – more systematic approach

Country	Initiative	Launch year	Form	Beneficiaries	Amount	Considered/eligible programmes
Finland	Revision of a core funding allocation model	2021	Annual core public funding allocation	Universities and universities of applied sciences	5% of core funding for universities and 9% of core funding for universities of applied sciences	Open studies
Austria (Upper Austria)	"Bildungskonto (learning accounts)"	1994	Individual learning accounts	Those without higher education, and higher education graduates with gross monthly income of less than EUR 3 000	30-60% of the training costs with a limit of EUR 1 000 to 4 000 depending on the type of programmes	Vocationally-oriented programmes
France	"Compte personnel de formation (individual learning accounts)"	2015		Individuals in the labour force	Around EUR 500 per year (with some variations depending on employment conditions)	A wide range of training programmes including those registered in the National Directory of Professional Certifications (<i>Répertoire National des Certifications Professionnelles</i>) and the Specific Directory (<i>Répertoire Spécifique</i>)
Singapore	"SkillsFuture Credit"	2015		All Singaporeans aged 25 and above	SGD 500 for lifetime (with some exceptions)	A wide range of government-subsidised courses
United Kingdom (Scotland)	"Individual Training Accounts"	2004 (re-launched in 2017)		Those without higher education and actively seeking employment or currently in low-paid work (an annual income of GBP 22 000 or less)	GBP 200 per year	Programmes that are in the government's priority areas and demonstrate positive labour market outcomes
United Kingdom (England)	"Lifelong Loan Entitlement"	2025		Income-contingent loan	Individuals up to age 60	Equivalent of four years of post-18-year-old education (GBP 37 000 as of March 2023)

Source: OECD (2019^[24]), AK Oberösterreich (2023^[35]), Cedefop (2023^[36]), Government of Singapore (2023^[27]), Government of the United Kingdom (2023^[26]), Ministère du Travail, du Plein emploi et de l'Insertion (2023^[37]), and OECD (2023^[38])

Quality assurance mechanisms

With the proliferation of micro-credential offerings, the imperative to establish mechanisms for ensuring their quality has been a topic of discussion in many OECD countries. Micro-credentials are offered by a wide range of education and training providers, including private entities, who often fall beyond the purview of public quality assurance agencies. Micro-credentials are smaller, more targeted, and more flexible than traditional education and training programmes for which quality assurance policies and practices have been designed, and many quality assurance schemes may be ill-suited to the distinctive features and purposes of micro-credentials.

To fully unlock the potential of micro-credentials, information about the quality of offerings is essential for a range of stakeholders (ETF, 2022^[39]). Public authorities require robust data on the capability of providers and the quality of their programmes when establishing criteria for public funding eligibility. Education and training providers need evidence of quality, as well as other basic information about micro-credentials, to make decisions about the recognition of learning acquired through micro-credentials offered by other providers. Learners also benefit from knowing that programmes in which they are interested are meeting quality standards.

The landscape of quality assurance for micro-credentials is rapidly evolving, as regulatory bodies and educational institutions navigate the complexities of maintaining quality standards without stifling innovation (Brown and Duart, 2023^[40]; IMINQA, 2023^[41]). An emerging strategy is to permit institutions to take responsibility for micro-credential programmes, rather than undertaking programme-level review. However, this hands-off approach is typically not extended to providers for which regulatory bodies often maintain a closer oversight, such as private institutions and institutions that are not universities. Recognising that micro-credentials are new, quality assurance bodies are also moving forward in a careful and experimental way, for example, by implementing pilots to test policies before full-scale implementation of new quality assurance arrangements, as in Spain (Catalunya) and other jurisdictions.

Table 2.4 summarises examples of ongoing and implemented initiatives aimed at ensuring the quality of micro-credentials. These examples are discussed in detail in the following paragraphs in terms of a) levels at which quality assurance is planned and conducted (e.g. institutional and programme); b) relationships to existing quality assurance schemes; c) approaches to alternative providers; and d) the use of pilot schemes.

Firstly, an emerging global trend in the external quality assurance of micro-credentials is for quality assurance bodies to review the internal quality assurance mechanisms that institutions put in place for micro-credential learning, rather than undertaking programme-level reviews of micro-credentials. This approach is based on a commitment to create quality assurance procedures that are sufficiently flexible to accommodate the fast-changing micro-credential market, in which educators adapt to evolving skill demands. The Catalan University Quality Assurance Agency (AQU Catalunya) in Spain, for instance, conducted a programme accreditation pilot of 33 short learning programmes offered by nine Catalan universities in 2021, on the basis of which it concluded that the institutional-level approach would be better suited for micro-credentials, considering the anticipated growth in the number of micro-credential programs and administrative burden that this would impose on providers (Casadesus, Huertas and Edo, 2023^[42]).

Some countries, however, have implemented programme-level quality assurance systems for micro-credentials, though this level of scrutiny is reserved for only some institutions, such as private higher education institutions, or those that lack university status. In Ireland, for example, traditional and technological universities are granted credential-awarding powers and are responsible for the development and quality assurance of their programmes. Therefore, a national regulatory body, Quality and Qualifications Ireland (QQI), only evaluates these providers at the institutional level, while they examine programmes for other providers, most notably private independent providers. This two-way approach is

also used in New Zealand, where universities are outside the scope of programme accreditation organised by the New Zealand Qualifications Authority (NZQA).

