New Learning and Teaching Models with a Focus on Micro and Digital Credentialing Report

A report by Dr Doug Belshaw and Laura Hilliger of We Are Open Co-op. Commissioned by the N-TUTORR National Digital Leadership Network

National Digital Leadership Network

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Author biography

Dr Doug Belshaw, Laura Hilliger, and John Bevan are co-founders of We Are Open Co-op, a collective focused on digital education, open technologies, and community-driven innovation. We Are Open Co-op draws on extensive experience to develop credentialing solutions that support lifelong and broad learning for diverse groups. The co-op is committed to openness, collaboration, and using technology to improve learning opportunities and promote inclusive educational practices.

We Are Open Co-op website: https://weareopen.coop

Abstract

This report explores the role of micro and digital credentialing in Irish higher education. It addresses the ambiguity around the term 'microcredential' and argues for adopting technical standards like Open Badges v3 to establish a clear and interoperable framework.

The report encourages the Irish Technical University sector to recognise a broader spectrum of the student experience beyond traditional academic achievements. It examines emerging technologies for their potential to support flexible, secure learning pathways, ensuring that student skills and achievements are accessible and verifiable. Additionally, the report considers global examples, including initiatives from the European Digital Credentials for Learning, analysing how they can be integrated into the Irish context to support lifelong learning and workforce readiness.

Ultimately, this report provides a strategic lens for Irish higher education leaders to navigate the evolving landscape of digital credentialing, aligning these advancements with institutional priorities and enhancing the overall student experience.

Introduction to the National Digital Leadership Network Report Series

The National Digital Leadership Network (NDLN) is a collaborative initiative designed to support digital transformation across Ireland's Technological Higher Education sector. Established under the N-TUTORR programme with funding provided through the EU's NextGenerationEU initiative, the network was officially launched in November 2024 to provide a national platform for digital leadership, while also facilitating associated knowledge exchange and strategic collaboration. While the N-TUTORR programme has now concluded, our network continues its work under the guidance of a steering board composed of sector leaders and external experts.

Digital leadership in higher education extends far beyond technical expertise or the adoption of certain tools and platforms: it's about vision, strategy, and culture change. Effective digital leaders ensure that digital strategies and developments align with institutional and national priorities, not only enhancing teaching, learning, research, and administration functions but also upholding academic values, promoting equity, and driving business innovation. In this context, the NDLN fosters collaboration among higher education leaders, policymakers, and practitioners, providing opportunities to share insights, explore emerging challenges, and develop shared solutions.

As part of its work, the NDLN has commissioned a series of horizon-scanning reports authored by leading national and international scholars and practitioners. These reports explore key trends at the intersection of digital innovation, traditional leadership and strategic planning, providing actionable insights to support higher education institutions in aligning these trends and related opportunities with institutional and national priorities. Covering topics such as the evolving role of generative AI in academia, data-driven decision-making, academic integrity, new models of learning and teaching and new ways to plan for financial sustainability, this report series offers timely advice and direction for higher education leaders navigating the interrelated complexities of the digital and post-digital age.

We extend our gratitude to the N-TUTORR programme for its financial support, and to N-TUTORR Co-ordinator Dr Sharon Flynn for her direction and continued support of the network. Thank you also to members of our national steering board and to our external contributors, in particular Professor Lawrie Phipps.

A big personal thank you in addition to my colleagues in the Department of Technology Enhanced Learning (TEL) at MTU— especially Darragh Coakley and Marta

Guerra— whose work has been vital to the preparation and publication of these reports. We are also very grateful to Dr Catherine Cronin, our chief editor, and, of course, to all our authors whose insights, expertise, and dedication form the heart and foundation of this series.

We invite you to engage with these reports and join us in shaping the future of digital leadership in higher education.

Dr Gearóid Ó Súilleabháin
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Glossary

Artificial intelligence (AI) – The use of computer systems to perform tasks typically requiring human intelligence – such as pattern recognition, decision-making, and problem-solving – often powered by machine learning algorithms

Blockchain – Decentralised digital ledger technology that records data in a distributed and immutable manner, sometimes proposed for use in credential verification but with significant challenges related to scalability, privacy, and sustainability

Bologna Open Recognition Declaration (BORD) – Statement advocating for open and flexible recognition practices in education and employment, aligned with the Bologna Process

Comprehensive learner record (CLR) – A digital record that captures a learner's full range of experiences, achievements, and competencies in a portable format

Digital badge – Digital indicator of accomplishment, skill, quality, or interest that can be earned in various learning environments. Digital badges are visual images which represent something on a platform, and the term is often used in informal or non-formal learning

Digital credentialing – The practice of using digital tools to issue, share, and verify qualifications, skills, and achievements, enabling broader recognition across formal, informal, and non-formal learning contexts

Durable skills – Transferable, long-lasting abilities such as critical thinking, communication, and collaboration,(historically referred to as "soft skills"), that are essential across a wide range of industries and roles

European Digital Credentials for Learning (EDC) – Standardised framework for issuing and verifying digital credentials across Europe

European Learning Model (ELM) – Data model supporting the interoperability of digital credentials within the European educational ecosystem

General Data Protection Regulation (GDPR) – A European Union regulation that governs the protection of personal data and privacy

Interoperability – The ability of different products, systems, or applications to work together and exchange information seamlessly, without special effort from the user

Learning and employment records (LERs) – Digital documents that integrate an individual's learning achievements and employment history into a single record

Microcredentials – Short, focused qualifications that focus on a specified professional or career discipline, an umbrella term used mainly in HE to refer to new forms of recognition of learning

Open Badges – Widely-adopted technical standard for issuing, sharing, and verifying digital badges representing achievements. Open Badges provide a visual, provable way to represent a skill, relationship, or identity

Open Recognition – Practice of acknowledging and validating skills, achievements, and experiences using open and inclusive frameworks. This approach often uses technologies such as Open Badges and Verifiable Credentials, with the aim to build a "learning society". Open Recognition uses badges in ways that go beyond using them only as credentials

Open Recognition Alliance (ORA) – Global initiative supporting the development and adoption of open recognition practices

Open source – Development model that promotes free access to a product's design or blueprint, enabling a community of users to use, modify, and distribute the work collaboratively

Quality assurance frameworks – Structured approaches to ensuring that educational credentials meet consistent standards of quality and reliability

Recognition of prior learning (RPL) – Process through which skills and knowledge acquired outside formal education are formally recognised

Special purpose awards (SPAs) – Irish HE qualifications designed for specific, narrowly focused skills or competencies

Stackable learning pathways – Education routes that allow learners to accumulate smaller, modular credentials, such as microcredentials, which can be combined or "stacked" to achieve larger qualifications or meet specific career and educational goals

Verifiable Credentials – Digitally signed, tamper-proof certificates that confirm achievements, competencies, or attributes, which can be used across various domains, including education, professional qualifications, and personal identification, such as driving licenses or passports. Verifiable Credentials provide a data model which can be used for almost anything, including the latest version of the Open Badges standard.

Executive Summary

This report examines the growing significance of microcredentials in supporting lifelong learning and meeting evolving skills demands. The focus is on Ireland's technological university (TU) sector in particular.

The report describes how microcredentials can enhance flexible learning pathways for students and provide accessible upskilling opportunities for staff development, aligning with Ireland's national education and skills strategies. While exploring emerging trends and technologies – including skills-based hiring, artificial intelligence (AI) verification, and the latest version of the Open Badges standard – the report examines ways in which the concept of Open Recognition can provide a more holistic approach to microcredentialing. This approach is of benefit to learners, educational institutions, and enterprise, providing a key differentiator to initiatives which see microcredentials simply as a way to make existing approaches more granular.

The challenges and risks of models that use microcredentials are succinctly described, and the report offers recommendations for Irish TUs to effectively navigate this evolving educational landscape. Chief among these recommendations is that microcredentials should have a digital underpinning by default. The report also recommends the creation and adoption of a flexible national framework for microcredentialing, their use for both student learning and staff/workforce development, the embedding of Open Recognition principles, and deeper engagement with enterprise.

Introduction

This report provides higher education (HE) leaders, particularly in the TU sector, with insights into the evolving field of micro- and digital credentialing as well as its impact on learning and teaching practices. By examining the potential of microcredentials to transform HE, the report directly addresses the key National Digital Leadership Network theme of "New Learning and Teaching Models". Key objectives of the report include helping senior leadership in TUs understand and assess microcredentialing initiatives while being aware of current and emerging innovations and trends.

Scope And Limitations

The use of microcredentials has grown exponentially over the last few years. As such, no report can provide an exhaustive overview of the many ways in which they are being used around the world. Instead, this report provides an overview of emerging technologies within the field, key trends relevant to the Irish HE context, and ways in which microcredentials can be used in alignment with national education and skills strategies.

While the authors of this report aim to provide a fair and objective account of the sector, they have been involved in this space since the beginning of the Open Badges standard. As such, they have their own biases and preferences, and over the past fourteen years have seen trends come and go. The premise of this report is that microcredentials should be based on an open, digital, global standard and, moreover, that they can be offered in ways which recognise skills and abilities more holistically than the way they are currently being used by many institutions.

Methodology

The authors are grateful to Prof. Irene Sheridan, Dr Sharon Flynn, and Dr Wayne Gibbons for their help in providing useful context with regard to the TU sector in Ireland, including pointers to relevant publications for the literature review. Their insights were invaluable; any mistakes and omissions remain the fault of the authors.

Using their extensive experience in this space, the authors have pointed to examples in academic journals, reports, blog posts, and other media which highlight some

of the pioneering work taking place globally. They have used these examples in their assessment of challenges and risks, as well as in identifying future opportunities for the TU sector.

How to Read this Report

This report is divided broadly into three sections, covering the past, present, and future of microcredentialing. The first part of the report sets the scene by introducing some historical context. This situates current developments as the culmination of a longer timeline of developments in credentialing. It also defines terminology in a way which aims to help the reader tease apart the plethora of acronyms and new terminology in this space.

The second part of the report deals with the present situation, including emerging trends and technologies. It explores challenges and risks when embarking on microcredentialing initiatives and references case studies, promising practices, and other examples, details of which can be found in the Appendix.

The third part of the report discusses the future outlook and opportunities for microcredentials in the Irish TU sector, based on the context given in previous sections. The conclusion then summarises recommendations contained in the report.

Historical Context

Credentialing has a rich history, evolving over centuries to reflect the need for wider recognition of knowledge, skills, and achievements. While microcredentials might seem like a recent development, they are part of a broader tradition rooted in the practices of education, commerce, and professional development.

The Evolution of Credentialing

The history of recognition and credentialing goes in tandem with the history of learning. Ancient Egypt used training and recognition to confer authority, and ancient China established one of the earliest merit-based systems with its civil service examinations. In the Middle Ages, craft guilds recognised skills through apprenticeship programmes. By the nineteenth century, credentials were important for the professional classes, and in the twentieth century the growth of short-term courses required the use of certificates for specific skills, culminating in continuing professional development (CPD) credits. This formalised lifelong learning and recognised incremental skill-building to enable workers the flexibility to adapt and grow in their fields.

Microcredentials represent the next stage in the evolution of credentialing. In Ireland, special purpose awards (SPAs) and minor awards offer targeted, flexible learning options. Over the last decade, short courses have begun to be described as "microcredentials", especially when they are offered either fully online or in a blended context. However, these credentials often lack modularity and do not readily integrate into broader qualifications (Quality and Qualifications Ireland, 2024). Ironically, given that the teaching and learning which lead to these microcredentials are often digital, the way that they are certificated often remains analogue.

Microcredentials represent the next stage in the evolution of credentialing.