Another way used to ensure the quality of micro-credentials while balancing risk against burden is assessment by study programme groups. The Estonian Quality Agency for Education (HAKA) conducted a pilot to assess the quality of continuing education providers between 2019 and 2022 and reported that the institution-based quality assessment did not work effectively for certain providers (ENQA, forthcoming^[43]). They found that some small non-formal training providers had a limited capacity to ensure the quality of their micro-credentials across various fields of study² and decided to shift towards a field-specific quality assessment approach, which can appropriately reflect providers' field-specific expertise. The Estonian case also takes different approaches to different providers. While non-formal education institutions, such as private companies and professional organisations, need to go through the above-mentioned micro-credential-specific quality assessment by fields of study to gain the right to offer micro-credentials, formal education institutions can be awarded the right through regular quality assessments.

A second emerging practice in the quality assurance of micro-credentials is a reliance upon existing quality assurance schemes. Among the ten jurisdictions presented in Table 2.4, New Zealand is the only country that established a new, standalone quality assurance procedure for micro-credential programmes. And even in this case, the new procedure introduced in 2018 only applies to non-university tertiary education providers, and universities, which are responsible for the quality of their education offerings, may extend their existing internal quality assurance systems to micro-credentials.

In some cases, such as Spain and the United Kingdom, quality assurance agencies propose to extend existing schemes to micro-credentials by including these programmes in the scope of institutional accreditation and reviews. In other cases, including Ireland, existing programme-level quality assurance schemes for smaller programmes, such as minor awards, special purpose awards and supplemental awards, are adapted to micro-credentials offered by private independent providers. And in others, including Malaysia, micro-credentials that are components of larger programmes accredited through existing quality assurance schemes are exempted from additional review.

When existing quality assurance systems are extended to micro-credentials, public authorities aim to adapt these systems to the distinctive size and learner profile of micro-credentials. QQI, for example, made their existing programme-level approval more proportionate and agile for smaller awards. More specifically, while they retained core principles and criteria for QQI validation, they streamlined validation templates and replaced an onsite QQI review with a remote, desk-audit-based evaluation by independent enterprises, which are subject matter experts. The Quality Assurance Agency for Higher Education (QAA) in the United Kingdom also proposes that the quality management policies of micro-credential awarding bodies may need to accommodate the diversity of learners in teaching, learning and student engagement.

Thirdly, in relation to concerned providers, some jurisdictions are including alternative providers – i.e. organisations that are not educational institutions, but instead those such as professional associations or firms, for which education and training are ancillary activities – in the scope of external quality assurance of micro-credentials. HAKA, for instance, has been assessing non-formal education providers, such as private companies and professional organisations, since 2018 (by institutions until 2022 and by study programme groups since then). The Malaysian Qualifications Agency (MQA) is currently working on extending its scope of micro-credential quality assurance to non-traditional providers, including industries. Under the new system, all short courses that assess learning outcomes and are credit-bearing will be able to apply for the MQA's review. Australia has begun to address the quality of provision by alternative providers through their National Microcredentials Framework, which stipulates that when these providers wish to list their programmes to a national micro-credential platform, they must publish "a statement of

² International Standard Classification of Education Fields of Education and Training (ISCED-F)

assurance of quality", which refers to a profile of the provider, a description of the quality assurance processes undertaken, and the process for review/ updating the micro-credential.

In other cases, traditional education and training providers are seen as a quality anchor for alternative providers. The Postsecondary Education Quality Assessment Board (PEQAB) in Ontario, for instance, proposes that quality-assured micro-credentials can use the official protected term "Ontario Micro-Credential (OMC)", and post-secondary education providers that have a provincially assigned external quality assurance agency are permitted to offer OMC. Others, including private career colleges, and industry and professional associations, cannot award OMCs independently and may seek partnerships with authorised institutions to award joint OMCs. A draft proposal for an Ontario Micro-credential Quality Assurance Framework explains "partnerships may take the form of joint delivery or delivery entirely by the partner industry/employer/etc. as long as the program and relationship have been reviewed and approved through the institutional quality assurance process. The testamur³ would note both providers as awarding the credential" (PEQAB, 2023, p. 32_[44]).

Another point to note is that there are a few cases where quality assurance agencies piloted approaches to micro-credentials before implementing procedures formally, including Estonia, Ireland, Spain and the United Kingdom. The British Accreditation Council, for instance, conducted a pilot of the micro-credential accreditation scheme in the autumn of 2022 and noted the value of this initial phase in giving inputs on future implementation. One of the findings from their experimentation was the importance of presenting a detailed definition of what can be classified as micro-credentials (ENQA, forthcoming_[43]).

There are also cases where the quality assurance of micro-credentials is tested as part of broader pilots to develop and offer micro-credentials. In the case of the Dutch National Microcredentials Pilot launched in 2021, 32 participating institutions agreed on the quality framework to be used in the pilot. The quality framework proposes that institutions are primarily responsible for the quality of their micro-credentials and therefore asks that they each set up an internal quality assurance process for these programmes (Acceleration Plan, n.d._[20]).

³ A testamur is an official document that certifies the successful completion of a study programme.