The early 2010s saw the emergence of massive open online courses (MOOCs) and other flexible approaches leveraging the power of online learning (Hickey & Chartrand, 2020). The development of the Open Badges standard was an attempt to provide a technological underpinning to online certification. This will be discussed in detail later, but for now it is worth pointing out that the shift towards smaller, skills-focused units of learning went hand in hand with the development of a globally recognised framework for issuing and verifying digital credentials (Casilli & Hickey, 2016).

Figure 1: Google Ngram Viewer: Micro-credentials, microcredentials

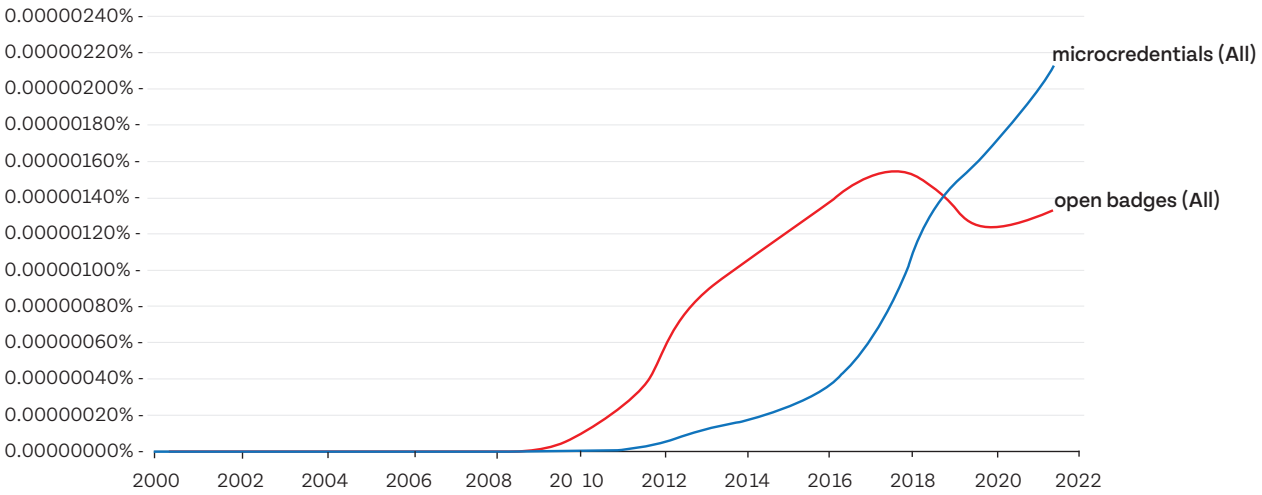


Figure 1 shows a chart plotting the frequency of particular web search terms. The term "microcredentials" gained traction from around 2012 onwards. In the authors' experience, stakeholders within formal education did not warm to the term "badges", tending to avoid using it in academic and professional contexts. Academic institutions, in an attempt to formalise terminology, started using the term "microcredentials" to describe short courses without necessarily building the certification for these courses on top of technical standards.

The Evolution of Microcredentials in Ireland

The narrative surrounding microcredentials has developed and accelerated over the past few years. This reflects an increasing recognition of their potential to address skills gaps and support lifelong learning in a fast-changing economy. They are still predominantly seen through the lens of "short courses", although there is a growing understanding of microcredentials as distinct tools for workforce development and flexible education.

Microcredentials began to gain prominence in Ireland from 2018 onwards, when the government introduced policy initiatives focused on upskilling employees, particularly those in vulnerable groups and those working in small- and medium-sized enterprises. While these early frameworks did not explicitly reference microcredentials, they established the foundation for the emphasis on flexible, targeted learning opportunities (Cedefop, 2023). By 2020, SOLAS, the state agency whose focus is building the further education and training (FET) sector in Ireland, included microcredentials in

its 2020–4 strategy, marking perhaps the first significant policy-level mention of these qualifications.

This momentum continued in 2021 when Quality and Qualifications Ireland (QQI) began developing working definitions for microcredentials, signalling their growing prominence in the education landscape. The Multi-Campus Microcredentials Programme invested in the creation of a coherent framework for HE microcredentials during this period (Cedefop, 2023). These developments represented a clear shift from implicit support from QQI for short courses to explicit recognition of microcredentials as tools for addressing evolving skills needs.

By 2023, Irish HE providers were able to highlight the transformative potential of microcredentials (Mooney, 2023), outlining their ability to:

- Target specific skill gaps with precision
- Stack towards larger qualifications
- Align with industry needs for CPD
- Enhance employability and career progression
- Support lifelong learning in a rapidly changing economy

Microcredentials are still emerging in Ireland, with ongoing efforts to integrate them into education and training systems. Developments are unevenly distributed, with some institutions forging ahead and others taking a more cautious approach.

Technology's Role in Credentialing

Whether paper, official seals, or decentralised ledgers, technology influences credentialing methods. With the rise in online education and remote working, there is a pressing need for a common way to demonstrate skills remotely, when it is not possible or practical to show physical paper certificates.

During the pre-pandemic excitement around blockchain technologies, there was much talk about blockchain-based credential verification. An example of this is Singapore's OpenCerts initiative, which issues "tamper-proof certificates" (Singapore Government Developer Portal, 2024). However, the use of blockchains in this context runs into numerous issues, not least around the creation of new silos, potential issues with General Data Protection Regulation (GDPR) compliance, and both financial and environmental costs.

As a result, the Open Badges standard, which has been continually developed since 2011, is the preferred technical standard due to its inherent scalability and compatibility with global systems (1EdTech, 2024). When underpinned by these

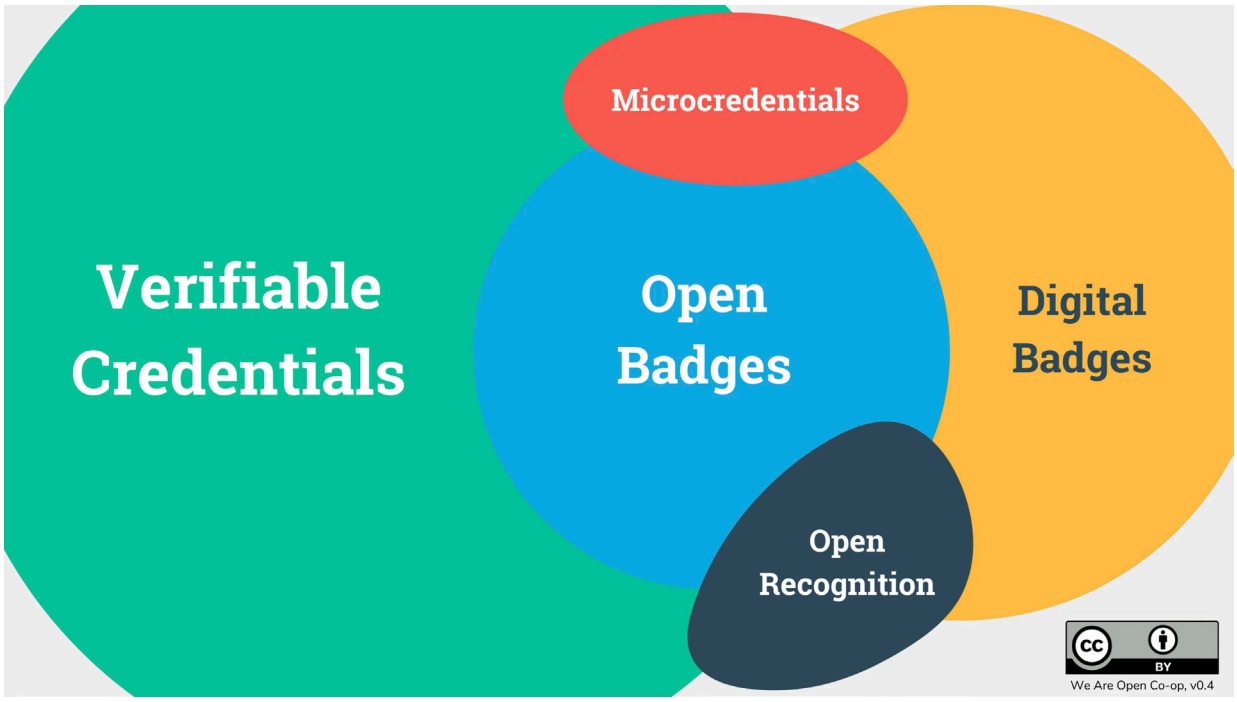
technological advancements, microcredentials provide a modular and adaptable way to validate learning. As Irish TUs develop their own approaches, aligning with the Open Badges ensures that credentials remain relevant, portable, and impactful in supporting learners and enterprise alike.

Defining Terms

There is a plethora of terms in the wider digital credentialing space, some of which are shown in Figure 2. Defining these terms may be useful to help understand what follows, with a full glossary included towards the end of this report (Belshaw, 2021a):

- Microcredentials: Short, focused qualifications based on a specified professional or career discipline. An umbrella term used mainly in HE to refer to new ways to recognise learning; not every microcredential is a digital badge.
- Digital badges: A digital indicator of accomplishment, skill, quality, or interest that can be earned in various learning environments. Digital badges are visual images which represent something on a platform, and the term is often used in informal or non-formal learning. Not every digital badge is an Open Badge.
- Open Badges: A widely adopted technical standard for issuing, sharing, and verifying digital badges representing achievements. Open Badges provide a visual, provable way to represent a skill, relationship, or identity. Not every Open Badge is a Verifiable Credential.
- Verifiable Credentials: Digitally signed, tamper-proof certificates that confirm achievements, competencies, or attributes, which can be used across various domains, including education, professional qualifications, and personal identification, such as driver's licenses or passports. Verifiable Credentials provide a data model which can be used for almost anything, including the latest version of the Open Badges standard.
- Open Recognition: A practice of acknowledging and validating skills, achievements, and experiences using open and inclusive frameworks. This approach often uses technologies such as Open Badges and Verifiable Credentials, with the aim to build a "learning society". Open Recognition uses badges in ways that go beyond using them only as "credentials".

Figure 2: Reflecting on the evolving badges and credentials ecosystem (CC BY WAO)



Open Badges: A Brief History

Understanding the development of Open Badges is crucial to understanding the history of microcredentials, as it provides insights into the current state of play in the Irish TU sector and further afield.

The Mozilla Foundation, a global non-profit organisation, was initially funded by the MacArthur Foundation to develop the Open Badges standard. The aim and scope of the project was outlined in a foundational white paper (Mozilla Foundation & Peer 2 Peer University, 2012) proposing four learner scenarios, published around the same time as MOOCs were gaining prominence. As a result, there was a serious discussion about the relevance and future of formal education.