Table 2.4. Recent examples of quality assurance mechanisms for micro-credentials

Country	Organisation leading the initiative	Launch year	Level	Extension of existing scheme	Concerned providers	Streamlined procedure for certain providers/programmes	Pilot led by the organisation	Status
Australia	Department of Education, Skills and Employment	2022	Institutional	Yes	All types of education and training providers (including alternative providers)	Yes (for providers who have applied a regulated standard, such as those registered in the National Register of Higher Education Providers)	No	Concept being developed
Canada (Ontario)	Postsecondary Education Quality Assessment Board (PEQAB)	2023	Institutional	Yes	All types of post-secondary education providers (including alternative providers)	Yes (for providers who have a provincially assigned external quality assurance agency)	No	Concept being developed
Estonia	Estonian Quality Agency for Education (HAKA)	2022	Institutional and study programme group	Yes	All types of education and training providers (including alternative providers)	Yes (for formal education institutions)	Yes	Towards implementation
Ireland	Quality and Qualifications Ireland (QQI)	2020	Programme	Yes	Private independent providers	No*	Yes	Implemented
Malaysia	Malaysian Qualifications Agency (MQA)	2020	Programme	Yes	All types of higher education providers (including alternative providers)	Yes (for components of accredited programmes)	No	Implemented and in the process of revision

Country	Organisation leading the initiative	Launch year	Level	Extension of existing scheme	Concerned providers	Streamlined procedure for certain providers/programmes	Pilot led by the organisation	Status
New Zealand	New Zealand Qualifications Authority (NZQA)	2018	Programme	No	Accredited education providers (excluding universities)	No*	No	Implemented
Spain	National Agency for Quality Assessment and Accreditation (ANECA)	2022	Institutional	Yes	Higher education institutions	No	No	Concept being developed
Spain (Catalonia)	Catalan University Quality Assurance Agency (AQU Catalunya)	2020	Institutional	Yes	Higher education institutions	No	Yes	Towards implementation
United Kingdom	Quality Assurance Agency for Higher Education (QAA)	2022	Institutional	Yes	Higher education providers that are a member of the QAA	No	No	Concept being developed
	British Accreditation Council (BAC)	2022	Institutional	Yes	Independent further and higher education and training providers	No	Yes	Towards implementation

Note: *Universities and technological universities in Ireland and universities in New Zealand are responsible for the development and quality assurance of their programmes, and therefore, they are outside the scope of programme accreditation organised by the QQI and NZQA, respectively.

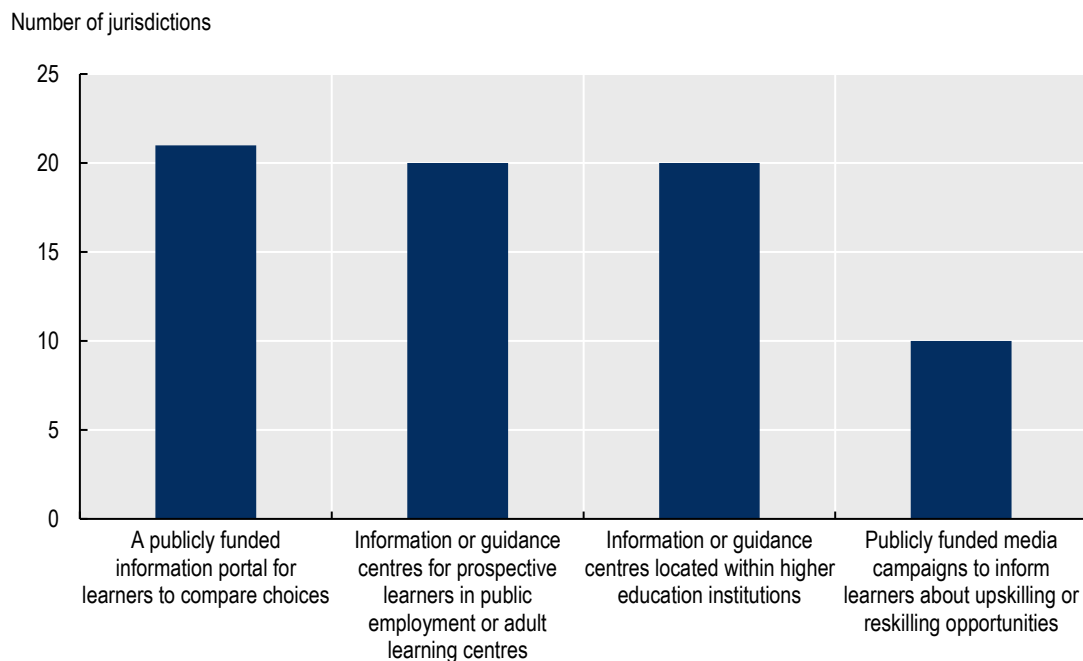
Source: MQA (2020^[14]), ANECA (2022^[45]), Australian Government (2022^[16]), QAA (2022^[46]), Brown and Duarte (2023^[40]), IMINQA (2023^[41]), NZQA (2023^[19]), PEQAB (2023^[44]), and ENQA (forthcoming^[43])

Information systems

Establishing mechanisms to gather information on different learning opportunities, to ensure that this information is comparable, and to display the information in one easily accessible place helps prospective learners evaluate different offerings and select programmes that meet their needs (Hofer, Zhivkovikj and Smyth, 2020^[47]). Public authorities are aware of this importance and have invested in establishing these mechanisms. According to the OECD Higher Education Policy Survey 2022, approximately 70% of responding jurisdictions have either an information portal or a guidance centre that allows prospective learners to explore reskilling and upskilling opportunities at the higher education level (Figure 2.4).

Figure 2.4. Provision of information and guidance to prospective learners

In response to the question “Which means are available for prospective learners to discover higher education reskilling or upskilling opportunities?”



Note: Total responding jurisdictions: 29

Source: OECD Higher Education Policy Survey 2022

However, the majority of the existing information tools primarily focus on degree programmes and do not necessarily cover information on micro-credential programmes. Degree programmes usually have clear definitions and operate within established regulatory frameworks, which facilitates the collection of comparable information about these programmes. Micro-credential programmes, on the other hand, still lack a universally recognised definition in many jurisdictions and are often offered as less regulated non-formal programmes and are often not established within higher education institution data reporting to ministries. Together, these pose challenges in gathering information on micro-credentials (OECD, 2023^[6]).

Nonetheless, some jurisdictions are moving forward with establishing online portals that encompass information about micro-credential programmes. In some cases, these portals are dedicated exclusively to micro-credentials, as observed in countries such as Australia, Canada (Ontario) and Ireland. In other cases, they include micro-credentials as one of the available learning options, as is the case in Finland,

Germany, Singapore and the United States. Table 2.5 lists these seven example initiatives, which are discussed in the following paragraphs with respect to a) leading organisations; b) the coverage of providers and programmes; and c) the types of provided information.

Firstly, public authorities have adopted a variety of methods to develop micro-credential portals. In some cases, public authorities are the main organisations leading the initiatives, while in others, they fund the initiatives and leave the implementation to rectors conferences or non-profit organisations. In Australia, for instance, the Department of Education works alongside the Universities Admission Centre to maintain and support MicroCred Seeker, while in Germany and Ireland, public authorities have funded a university association (the Irish Universities Association) and rectors conference (the German Rectors Conference, HRK) to develop the portals. And in Ontario, the government provided funding to eCampusOntario, a non-profit organisation, whose mission is to increase access to online learning, to develop the portal. Similarly, Credential Finder in the United States is developed by a non-profit organisation, Credential Engine, with financial contributions from both foundations, associations, and US states.

Secondly, many of the identified examples are not comprehensive; rather, they limit the scope of programmes and providers. For instance, MicroCred Seeker in Australia lists programmes including those that are funded through the Microcredentials Pilot in Higher Education. Similarly, in Ireland, an online platform developed as part of the MicroCreds project lists micro-credentials that are developed by seven public universities that participate in the project. The Micro-credentials Portal in Ontario also only lists programmes offered by colleges, universities and Indigenous Institutes.

There are online portals with a wider scope, but these initiatives tend to be voluntary. In Finland, for example, an online portal, *Opintopolku* (Studyinfo), can include a wide range of programmes offered by formal education and training providers, including continuous learning programmes. In Germany, *hoch & weit* (higher and further) can also list all types of further education programmes offered by public and government-recognised higher education institutions. However, in both cases, education and training providers themselves are responsible for the maintenance of the listed information, and they may choose not to list or update programme information. Credential Finder in the United States covers various formal and non-formal education programmes offered by a range of providers, including micro-credentials, but is also a voluntary initiative.

Thirdly, some online portals provide guiding and supplemental information, in addition to basic information about micro-credentials, such as fields of study, delivery modes, length and fees. Germany's *hoch & weit*, for instance, offers structured information on different types of university continuing education programmes (certificates, diplomas etc.) and financial support and advice tailored to adult learners. Finland's *Opintopolku* also provides an overview of higher education provision, including information on continuous learning programmes (i.e. open studies and professional specialisation studies). In addition, Singapore's MySkillsFuture allows learners to give feedback on the quality and economic impact of courses they completed in the five-point Likert scale, and their ratings are published on the portal. Credential Finder in the United States has a section on related occupations and industries on a programme information page.

Some governments are taking further actions to maximise the use of online portals by complementing them with offline support and launching marketing campaigns. In Singapore, for instance, pupils are introduced to the MySkillsFuture portal as an integral part of their career guidance curriculum in schools. Beyond this early exposure, Singapore offers the Skills and Training Advisory Services, providing personalised education, training and career consultations for all its citizens and permanent residents. Service beneficiaries can seek tailored advice on career transitions, required skill sets, suitable training programmes and available financial assistance schemes. Similarly, Ireland's MicroCreds initiative offers guidance to assist learners in choosing programmes best suited to their needs. They also organised a series of marketing campaigns both online and offline (e.g. advertisements on buses and at train stations) to increase the awareness and recognition of the initiative across the nation.

Table 2.5. Recent examples of information portals that cover micro-credential provisions

	Country	Name of the portal/project	Leading organisations	Launch year	Coverage of providers and programmes	Participation option	Provided information
Dedicated exclusively to micro-credentials	Australia	MicroCred Seeker	Australian Government Department of Education and Universities Admissions Centre	2022	Programmes funded through the Microcredentials Pilot in Higher Education	Part of the funding agreement	Programme information (including information on related industries) and the definition of micro-credentials
	Canada (Ontario)	Micro-credentials Portal	eCampusOntario with funding from the Government of Ontario	2021	Programmes eligible for the Ontario Student Assistance Program (OSAP)*	Voluntary	Programme information (including information on related occupations and labour market demand for these) and the definition of micro-credentials
	Ireland	MicroCreds	Irish Universities Association with funding from the Higher Education Authority	2023	Programmes offered by seven public universities that participate in the MicroCreds project	Part of the funding agreement	Programme information and the definition of micro-credentials
Include micro-credentials as one of the offers	Finland	Opintopolku	Finnish National Agency for Education	2013	Programmes offered by formal education and training providers	Voluntary	Programme information and the overview of the Finnish education system including continuous learning provision
	Germany	hoch & weit	German Rectors' Conference with funding from the Federal Ministry of Education and Research	2022	Further education programmes offered by public and government-recognised higher education institutions	Voluntary	Programme information, the overview of university continuing education and guidance tailored to adult learners
	Singapore	MySkillsFuture	SkillsFuture Singapore, Workforce Singapore and the Ministry of Education	2017	Programmes eligible for the use of SkillsFuture Credit (see Table 2.3.)	One of the requirements to be eligible for the use of SkillsFuture Credit	Programme information (including completers' reviews) and a self-assessment tool
	United States	Credential Finder	Credential Engine	2018	Programmes offered by all types of providers	Voluntary	Programme information (including information on related occupations and industries)

Note: *OSAP is a financial aid programme that helps students pay for college or university through grants and loans.