The original vision for Open Badges was to democratise the means of credentialing. For example, the white paper states:

> The open Web has enabled increased access to information and to each other, as well as provided a platform for many new ways to learn and new skills to achieve. We no longer must rely solely on expert authority or professionally produced artifacts to provide the information or experiences we seek; instead, we can find them from peers or create them ourselves online. Courses are no longer confined to classrooms or expensive universities. Instead, open education initiatives …

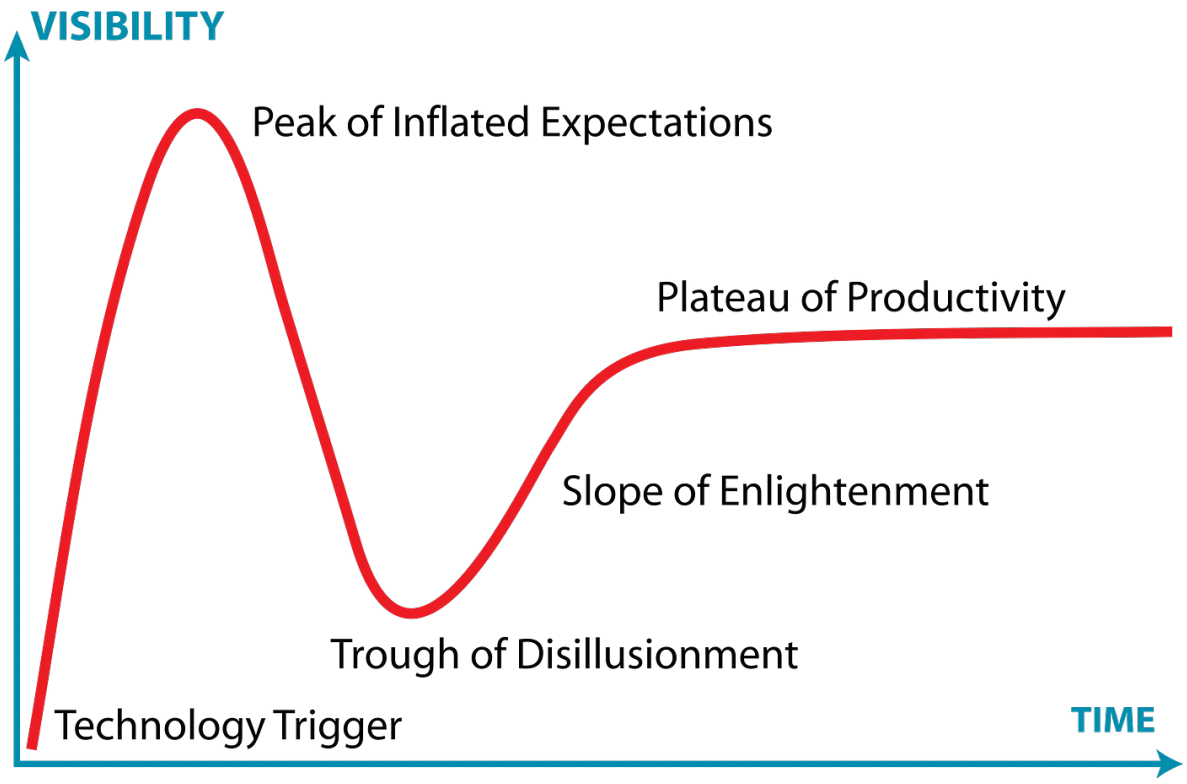
> capitalize on the openness of the Web and the peer network it supports. These projects provide paths to learning that are unbundled from the financial, social, geographical, and cultural barriers of formal education. (Mozilla & Peer 2 Peer University, 2012)

Due to the somewhat radical nature of the white paper, and its alignment with Connected Learning (n.d.), some academics expressed concerns around "rigour" and replacing "intrinsic" motivation with badges, which were seen as "extrinsic" motivators. However, given the amount of funding provided, the amount of traction Open Badges received, and the zeitgeist around alternative methods of credentialing, universities had to respond. They did so by slowly replacing the term "Open Badges" with "microcredentials".

The Metamorphosis to Microcredentials

The Hype Cycle, shown in Figure 3 below, is a graphical framework created by the American research and advisory firm Gartner (n.d.). It illustrates the maturity, adoption, and societal impact of emerging technologies. The model outlines the progression of these technologies through five distinct phases, offering both a conceptual and visual representation of their development.

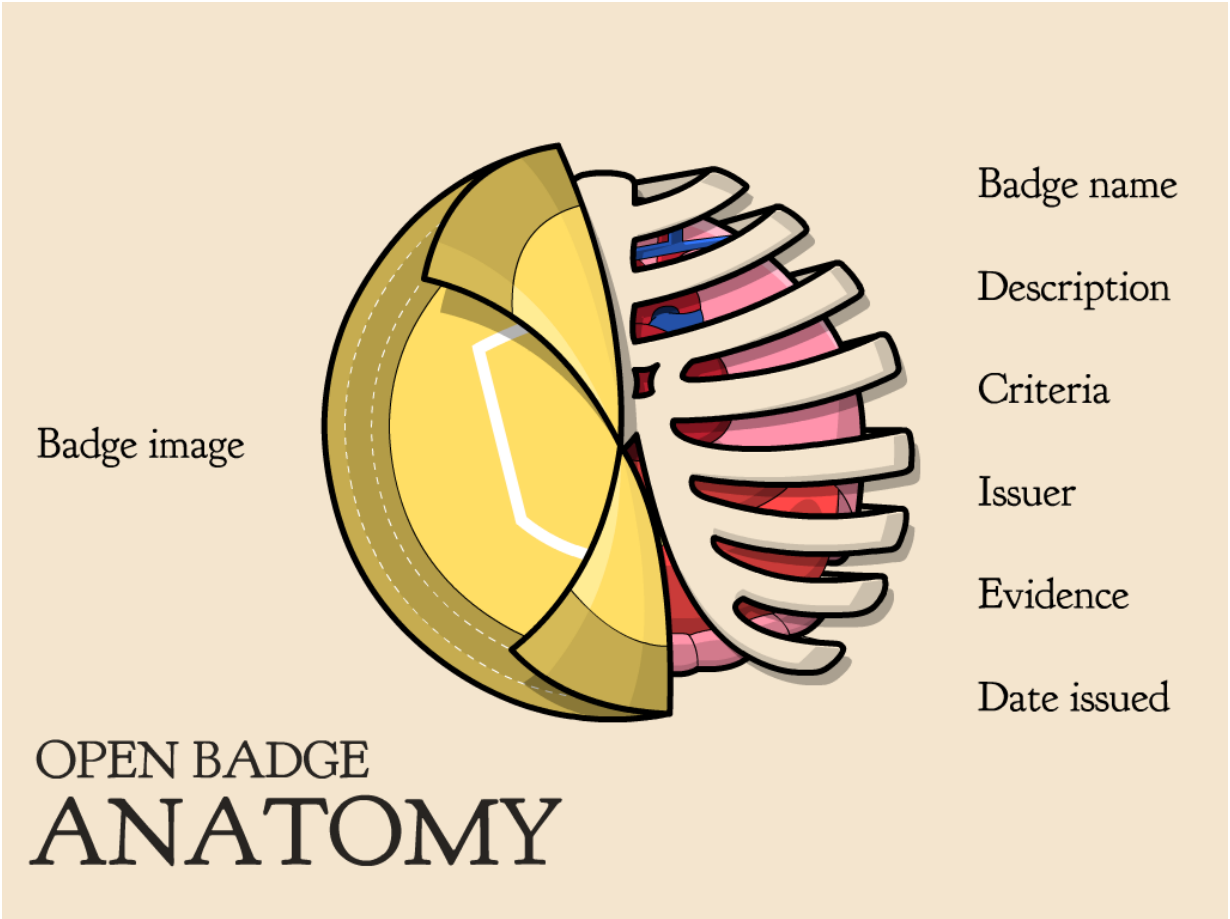
Figure 3: Hype Cycle (CC BY-SA Jeremy Kemp)



The Hype Cycle is a lens which helps to contextualise the historical development of Open Badges (Belshaw, 2021b). The following subsections apply the five labels from the Hype Cycle to time periods between 2011 and 2022. Readers should bear in mind the socio-economic and political turbulence of this stretch of time, a full discussion of which remains beyond the scope of this report.

Technology trigger (2011–13): At the beginning of the 2010s, while digital badges were already widely used in an informal way in web forums and gaming, their application in education lacked standardisation. The Mozilla Foundation's introduction of the Open Badges standard therefore marked a pivotal moment. Open Badges provided an open metadata standard with both mandatory and optional fields, creating a way to showcase learning in a web-native format (Mozilla, 2013). After testing via small pilot projects, the first release for Open Badges culminated in the 2013 Chicago Summer of Learning, where thousands of young people earned Open Badges for their involvement in various activities around the city.

Figure 4: Open Badge Anatomy (CC-BY-SA Class Hack)



What made Open Badges innovative was that metadata was "baked" into a badge image so that learning credentials could be quickly and easily shared online. Figure 4 provides an example of how an image might represent an achievement, while providing information for further inspection — for example, a description of what the learner had to do to achieve the badge, what the criteria were for the award, and even the evidence underpinning it.

What made Open Badges innovative was that metadata was "baked" into a badge image so that learning credentials could be quickly and easily shared online.

Peak of inflated expectations (2014): As Open Badges gained attention beyond the world of formal education and informal learning, Mozilla created the Badge Alliance (BA) to support the growing community. At this time, the hype around Open Badges, including talk about the "end of universities", was greater than the technical ability for the badges ecosystem to develop.

The missing piece of the puzzle at that time was a way to decentralise the "backpack", which was the name given to the space where learners stored their Open Badges. Without a way to move Open Badges between backpacks, Mozilla's reference implementation became the default place for storage, thus causing a bottleneck for the entire ecosystem. Work began on BadgeKit, a web app enabling any organisation to set up and issue badges while the BA developers worked on backpack decentralisation.

Trough of disillusionment (2015–16) – As the pace of development slowed, there were severe headwinds for the Open Badges ecosystem as the MacArthur Foundation moved on to fund other initiatives. The buzzword was no longer "badges" but "blockchain". After a flurry of excitement about the possibilities of Open Badges, and many pilot projects, some organisations were at a loss as to what to do with them in practice. This was the trough of disillusionment. While plenty of academic institutions experimented with badges for staff CPD (ALT, 2015), the assumption was that blockchain would in some way "fix" credentialing. Initiatives such as MIT's Blockcerts, a blockchain-based credentialing solution compatible with the Open Badges specification, gained a limited amount of traction (MIT Media Lab, 2016).

The Open Badges community rallied around the concept of Open Recognition, exemplified by the Bologna Open Recognition Declaration (BORD). This declaration emphasised the need for infrastructure and policy to support open ecosystems, laying the groundwork for future developments (Open Recognition Alliance, 2016).

Slope of enlightenment (2017–19): By mid-2016, it became evident that the BA would not be able to serve as a permanent steward for the Open Badges standard. So, in January 2017, the IMS Global Learning Consortium (now 1EdTech) assumed responsibility for advancing the Open Badges specification.

As understanding of Open Badges deepened, innovative applications emerged. For example, IBM's pilot projects scaled rapidly, and by 2020 had issued three million Open Badges (Leaser, 2020). These badges highlighted achievements in "resume-worthy activities", showcasing their value in professional contexts. Open Badges began appearing on LinkedIn profiles, email signatures, and CVs. Organisations such as the Scottish Social Services Council (SSSC) integrated badges into Continuous Professional Learning frameworks, while movements like Credential As You Go promoted incremental credentialing over traditional degrees. The European MOOC Consortium's Common Microcredential Framework standardised approaches, further legitimising badges in diverse contexts.

Plateau of productivity (2020–22): The Covid-19 pandemic significantly accelerated digital transformation across almost every sector, forcing organisations to rapidly adopt new technologies and digital practices in order to maintain operations during lockdowns (Jaumotte et al., 2023). As education and training moved online, demand grew for relevant certification that could provide a means of validating competencies in a virtual environment.

In an Irish context, it became normal to see "digital badges" being mentioned as part of the everyday work of universities. For example:

- TU Dublin: Based on its digital badges policy, its schools may recognise formal or informal learning, such as entrepreneurship, design thinking, and global citizenship (Technological University Dublin, n.d.)
- University of Galway: Provides a University Skills Passport, which can be used to hold badges earned for activities such as engaging in peer learning (University of Galway, n.d.), or badges earned through the national All Aboard network (see Appendix)
- University College Cork: The Centre for the Integration of Research, Teaching and Learning (CIRTL) created a number of short courses focused on learning enhancement, which staff can complete to gain a digital badge (CIRTL, 2022)

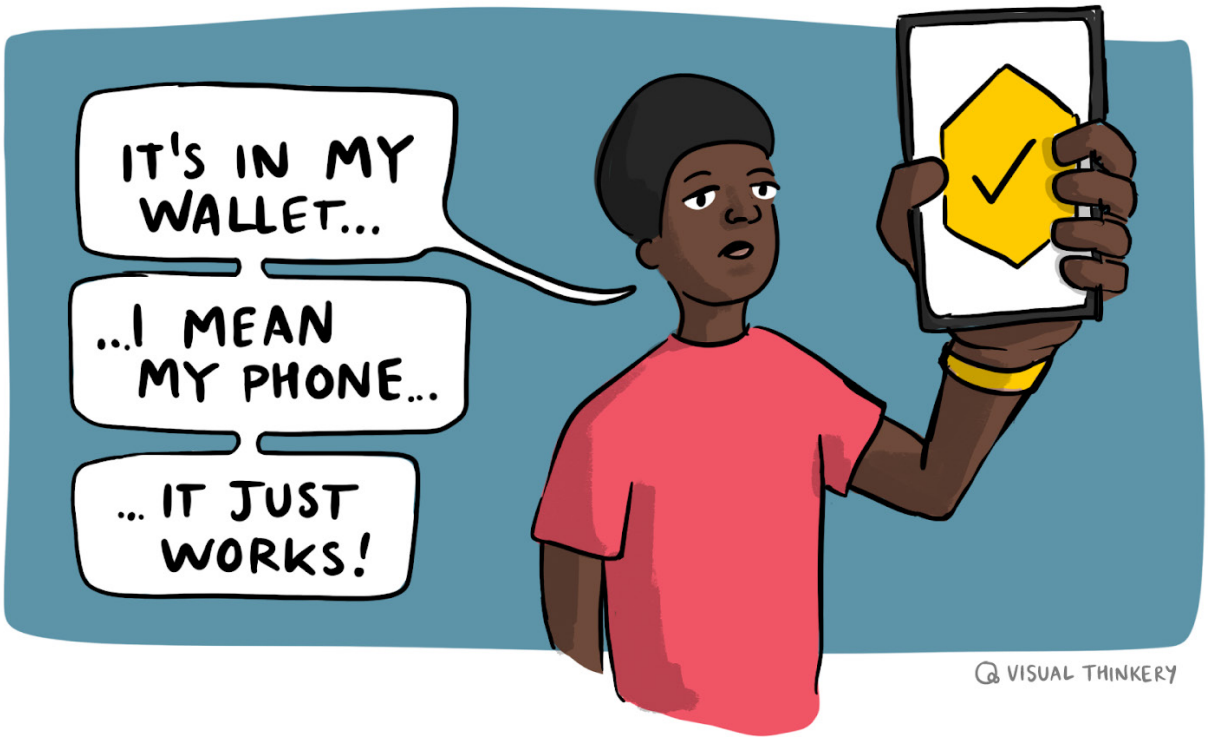
Although digital badges are being used in practice to recognise knowledge, skills, and involvement in various initiatives, there remains confusion with regard to digital badges, Open Badges, and microcredentials, and the terms are often conflated. The original vision of Open Badges encouraged recognition of knowledge and skills

outside of formal settings, between peers, and within communities. To help navigate this area, a community of educators and technologists – many of whom were involved with the Open Badges technical standard definition – came together with Open Recognition is for Everybody, an open community which upholds the original vision and its technical underpinnings (ORE, n.d.).

The new frontier (2023+) – One of the limitations of Open Badges has been its reliance on email as the "identifier" for the badge earner. Email can have some shortcomings: for example, when a student leaves a university they often lose access to the email address they used while studying. Another problem was the badge image being a mandatory requirement – especially as some organisations, including universities, have strict brand guidelines. A third challenge concerned the storage of Open Badges, with the default option being the platform through which the badge was issued. This could cause a headache for the badge earner if they lost their login details or if the badge platform disappeared.

These three issues, along with others, have been addressed with the third iteration of the Open Badges standard. This marks a significant milestone in the development of digital credentials, with Open Badges v3.0 aligning with the Verifiable Credentials data model (Sporney et al., 2023). Open Badges no longer have to be issued to email addresses, no longer require an image, and are now stored by default in earners' decentralised wallets (see Figure 5), rather than on issuing platforms (Belshaw, 2024a).

Figure 5: It just works (CC BY-ND Visual Thinkery for WAO)



Emerging Trends and Technologies

Advancements in technology and evolving societal demands continually reshape education and workforce development, with microcredentials increasingly playing a central role. This section examines key trends and technologies influencing micro-credentialing, with a focus on innovations that enhance flexibility, accessibility, and relevance of learning.

For TUs, these developments represent both opportunities and challenges. By thoughtfully embracing these trends, TUs can strengthen their position as leaders in flexible, enterprise-relevant, future-focused education. This section explores how microcredentials based on Open Badges and Verifiable Credentials can support the TU mission to address skills gaps, enhance lifelong learning, and create meaningful pathways for learners in a rapidly changing economy.

For TUs, these developments represent both opportunities and challenges.

Trends

This section teases apart five conceptual, pedagogical, and work-related shifts that are currently taking place: global standards; skills-based hiring; flexible, stackable learning pathways; learning and employment records (LERs); and Open Recognition. Some of these shifts are occurring slowly, some more quickly, with the confluence of these trends providing an opportunity for the TU sector.

Global Standards

As outlined earlier, microcredentials are part of a long lineage of credentialing. More recently, that history has involved open, digital standards which allow for interoperability. In practical terms, this means that a microcredential issued in Ireland can be recognised globally, as it is based on a standard which allows for the seamless exchange of data without special effort from the user. This is becoming more important, with the increase in global mobility and migration requiring ever-more credential checking and verification. Figure 6 illustrates microcredentials as the fruit of a technology tree, which has these standards as its trunk. The roots of those standards are in communities working together, with the soil an ideology which could broadly be stated as "learning happens everywhere but is not always captured".

Figure 6: The roots of microcredentialing (CC BY-ND Visual Thinkery for WAO)

It is important to point out the relationships between technology, standards, community, and ideology, as some definitions of microcredentialing lack any reference to technical standards. For example, the European Commission's definition of a microcredential is "a proof of the learning outcomes that a learner has acquired following a short learning experience … assessed against transparent standards" (European Commission, 2022). The EU-funded MICROBOL project provides an even simpler definition: "a certified small volume of learning" (Cirlan & Loukkola, 2020. These definitions focus on learning outcomes and transparency in assessment, but they are somewhat vague and fail to prescribe a technological framework for issuing or verifying these credentials.

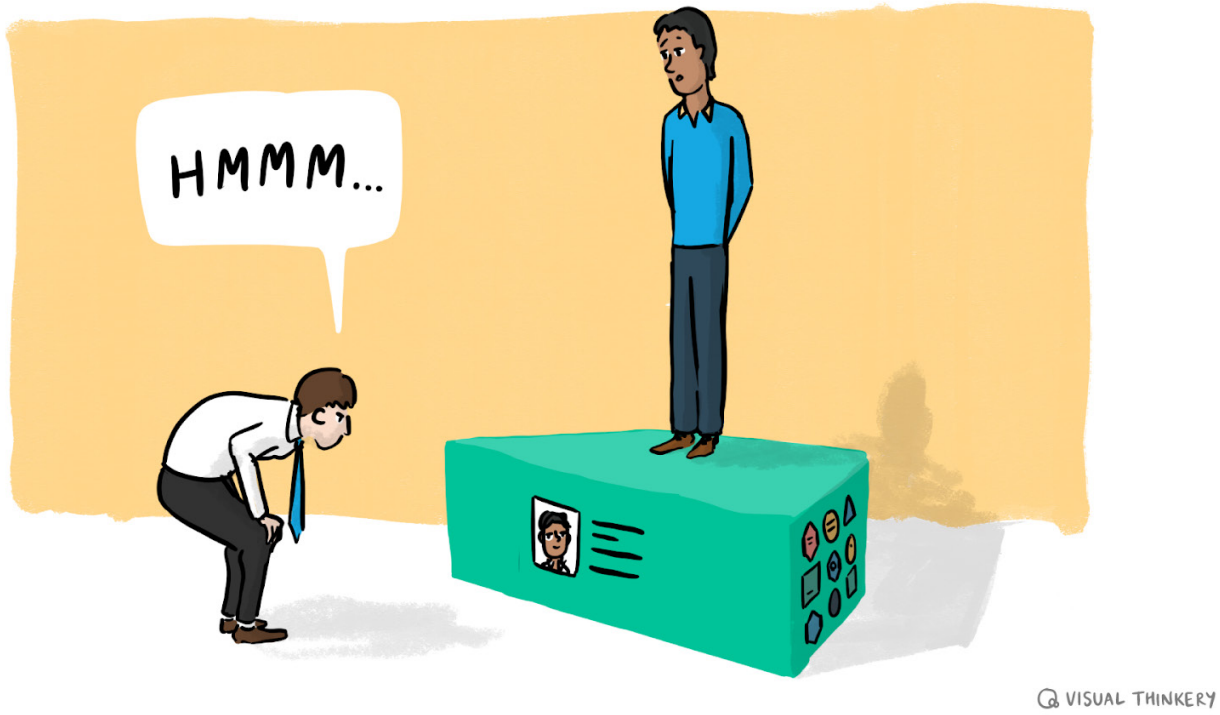
If European definitions are too loose, it could be argued that the guidance of QQI is too exacting, and therefore somewhat limiting. For example, they define a microcredential as a programme that offers the learner "between 5 and 30 credits" within the European Credit Transfer and Accumulation System (Quality and Qualifications Ireland, 2024). They then add restrictions to the definition, such as the requirement that it is delivered online in some form. QQI prevents these microcredentials from being awarded "transnationally" and from being made of smaller, embedded awards, such as other microcredentials. This significantly hampers innovation, as microcredentials are subject to the same bureaucracy and quality assurance practices as much larger, traditional "macro" credentials.

An emerging way forward is by basing microcredential frameworks on technical standards, such as 1EdTech's TrustEd Microcredential Framework (1EdTech, 2023). These approaches address the challenges of credential interoperability and recognition, ensuring learners and employers can rely on secure, verifiable records of achievement.

Organisations in European countries, such as Irish TUs, should be looking at European Digital Credentials for Learning (EDCs) as "verifiable, digital version[s] of a credential issued by an organisation to a learner to document their learning" (European Commission, n.d.). Like the latest version of Open Badges, which is discussed in a subsequent section, EDCs are compatible with Verifiable Credentials, and as such use a wallet-based approach. The data model underpinning EDCs is the European Learning Model (ELM), which allows for "the capture and validation of all learning related data, including formal, non-formal and informal learning" (Europass, n.d.).

Skills-Based Hiring

Figure 7: The skills gap as a recognition gap (CC BY-ND Visual Thinkery for WAO)



Skills-based hiring is a response to traditional credential-based hiring, the latter being a traditional recruitment approach focused on formal qualifications, such as degrees and certificates. Credential-based hiring assumes that these credentials reflect that the individual possesses the necessary skills and knowledge required for satisfactory job performance. However, proponents of skills-based hiring argue that the credential-based

approach can inadvertently exclude capable individuals who have acquired relevant competencies through non-traditional pathways, thereby narrowing the talent pool (Goldberg, 2023).

The term "skills gap" often refers to the perceived mismatch between the competencies sought by employers and those possessed by job candidates. However, this term can sometimes mask a "recognition gap", illustrated in Figure 7, where individuals have the necessary skills but lack the traditional qualifications that formally acknowledge those skills. This discrepancy suggests that the issue lies not solely in skill acquisition but in the mechanisms used to validate and recognise these competencies.