Source: eCampusOntario (2023^[48]), Government of Singapore (2023^[49]), MicroCreds (2023^[18]), Australian Government (n.d.^[50]), Credential Engine (n.d.^[51]), Finnish National Agency for Education (n.d.^[52]), and hoch & weit (n.d.^[53])

Considerations for policy implementation

In the quest to create a robust micro-credential ecosystem within which the offer and take-up of micro-credentials can flourish, public authorities have used four principal types of policy instruments: regulations and guidelines, public funding, quality assurance mechanisms, and information systems. The mix and design of these policy instruments varies from one jurisdiction to another, reflecting national contexts. However, initial policy implementation steps taken in the four countries that participated in the OECD-EC Micro-credential Implementation Project – Finland, the Slovak Republic, Slovenia, and Spain – as well as the experiences of some other education and training systems, provide a basis for considerations that policy makers across the OECD and EU may wish to bear in mind when adopting policy measures to support micro-credential learning.

Regulations and guidelines for micro-credential providers

Public authorities employ a variety of legal and advisory measures, including laws, decrees, and guidelines, to steer education and training offerings, including micro-credentials. Recognising the growing priority of credentialled lifelong learning for citizens, several countries have revised their higher education legislation to stipulate that lifelong learning is to be a mission of their higher education system, complementing traditional research and degree-education responsibilities. While symbolically important, these legal measures appear to be neither necessary, nor necessarily sufficient, for the development of robust micro-credential offerings. Many higher education institutions have chosen on their own initiative to move forward with micro-credentials or other offers of lifelong learning well before legal revisions in their respective jurisdictions. And abstract statements of new responsibilities do not provide the resources or detailed guidance that reluctant higher education institutions might seek to commence an offer of micro-credentials and for whom “what is a micro-credential, and how will it be financed?” are the most pressing questions.

Public officials have responded to these concerns and moved forward to address the question of “what is a micro-credential?” in many education and training systems. In legislation, decrees, and voluntary frameworks they have outlined the design of micro-credentials, defining their workload (typically in credits) and level (with reference to an NQF or degree structure). They have also stipulated – though less often and in less detail – additional aspects of micro-credential design, such as industry and social relevance, and stackability and portability.

Two observations can be made based on the review of the recent initiatives:

- In defining the size of micro-credentials, having broader criteria ensures flexibility and accommodates a range of micro-credentials that serve different purposes. While shorter programmes can be helpful in the quick correction of minor skill mismatches, longer programmes appear to be successful at helping adults with career changes. An example of this latter type is the Google IT Support Professional Certificate, which is considered to have the value of 12 academic credits in the United States (equivalent to 24 ECTS).

However, when public authorities wish to locate micro-credentials among existing lifelong programmes, they may narrow the scope of micro-credentials. In Spain, for instance, where universities have been authorised to offer a range of academic awards that have a credit workload less than a full bachelor’s degree, Royal Decree 822/2021 defines different types of unofficial credentials (*títulos propios*) that universities may offer, i.e. micro-credentials (less than 15 ECTS), certificates (up to 30 ECTS), expert diplomas (less than 30 ECTS), specialist diplomas (30-59 ECTS) and unofficial master’s degrees (60-120 ECTS) (OECD, 2023^[1]).

- While most governments wish to ensure the industry relevance and stackability of micro-credentials, they vary widely in the strength with which they steer providers in these directions. For

example, in New Zealand, education and training providers (excluding universities) must demonstrate evidence of the need for a particular credential through support from relevant stakeholders, including the Workforce Development Councils, which serve as industry representatives, if their programmes are to be nationally recognised by the NZQA. In many other systems, public authorities have stated that stackability or employability are desired outcomes of micro-credential learning, but not linked those goals to the authorisation or funding of specific micro-credential provision.

Public funding for micro-credential providers and learners

Public funding plays a pivotal role in the adoption of micro-credentials across OECD countries, serving as an incentive for both providers and learners. The 2022 OECD Higher Education Policy Survey reveals that two-thirds of responding jurisdictions have some form of public funding for micro-credentials. Strategies for funding vary, from exploratory approaches with temporary funding to more durable mechanisms like core public funding and individual learning accounts. Some countries combine both.