To address this recognition gap, universities and enterprises have begun to collaborate on developing microcredentials to assess and certify certain skills. These enable candidates to demonstrate their abilities directly, moving beyond the reliance on broad qualifications like degrees as proxies for particular skillsets. Given the pressure to show positive destinations for graduates, HE institutions can use microcredentials to diversify their offer to students, ensuring that their skills are accurately recognised and enabling them to contribute to a more efficient and inclusive labour market (Naik & Anderson, 2024).

Ireland's National Skills Strategy 2025 (Department of Education and Skills, 2016) outlines a plan for developing and enhancing skills within Ireland's workforce in order to promote economic growth and improve the lives of its citizens. The strategy calls for stronger collaboration between education providers and employers, supported by mechanisms such as the National Skills Council and Regional Skills Fora, to align education and training with labour market needs. The strategy highlights lifelong learning as a critical component of the plan, so that all individuals, including economically marginalised groups, can participate effectively in the labour market.

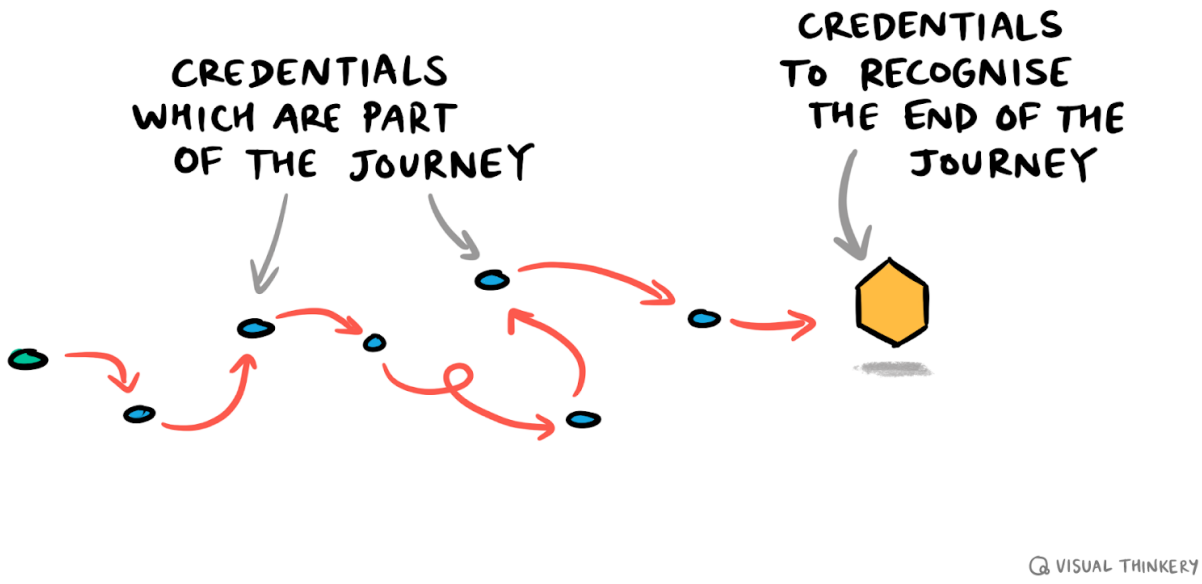
Inherent in the objectives of this strategy is the need for adaptable and flexible skills-based credentialing, such as microcredentials, to address rapidly changing industry demands. With the exponential growth of technology, including AI, and the increasing importance of skills such as problem-solving and communication, hiring for specific skillsets and personal attributes is becoming more common. These approaches can ensure a more inclusive and responsive education and training system, and contribute to Ireland's social and economic prosperity.

A diverse microcredential ecosystem plays a key role in enabling skills-based hiring, allowing candidates to present a curated portfolio that showcases their abilities in response to employer requirements. Together with flexible, stackable learning pathways, which are discussed next, microcredentials offer learners opportunities to demonstrate complex skillsets and directly address industry needs.

The use of microcredentials in skills-based hiring is still in its early stages. However, a recent report from the International Rescue Committee and Jobs for the Future found that, while employers may not yet widely request microcredentials, many are actively considering how to integrate them into their hiring practices (Korbakes & Davis, 2024).

Flexible, Stackable Learning Pathways

Figure 8: (Micro)credentialing the whole journey (CC BY-ND Visual Thinkery for WAO)



Flexible, stackable learning pathways in microcredentialing refer to modular educational approaches that enable learners to progressively build knowledge and skills over time (see Figure 8). Microcredentials serve as smaller, independently recognised units of learning that can be "stacked" to form larger credentials, such as diplomas, degrees, or professional certifications. Figure 9 shows a visual example of this through a three-tier system.

Figure 9: CSU Extension's Certified Gardener Program is an example of a flexible, stackable learning pathway (Colorado State University, n.d.)

These pathways offer learners the flexibility to progress at their own pace, balance personal and professional commitments, and select learning experiences aligned with their individual goals. Each microcredential holds intrinsic value while contributing to a broader qualification, providing both immediate recognition and long-term benefits. This approach addresses the evolving needs of both learners and employers, and creates systems which are adaptable to shifts in skill requirements and individual circumstances.

The concept of "stackability" is central to flexible learning pathways. Microcredentials can be designed to stack vertically, horizontally, or in a value-added manner, allowing learners to progress towards higher qualifications, broaden their skillsets, or tailor their credentials to specific industry needs. This modularity facilitates personalised learning journeys, enabling individuals to acquire specific skills and knowledge relevant to their career aspirations.

Forward-thinking institutions already have this kind of approach in place. For example:

- Arizona State University (ASU) offers stackable microcredentials in emerging technologies (n.d.), allowing learners to align their skills with workforce demands (ASU, n.d.)
- King's College London allows stackable credentials to be combined in ways that allow learners to earn a postgraduate certificate, postgraduate diploma, or master's degree in professional development (King's College London, 2024)
- State University of New York (SUNY) provides over 500 microcredentials across various disciplines, enabling learners to build competencies that align with industry needs (SUNY, n.d.)

The increasing demand for upskilling and reskilling, driven by technological advancements and changing industry needs, highlights the importance of these pathways. Bridging the gap between education and employment, and helping to minimise skills gaps, they empower individuals to adapt to the demands of the future workforce.

Learning and Employment Records (Lers)

LERs refer to comprehensive digital records that document an individual's learning and work experiences across various contexts, including formal education, workplace activities, and life experiences. LERs are an enterprise-friendly way of capturing a broad range of competencies in a way that is both verifiable and digitally signed to ensure authenticity.

LERs integrate records of both formal and informal learning to provide a holistic view of an individual's skills and competencies, thereby addressing the increasing demand for adaptable, multifaceted workforce profiles. The main technical standard used by LERs is the latest version of the Open Badges specification, which is discussed in more detail in a later section.

"LER" is a recent term which has gained momentum since the US Office of Personnel Management mandated that federal agencies must adopt skills-based hiring practices. This signalled a major shift away from traditional degree-centric recruitment and has led to philanthropic organisations such as the Walmart Foundation investing heavily in initiatives to support workforce innovation. LERs enable individuals to showcase not only their technical skills but also attributes such as adaptability, creativity, and problem-solving. For example, a LER might connect several microcredentials to demonstrate proficiency in a broader domain, such as project management or digital literacies.

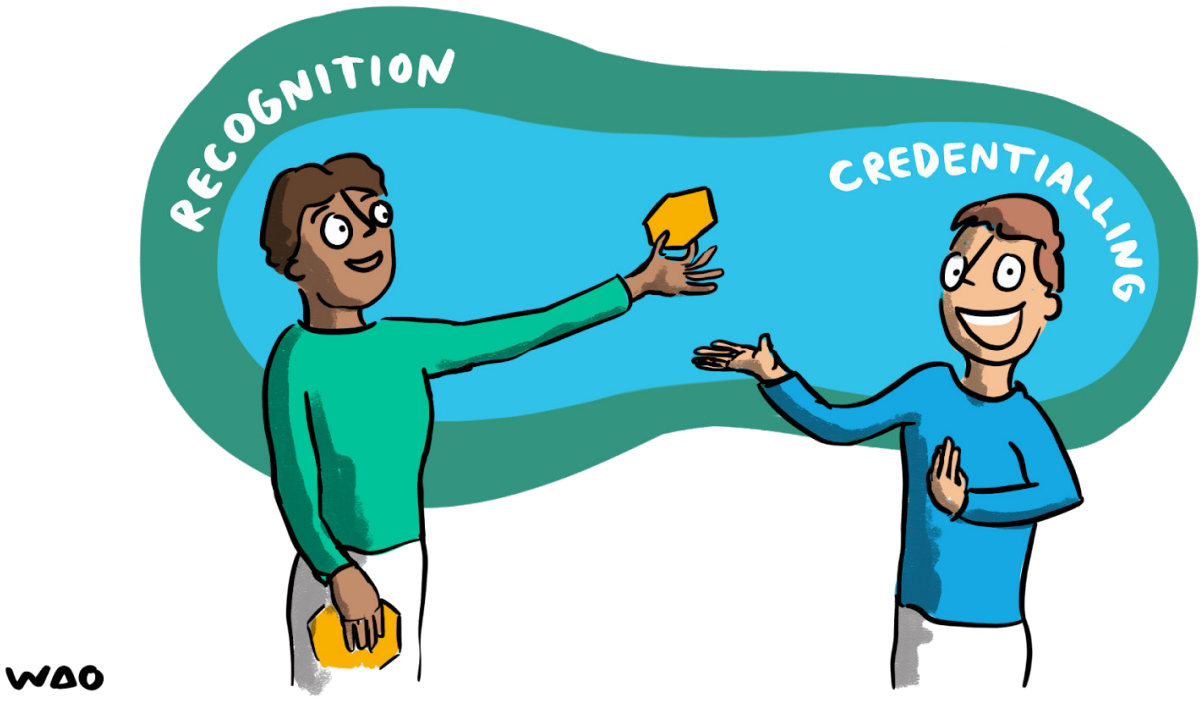
LERs aggregate various forms of credentials into portable records, providing a comprehensive view of a person's skills and achievements. This approach to microcre-

dentialing is highly relevant to TUs, which face the opportunity to show leadership and innovation by adopting an LER-based approach to highlight skills as a form of "currency".

As LERs become more widely adopted, their potential to reshape credentialing systems will grow. Whereas the European definition of the term "microcredential" is unhelpfully ambiguous, LERs are defined specifically enough to be useful, while providing the ability to seamlessly connect and verify an individual's diverse learning experiences. This represents a significant shift in how education and work are documented and recognised, and it encourages a culture of continuous learning and skill development.

Open Recognition

Figure 10: Credentialing as a recognition practice (CC BY-ND Visual Thinkery for WAO)



Microcredentialing can be understood as a subset of the wider concept of recognition. As Figure 10 demonstrates how every time a credential– of any type or granularity – is issued, it gains relevance due to the recognition it symbolises. One definition of Open Recognition, an approach which centres the practice of recognition (as a verb) rather than the ceremony of credentialing (as a noun), is as follows:

> Open Recognition is the awareness and appreciation of talents, skills and aspirations in ways that go beyond credentialing. This includes recognising the rights of individuals, communities, and territories to apply their own labels and definitions. Their frameworks may be emergent and/or implicit (Belshaw, 2022).

The Open Recognition movement began with the BORD (2016) and is centred around the Open Recognition Alliance (ORA). The ORA provides various resources, including the Plane of Recognition, an adapted version of which is shown below.

Figure 11: The Plane of Recognition (CC BY WAO, based on an original by Serge Ravet, ORA)

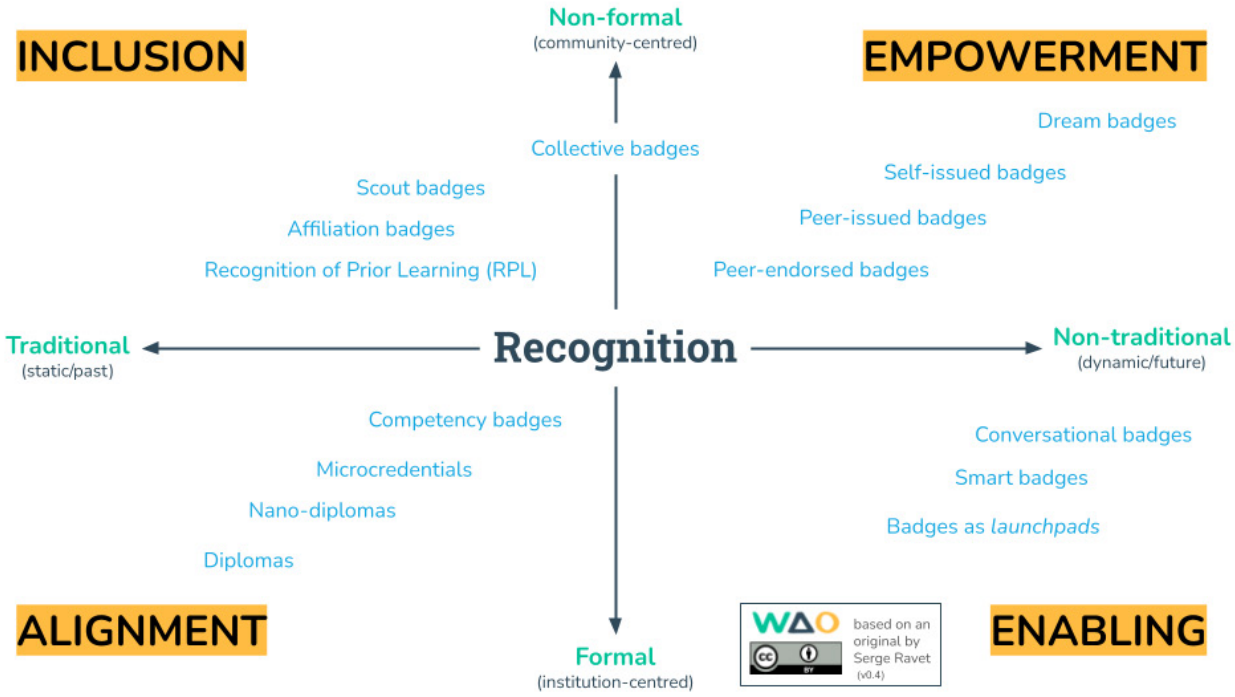


Figure 11 plots various examples of recognition on a scale of traditional versus non-traditional on the x-axis, and formal versus non-formal on the y-axis. This approach demonstrates that microcredentials, as smaller versions of traditional degrees and diplomas, tend to be focused on "alignment". As the rest of the diagram shows, there are many other ways to recognise the "talents, skills, and aspirations" that form part of the definition of Open Recognition.

Microcredentials as a form of certification use familiar assessment methods to replace or enhance traditional practices, while a more holistic approach using Open Badges often involves less familiar approaches. With Open Badges, recognition can extend beyond credentialing, explaining why private badges which are never publicly

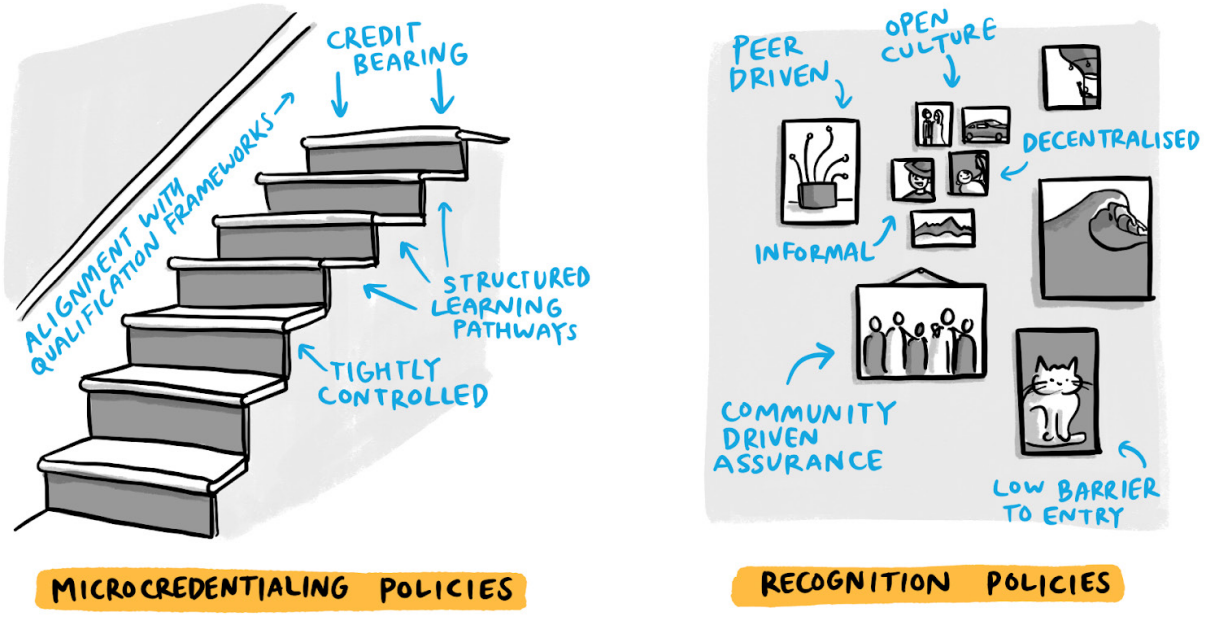
displayed can be as valuable to the earner as public microcredentials. Integrating an Open Recognition approach into microcredentialing ecosystems can bring benefits such as motivating individuals, helping them identify and define their skills, showcasing knowledge, supporting personal development, and promoting cultural awareness.

Universities do, in fact, already understand credentialing as a form of recognition, as demonstrated by the widespread use of Recognition of Prior Learning (RPL). Referring back to Figure 11, this is an example of "inclusion" in the top-left quadrant. Open Recognition goes beyond RPL to encompass not only "hard" skills acquired through work and life experiences but also "softer", more human skills – now often referred to as "durable" skills. These skills can be recognised in diverse ways, including self- and peer recognition, and by acknowledging an individual's intentionality and aspiration. The latter is frequently overlooked in traditional, top-down credentialing systems.

Universities do, in fact, already understand credentialing as a form of recognition, as demonstrated by the widespread use of Recognition of Prior Learning (RPL).

The Rudaí 23 initiative by the Library Association of Ireland offers a good example of this (see Appendix). The project convened a peer review panel to facilitate discussions and issue certification, illustrating how an Open Recognition approach can encourage meaningful engagement within professional communities.

Figure 12: Microcredentialing policies versus recognition policies
(CC BY-ND Visual Thinkery for WAO)



As Figure 12 illustrates, there is ample room for recognition policies to augment microcredentials. While some certifications or qualifications might benefit from a structured learning pathway and alignment to qualification frameworks, there is value in broadening recognition policies to include more informal, peer-based, and decentralised alternatives.

Technologies

Technological advancements are transforming the way credentials are created, issued, and verified. This section explores three critical technologies driving the evolution of microcredentialing: Open Badges, the Verifiable Credentials data model, and AI. Each of these innovations enhances the efficiency, portability, and credibility of microcredentials, addressing the needs of both learners and employers.

Together, these technologies form the foundation for modern microcredentialing ecosystems. They enable the secure and verifiable recognition of skills, support interoperability across systems, and open new possibilities for personalisation and scalability in microcredentialing practices.

Open Badges Version 3.0

As previously discussed, the Open Badges specification was originally designed to provide a trusted way to capture and share a record of learning, no matter where it happens. Open Badges version 3.0 (OB v3) is a significant iteration of the specification, designed to address the challenges discussed earlier in this report. Key features of OB v3 include:

- Decentralised identity management: By supporting decentralised identifiers, OB v3 eliminates reliance on email addresses for issuing or earning microcredentials. Instead, badges are stored in digital wallets.
- Digital wallets: This feature allows individuals to securely store their digital identities and credentials on their smartphone, similar to familiar digital payment solutions such as Google Wallet and Apple Pay. Learners control access to their microcredentials, skills, and experiences, which ensures both privacy and portability.
- Image-free recognition: By eliminating the need for a mandatory image, OB v3 ensures that microcredentials are more accessible to learners with visual impairments or disabilities. This also reduces file sizes, making badges easier to share and store across platforms and providing issuers with greater flexibility to design badges in different formats.

OB v3 also supports richer metadata, which is the name for the data contained in the Open Badge. As a result, badges can hold more detailed and nuanced descriptions of learning, pathways, and evidence, which gives users across the ecosystem greater flexibility. It also allows individuals to selectively share data contained within a credential.

These advancements enhance the utility of Open Badges, giving learners more control while offering issuers and other stakeholders tools to recognise and describe skills and competencies. As the educational landscape continues to evolve, the Open Badges standard is well-positioned to play a pivotal role in acknowledging and validating learning. Much of this new functionality in OB v3 comes through aligning the Open Badges standard with the Verifiable Credentials data model.

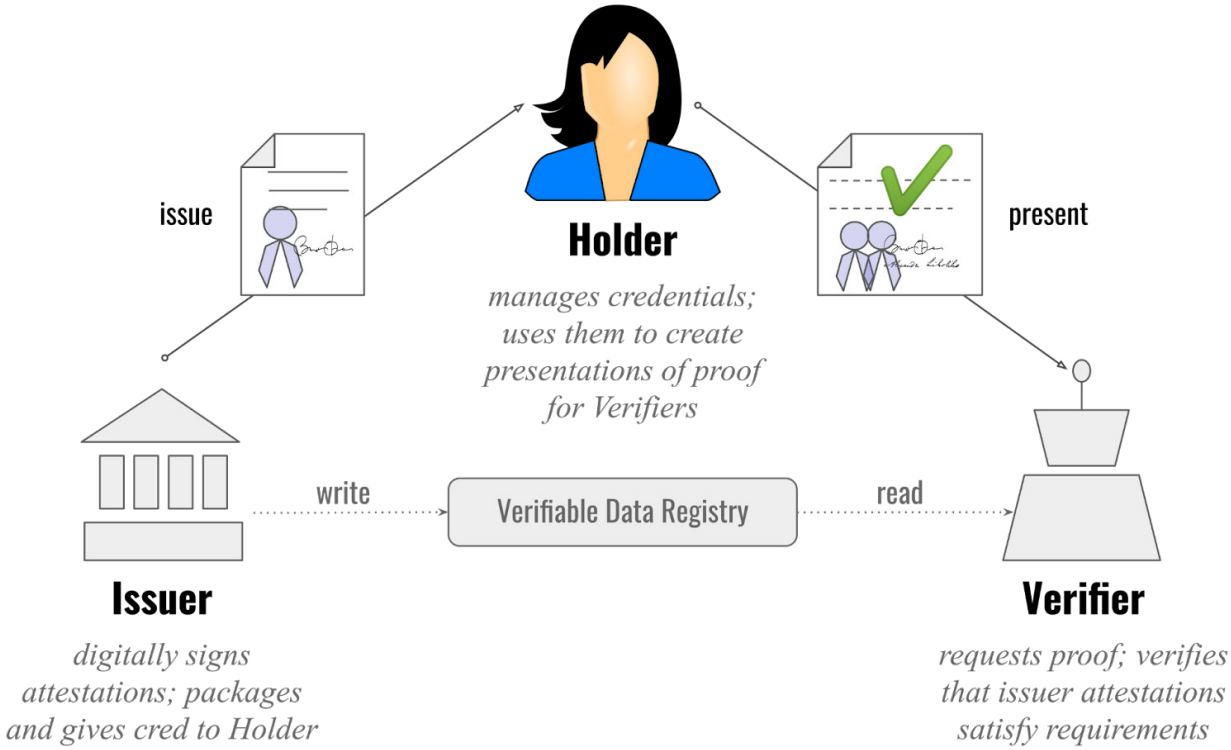
Verifiable Credentials Data Model

The W3C (World Wide Web Consortium) is a global body which sets standards for the internet. These standards are the reason, for example, that users can visit websites using any web browser (e.g. Chrome, Firefox, Edge). The ability to send email to and from any account is another example of standards in practice. Verifiable Credentials is a W3C standard. There are many use cases for Verifiable Credentials, some of which have already been discussed in this report. The reason for this use case flexibility is the underlying Verifiable Credentials data model, with which the latest version of the Open Badges standard aligns. This approach provides individuals with proof of their achievements in a way that is secure, verifiable, and understandable.