Four observations can be made based on the review of recent initiatives:

- Approaches to funding micro-credentials are shaped by the primary objectives of the initiatives, as well as the scale and duration of the available budget. Allocating targeted funding to providers can quickly shape and boost micro-credential offers. Providing funding to learners to acquire micro-credentials – e.g. through learning accounts or other forms of targeted support – may lead to a sustained increase in micro-credential take-up. However, the latter approach depends upon having high-quality, relevant micro-credential programmes – and information about them – already offered within an education and training system. If taking a longer-run view of policy design, public officials may wish to consider moving from an approach centred on subsidising providers to a system more focused on subsidies for learners as their micro-credential landscape matures.
- For the effective allocation of public funds, the appropriate selection of providers who benefit from support is crucial. In some systems, only public higher education institutions are eligible to obtain public funding that subsidises the creation and management of micro-credential programmes. However, in some jurisdictions, private higher education institutions have a distinct profile in offering professionally oriented learning, greater flexibility in adapting their offer to emerging skill demands, and stronger incentives to develop micro-credential programmes that are responsive to industry and social needs than do public universities. Where this is the case, policy makers may consider promoting collaboration between public and private education providers. This could involve engaging private higher education institutions in the initial design of micro-credential regulatory policies, encouraging public universities to partner with these institutions in developing micro-credential courses, and extending funding opportunities to accredited private institutions.
- When devising targeted funding, it is crucial to allocate an adequate time frame for the effective rollout of funded initiatives. While micro-credentials are shorter in duration than traditional degree programmes, this does not necessarily mean their implementation is simple or swift. The optimal duration of funding should be determined based on where the country stands at the time of the launch. In Australia, for instance, each round of the micro-credential pilot is set to span two years. It is feasible for providers to work under this short time frame partly because foundational groundwork, which gives a structure to follow when developing and delivering micro-credentials, had been completed before the launch. The initial policy discussions around micro-credentials started in 2020, with the “National Microcredentials Framework” being published in March 2022, and the pilot launched in November 2022. In other cases, where pilot projects entail preliminary steps like formulating a national definition, a longer time frame, such as five years, might be more practical. This is particularly the case when several stakeholders are engaged in decision-making.

Insufficient time allocation for the implementation of micro-credential initiatives can have unintended consequences. For example, funding might – for timing reasons – have to be distributed through simplified procedures, such as allocations based on the size of providers, and providers may understandably opt to reuse or repackage their existing curricula instead of creating new ones. This could, in turn, dilute the quality and impact of the micro-credential programmes, undermining the very objectives they were designed to achieve.

- Incorporating micro-credentials into existing core funding frameworks ensures more durability than approaches relying on targeted funding, although the incentive effects of core funding provision on curricular innovation may be limited. For example, in Finland, open studies (i.e. modules of degree programmes) are factored into the core public funding allocated to higher education institutions. Similarly, the United Kingdom is in the process of extending its income-contingent loan scheme to encompass smaller units of learning, such as modules. Both initiatives serve as pioneering efforts among OECD countries to integrate micro-credentials into established funding mechanisms, thereby ensuring continuity in micro-credential funding. However, the bulk of this funding appears to be channelled towards modules that are part of existing degree programmes. This allocation strategy may not sufficiently incentivise education providers to adapt their curricula and develop distinctive new offerings to meet the evolving demands of the labour market and society.

Quality assurance mechanisms

Public authorities are moving forward to establish quality assurance mechanisms for micro-credentials. Two key trends are emerging: a) institutional-level reviews and b) adaptations of existing quality assurance procedures. Institutional-level reviews ensure flexibility and lessen administrative burden on providers. Meanwhile, existing schemes are being modified to accommodate the unique characteristics of micro-credentials, and, in some instances, new, standalone quality assurance procedures are being developed.

Two observations can be made based on the review of the recent initiatives:

- Navigating the complexities of quality assurance requires a nuanced approach, especially when dealing with micro-credentials, which present both reduced risks and unique opportunities for innovation compared to traditional degree programmes. Striking the right balance in quality assurance involves mitigating the risk of poor-quality provision while also accounting for the constraints that rigorous quality assurance protocols can impose. Quality assurance is costly to comply with, it can retard innovation, and it can lead to operational inefficiencies. Micro-credentials, by their very nature, typically present fewer risks to learners and governments, in comparison to traditional academic degree programmes: they typically cost less and require less time to complete. And in principle they are supposed to be more dynamic and adaptive than longer programmes as they respond to changing labour market needs. Given these attributes, it would be prudent for quality assurance frameworks to acknowledge the lower risks posed by micro-credentials. Such frameworks should aim for greater flexibility to encourage rapid revision and innovation, thereby striking a different balance than in the case of traditional degree programmes. This tendency can already be observed in emerging practices, offering valuable insights for other jurisdictions to consider.
- The assurance of micro-credential quality by higher education institutions operating within national quality assurance systems is an essential feature of a micro-credential ecosystem. It fosters trust among education and training providers and underpins the mutual recognition of these credentials among education and training institutions, and the stackability of micro-credentials that permit learners to pursue their academic learning goals. Furthermore, quality assurance is crucial to building trust among public auditors and policy makers, warranting the investment of public funds in micro-credentials.

Employers will often look for different assurances than those sought by public quality assurance bodies, seeking more specific, granular information about the relevance of skills and competencies developed by micro-credentials to working life. The involvement of employers and industry stakeholders in the design, delivery and review of micro-credential programmes plays an important role in ensuring the value and currency of micro-credentials within labour markets. There are robust examples of close engagement that are especially prevalent in technical and vocational education and training, for example, the MBO (*middelbaar beroepsonderwijs*, vocational upper secondary education) system in the Netherlands and T-level qualifications⁴ in the United Kingdom (Institute for Apprenticeships and Technical Education, 2023^[54]; OECD, 2023^[6]). These can serve as examples of practice that may be incorporated into funding requirements or that accrediting organisations may ask of educational institutions.

Information systems

While most OECD countries have established public information portals or guidance centres focusing on traditional degree programmes, micro-credential programmes are typically absent from these information resources. This stems, in part, from the recent emergence of micro-credential learning, and from a more general pattern in which jurisdictions less often carry out coordinated and standardised reporting of information about non-degree programmes in higher education than for degree-based instruction. Nonetheless, some jurisdictions are moving forward with establishing online portals that encompass information about micro-credential programmes. Some jurisdictions have dedicated portals exclusively for micro-credentials, whereas others have integrated them into broader information tools that map educational offerings. Additional services, including offline support and marketing campaigns, are being used to enhance the efficacy and reach of these online information portals.

Two observations can be made based on the review of the recent initiatives:

- Among the numerous steps required to develop online micro-credential portals, the most critical is the establishment of common descriptors that can be used by a range of providers. The presence of a standardised list of descriptors not only enables learners to make structured comparisons among programmes but also facilitates mutual academic recognition between education and training providers. Additionally, such common descriptors significantly enhance interoperability across various online learning platforms.

Recognising the importance of common descriptors, governments and international organisations are moving forward to develop frameworks that can be used by providers. For instance, Annex I of the *EU Council Recommendation on a European approach to micro-credentials for lifelong learning and employability* outlines common European standard elements for describing micro-credentials. Mandatory elements include learning outcomes, the notional workload required to achieve those learning outcomes, the level of the learning experience, types of assessment and the quality assurance mechanisms underpinning the micro-credential. Similarly, public authorities in non-European countries, such as Australia and Malaysia, have also published lists of descriptors to standardise the description of micro-credential learning.

- While information portals for conventional academic programmes in many OECD countries are increasingly incorporating statistical data on labour market outcomes, there is a noticeable absence of such data in micro-credential information portals. One notable advancement is Singapore's "MySkillsFuture" platform, where prospective learners can access course feedback from past participants, including assessments of quality and economic impact, utilising a five-point Likert scale.

⁴ T Levels are two-year vocational upper secondary courses which can be taken after General Certificates of Secondary Education (GCSE), introduced in 2020.

This limited use of outcome data largely stems from the paucity of evidence regarding the economic impact of micro-credentials, which is due in part, to a series of obstacles that hinder the collection and evaluation of reliable data. First, unlike traditional educational qualifications, micro-credentials and other "alternative credentials" are not featured in national graduate tracking programmes, population censuses, or household and labour force surveys. Secondly, much of the relevant data on employment and wage outcomes for these credentials is proprietary, often held by education and training organisations, making it either inaccessible or insufficient for a comprehensive assessment. Thirdly, the non-standardised nature of micro-credentials – varying substantially in duration and the ISCED levels at which they are offered – complicates efforts to generalise their impact. Moreover, the diversity of learners served by these programmes further complicates the data landscape.

Nevertheless, initiatives to compile data on the impact of micro-credentials are in progress. In Australia and Slovenia, for example, providers participating in national micro-credential pilots are mandated to submit outcome data. Concurrently, in the United States, efforts are being made to enhance transparency around the value of industry certifications by linking multiple data sets, specifically, data from certification bodies, educational attainment and enrolment statistics from post-secondary institutions, and aggregate wage data from the Census Bureau (OECD, 2023^[6]).

Annex A. A self-assessment tool for implementing micro-credential policies

The purpose of this tool

This self-assessment tool for policy makers has been developed to support the adoption and implementation of policies that underpin the offer of micro-credentials in national education and training systems. It aims to support the work of those who share responsibility for the development and implementation of policy, including ministries and departments of higher education, higher education agencies, quality assurance bodies, and their partners in government with responsibility for vocational education programmes and employment training.

It identifies a range of policy measures that may be needed, in the fullness of time, for an effective offer of micro-credentials, focusing on providers, learners, and the quality, relevance, and portability of micro-credential provision. The measures are informed by the *EU Council Recommendation on a European approach to micro-credentials for lifelong learning and employability*, the work of expert advisory bodies, such as the European Centre for the Development of Vocational Training (Cedefop), the European Association for Quality Assurance in Higher Education (ENQA) and the European Training Foundation (ETF), and by leading international practices. With 25 policy dimensions in five distinct policy categories (Figure A.1), the self-assessment tool aims to be comprehensive in scope and generally applicable to any education and training system. Each jurisdiction will wish to judge what priority and sequence to attach to the adoption of these implementation measures.

Figure A.1. Building blocks of micro-credential ecosystems

Micro-credential policy categories



This document has two principal uses. First, it provides a checklist for policy makers and stakeholders to use as they take stock of what policy measures are in place in their system, and what further measures remain to be adopted. In addition, this checklist supports peer learning by providing countries with a common framework for discussing and communicating their progress across national boundaries, and with international bodies.

With initial implementation completed, higher education systems should be able to commence monitoring and reporting on the performance of their micro-credential ecosystem, providing an account of the scale, focus, and level of micro-credential learning programmes, the learners who are being served, and the outcomes experienced by learners.

Using the tool

Countries are invited to take stock of where they stand in the implementation of micro-credential policies, using the five implementation levels (Figure A.2). The first four comprise a scale of implementation from consultation to completed implementation. The last category, “not applicable to our education and training system”, recognises not all measures may be relevant or appropriate for each government.

Figure A.2. Policy implementation levels



The exact mix of micro-credential policies that national authorities plan to implement will depend upon the educational and training institutions they have in place, the education and training offers already established, and what they envision micro-credentials should achieve, and for whom. Self-assessment will therefore begin with public authorities, educators, and key stakeholders identifying the learner populations they wish micro-credentials to serve, and the outcomes they wish to achieve for these learners.