The Verifiable Credentials data model contains specific information about an accomplishment, such as who issued the certification, what exactly the individual achieved, when they achieved it, and proof that the credential was awarded. This model uses a standardised format to represent these details (see Figure 13). Just as a driver's licence or ID card is widely accepted by governments, businesses, and organisations around the world, microcredentials issued using the Verifiable Credentials data model can be similarly interoperable. Anyone with a device connected to the internet should be able to verify and understand these digital documents, regardless of where they were created or stored.

Institutional microcredentials can be universally recognised and trusted online, allowing learners to showcase their achievements effortlessly across borders and industries. Promoting interoperability through the Verifiable Credentials data model ensures that digital credentials are as portable and widely acceptable as physical ones. The easiest way to implement this model is to use OB v3.

Figure 13: Verifiable Credentials triangle of trust (CC-BY-SA Daniel H. Hardman)



Artificial Intelligence

Artificial intelligence (AI) technologies range from predictive analytics, which forecast weather patterns or financial trends, to pattern recognition systems used in areas like medical imaging or fraud detection. AI is not a monolithic technology but a collection of tools and approaches, each suited to distinct applications.

Recent public discussion and debate around AI has frequently centred on generative AI, which uses machine learning to create content, such as text, images, and audio.[1] While generative AI systems like ChatGPT and Midjourney have gained significant attention, it's important to recognise the breadth of other AI capabilities:

- Predictive machine learning: Used to forecast outcomes based on historical data, and can be used for such applications as weather predictions or traffic management

[1]See Pratschke (2024) and Whittle and Ranson (2024), also in the National Digital Leadership Network report series, for further exploration of the use of AI in higher education.

- Pattern matching: Employed in tasks like recognising handwriting, fingerprints, or anomalies in medical scans
- Recommendation systems: Powering platforms such as Netflix, Spotify, and online learning systems to personalise user experiences
- Natural language processing: Used in applications like sentiment analysis or real-time language translation
- Computer vision: Analysing and interpreting visual data, and can be used for such applications as autonomous vehicle navigation or quality control in manufacturing
- Automation: Streamlining repetitive processes, including data entry, scheduling, and other administrative tasks

This wide spectrum of application shows how versatile and relevant AI technologies can be across various fields. In the context of microcredentialing, AI can be used to address inefficiencies, enable personalised learning, and enhance recognition systems.

Some have rightly urged caution when it comes to using generative AI, and in particular Large Language Models (LLMs). For example, Digital Promise notes:

> While AI has made remarkable strides in natural language processing within certain contexts, it still lacks the subject matter expertise and specific contextual understanding of the learner being assessed. Without this understanding, AI cannot accurately evaluate the nuances and complexities of competency-based work. This is especially true when assessing complex evidence-based submissions that might include a variety of artifacts with text, audio, video, and images to provide nuanced context and information about skill implementation. (Galindo et al., 2024, p. 35)

LLMs can, however, be usefully employed in generating content. A good example would be using an AI Badge Assistant to describe using natural language what you would like to recognise (see Figure 14). The LLM underpinning the AI assistant can then come up with relevant description, criteria, and even tags as a starting point (see Figure 15).

Figure 14: Screenshot of AI Badge Assistant on the Navigatr platform

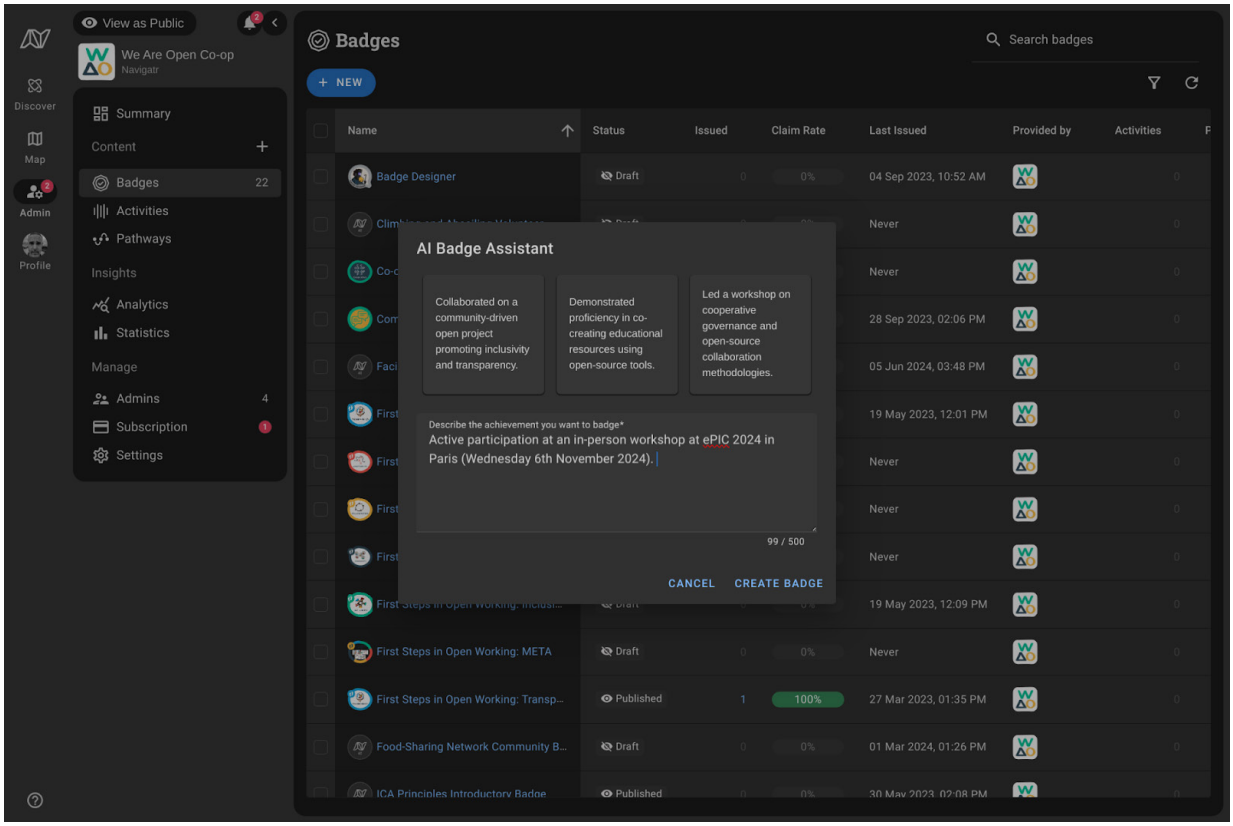
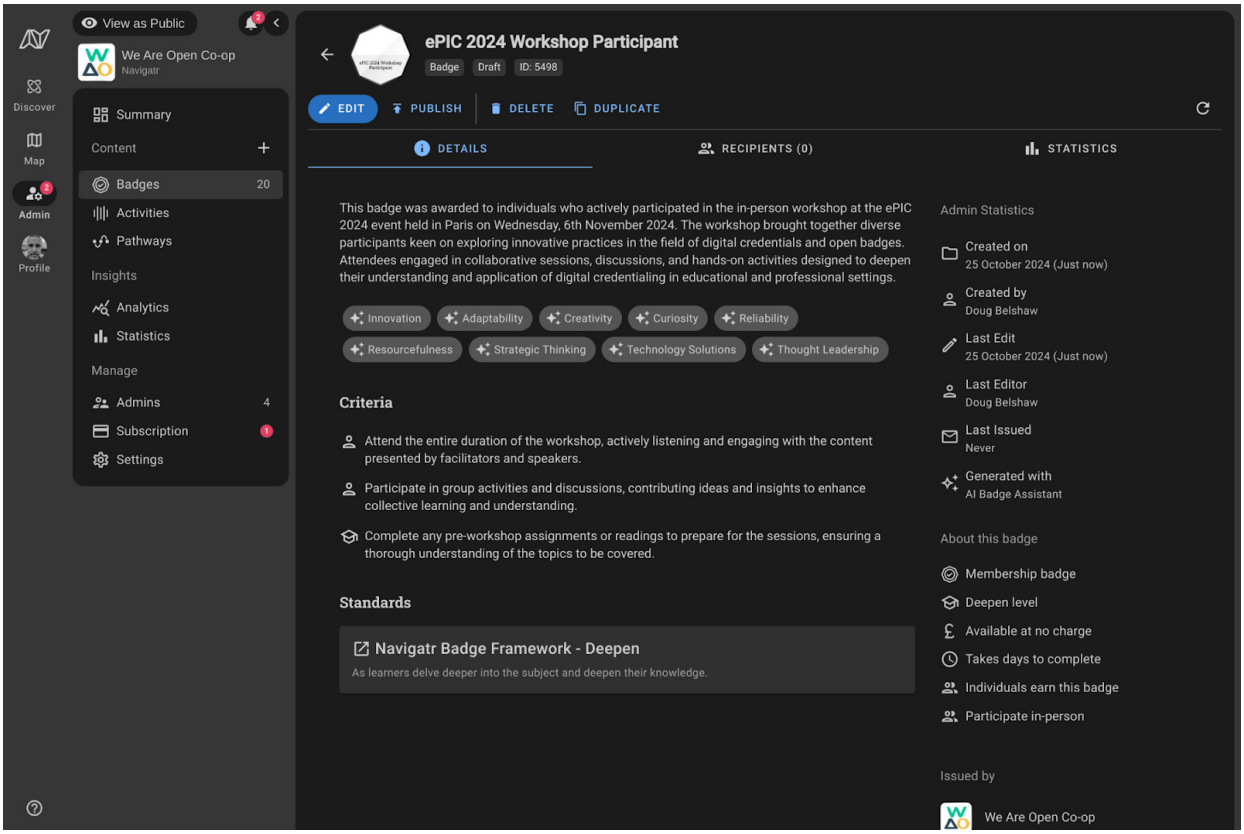


Figure 15: Screenshot of a badge created by AI Badge Assistant on the Navigatr platform