A. Micro-credential providers

The legal and financial policies governing education and training establish a network of micro-credential providers that are fit for purpose in the offer of micro-credentials.

		Formal consultation	Policies under development	Implementation in progress	Policy implemented	N/A
1.	Legislation governing degrees authorises the award of micro-credentials by officially recognised education and training providers.					
2.	Public policy establishes an attractive and sustainable financial model for the offer of micro-credentials by providers, either by authorising fee-based micro-credential programmes, or by providing public subsidies for the offer of micro-credential programmes.					
3.	The employment and staffing models of micro-credential providers ensure the availability of instructors who are willing and able to design and offer micro-credential learning.					
4.	Micro-credential providers are obligated to provide learning and co-curricular support adapted to learner needs.					
5.	Alternative providers (e.g. non-profits, or for-profit training firms) are authorised to offer micro-credentials, either in collaboration with an officially recognised education and training provider, or as an approved/recognised provider themselves.					

B. Micro-credential learners

Public policies ensure that learners have the information they need to choose among micro-credential learning opportunities, the capacity to meet the cost of learning, and ownership of their learning credentials.

		Formal consultation	Policies under development	Implementation in progress	Policy implemented	N/A
6.	Learners have access to information about micro-credential learning opportunities that is comparable, understandable, relevant, and easily accessible in a web-based platform.					
7.	Higher education institutions and schools provide information about micro-credential learning opportunities and pathways through their counselling and advising systems.					
8.	Policies ensure that learners who need financial aid to obtain a micro-credential have access to support sufficient to permit their learning (whether through, e.g. grants, fee waivers, or loans).					
9.	Micro-credentials are owned by the learner, and they are stored and shared through digital wallets using an open data infrastructure.					

C. Credential recognition, portability, and transparency

Public policies ensure that the credentials obtained by learners are transparent, portable, and widely recognised.

		Formal consultation	Policies under development	Implementation in progress	Policy implemented	N/A
10.	Micro-credential providers use common descriptors. These include: a) Learner ID (i.e. a secure, unique and persistent identifier) b) Title of micro-credential (aligned to occupational or programme taxonomy) c) Legal identity of issuing body (institution/enterprise ID) d) Date and location of issuance e) Learning outcomes f) Workload needed to achieve outcome (e.g. credits, ECTS) g) Award level (aligned to NQF) h) Type of assessment used i) Form of participation in learning activity j) Type of quality assurance used to underpin credential k) Identity verification and supervision during assessment					
11.	Procedures for the recognition of prior learning and validation of non-formal/informal learning have been adapted to permit competency-based award micro-credentials.					
12.	Micro-credentials are aligned to or integrated into the NQF.					
13.	The National Information Centre has established recognition procedures for micro-credentials.					

D. Quality assurance and relevance

The quality and relevance of micro-credentials are assured by the providers of micro-credentials, the external bodies accredit them, by the close engagement of providers with the world of work, and by data exchanges that make employment and academic advancement transparent.

		Formal consultation	Policies under development	Implementation in progress	Policy implemented	N/A
14.	External quality assurance criteria and practices have been reviewed and revised to ensure their suitability to micro-credentials (e.g. more agile and flexible, applicable to different modes of delivery, well-aligned to changing industry and professional skill standards).					
15.	The external quality assurance of micro-credential providers is informed by relevant regional and international standards and guidelines (e.g. in Europe, the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG)).					

42 | No. 85 – Public policies for effective micro-credential learning

		Formal consultation	Policies under development	Implementation in progress	Policy implemented	N/A
16.	Officially recognised education and training providers have taken responsibility for the development of internal quality standards and processes adapted to micro-credentials.					
17.	Micro-credential providers and external quality assurance results are accessible to the public in a database of external quality assurance results (e.g. in Europe, the Database of External Quality Assurance Results (DEQAR)).					
18.	Micro-credential providers include industry and professional bodies in the development and revision of micro-credentials and solicit feedback from them about the skills of learners who have obtained micro-credentials.					
19.	Micro-credential providers seek feedback from learners about their learning experiences as part of quality assurance.					
20.	Employment and earnings information about the outcome of micro-credential awards is obtained by linking education records to labour market microdata.					
21.	Micro-credential providers exchange learner microdata, permitting the monitoring of stacking and portability of micro-credentials.					

E. Policy coordination

Public authorities co-operate across education and training systems to ensure that information, funding, and quality assurance policies are complementary rather than working at cross purposes.

		Formal consultation	Policies under development	Implementation in progress	Policy implemented	N/A
22.	Micro-credential information is provided through publicly funded information portals for education and training opportunities, employment/job training centres, and labour market web-based information resources.					
23.	Micro-credential learning is supported by funding instruments used in the education and training sector (such as grants and loans), as well as by job training/employment service funding benefits, individual learning accounts or tax benefits.					
24.	Quality assurance policies for both education and employment training programmes are adapted to the offer of micro-credentials.					
25.	Education and labour/employment authorities have procedures to notify and coordinate with one another policies having an impact on micro-credential offerings and learners.					

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Recent work on micro-credentials:

- OECD (2023), "Micro-credentials for Lifelong Learning and Employability: Uses and Possibilities", OECD Education Policy Perspectives, No. 66, OECD Publishing, Paris, <https://doi.org/10.1787/9c4b7b68-en>.
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