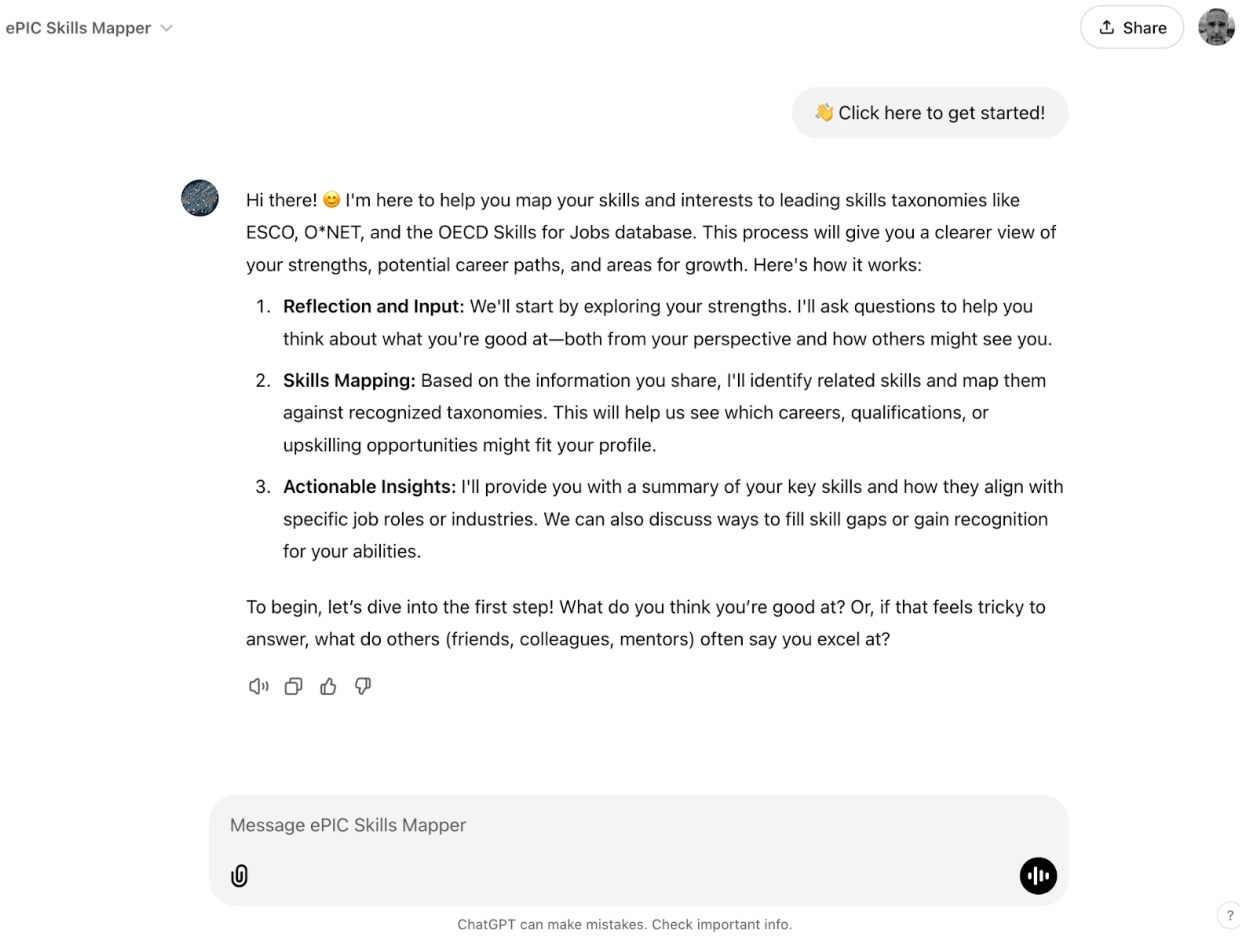


The above examples use the Navigatr platform (n.d.). Given the increasing ubiquity of AI integration into almost every digital tool, it is likely that most microcredentialing platforms will feature some form of AI assistant in the near future.

A second area in which LLMs can be useful is pattern-matching. Many individuals, particularly those with complex life experiences, find it difficult to articulate or even recognise the skills they have gained. AI-assisted skills recognition is an approach that can facilitate a richer, more accurate representation of an individual's capabilities. This can help with RPL, aligning an individual's experiences with recognised skills frameworks. This can then be packaged up in a microcredential.

One example of this workflow is evident in the ePIC Skills Mapper (Belshaw, 2024c), a custom "GPT" created as a prototype for the ePIC 2024 conference (see Figure 16). This customised version of ChatGPT was trained to ask users a series of questions, probing their experience to tease out knowledge and skills that may not initially have been obvious. Once it has enough information, it maps the user's inputs against three skills taxonomies: ESCO, O*NET, and the OECD Skills for Jobs database. In addition, it suggests future roles that might interest the user, based on their existing knowledge and skills.

Figure 16: Screenshot of the initial part of a conversation with the ePIC Skills Mapper



Other AI tools could be useful for the automation of various tasks and processes around credential verification. For example, universities – or their enterprise partners – may wish to use a platform using computer vision to analyse evidence for lower-stakes credentials which require less complex evaluation. Or they could use predictive machine learning for suggesting next steps for learners, or pattern matching to verify basic compliance with formatting or eligibility criteria.

By automating routine and repetitive tasks, AI helps reduce inefficiencies in a university's day-to-day work, freeing up staff to put their time towards more complex and judgement-based activities. This means that staff will have more time to recognise the breadth of a learner's achievements through the issuing of microcredentials.

As the next section highlights, there are a number of challenges and risks inherent to the use of microcredentials, as with the use of any technology. A desire for organisational efficiency and innovation should be tempered with a focus on equity, justice, and an attempt to minimise unintended consequences.

Challenges And Risks

The adoption and implementation of microcredentials present numerous opportunities for innovation and greater flexibility in education and workforce development. However, these opportunities come with challenges and risks that institutions must navigate carefully. Without addressing inherent issues, microcredentialing systems risk becoming fragmented, inequitable, or unsustainable.

Without addressing inherent issues, microcredentialing systems risk becoming fragmented, inequitable, or unsustainable.

Senior leaders will be familiar with a number of the challenges and risks that come with introducing a new initiative. For example, resource constraints, cultural resistance, and the need to upskill staff apply to most projects and programmes. Rather than focus on these generic issues, however, this section will explore key challenges and risks specifically related to microcredentialing.

A literature review as part of a recent N-TUTORR report noted that the key challenges for implementing microcredentials in HE are: (i) lack of consistent frameworks, (ii) the high level of resources required for effective implementation, and (iii) uncertainty among employers of the value proposition (Carroll et al., 2023, p. 18).

Of these three key challenges, resource constraints have already been identified as a generic challenge, and the framework question will be dealt with in a subsequent section, which leaves the question of value. This third challenge can be broken down into three sub-issues around quality assurance, data privacy and security, and unintended consequences. By addressing these challenges proactively, institutions can create microcredentialing systems that are not only effective but also resilient, equitable, and aligned with the evolving needs of learners and employers.

Quality Assurance

A common issue in microcredentialing is the conflation of technical verification with quality assurance. Technical verification ensures that a credential is authentic, digitally secure, and issued by a trusted organisation, often through standards like Open Badges. This process checks that a credential has not been altered, or revoked after being issued. Quality assurance, in contrast, evaluates the learning outcomes, alignment with institutional or national standards, and the overall rigour of the learning experience. Essentially, this process checks that the credential is something that is worth earning.

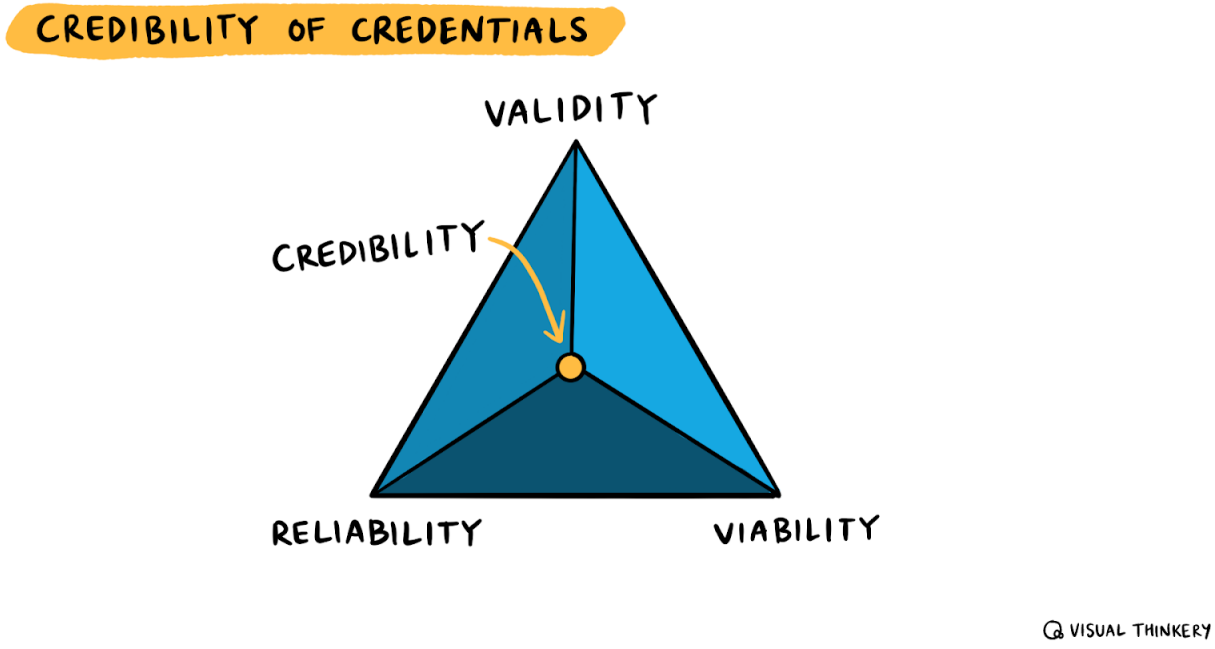
For example, while an Open Badge verifies that a credential was issued by a legitimate institution, it does not confirm the quality of the learning experience, nor its alignment with recognised qualifications. Addressing both processes separately is essential to ensure that the technical infrastructure is robust while maintaining the educational and professional value of the credentials themselves.

When it comes to microcredentials, organisations have to think beyond standard quality assurance approaches that are used for degrees and diplomas. Existing quality assurance processes, if they are too narrowly defined, can sometimes pose limitations that hinder the development of innovative and flexible credentialing approaches. For example, institutions need to be aware of the following when considering quality assurance in relation to microcredentials:

- Granularity: The size of the award given to a microcredential is, as the name suggests, likely to be smaller in scope. As a result, they are often lower-stakes achievements in terms of quality assurance than other awards made by universities
- Evidence: When based on a technical standard such as Open Badges, microcredentials can link to the evidence underpinning their award. As a result, the viewer of the microcredential is able to ascertain some of the quality of the learning for themselves
- Audience: In an increasingly globalised workforce, HE institutions which are well-known nationally may not necessarily be recognised internationally. As a result, there is less scope for leaning on the name and reputation of an institution as a definition of quality

With regard to quality assurance, vocational learning providers such as City & Guilds in the UK use an approach based on validity, reliability, and viability to create credible credentials.

Figure 17: Credibility of Credentials (CC BY-ND Visual Thinkery for WAO)



The three elements of Figure 17 can be summarised as follows (Belshaw, 2024b):

- Validity: Ensures that an assessment accurately measures what it claims to measure. In the context of microcredentials, this means that the assessment process leading to the badge should accurately evaluate the abilities, knowledge, or competencies it is intended to recognise
- Reliability: Focuses on the consistency and dependability of the assessment results. A reliable microcredential system ensures that all recipients are evaluated using the same standards, and that these standards are applied consistently
- Viability: Deals with the practical aspects of sustaining an assessment system. This includes considerations such as the costs involved, the resources required, and the technology necessary to issue and maintain the microcredentials

While quality assurance frameworks are crucial for maintaining the credibility of microcredentials, they can also act as a bottleneck, slowing down the development and deployment of new microcredentials. The rigorous processes required to align with existing frameworks often discourage experimentation and innovation, particularly with regard to creating smaller, more flexible learning units. Institutions need to strike a balance between maintaining rigour and allowing for iterative, agile approaches to credentialing.

In the Irish context, special purpose awards (SPAs) are often conflated with micro-credentials, creating confusion for both learners and employers. SPAs, which typically require 100–120 hours of effort to earn, do not meet the commonly accepted definition of "micro" learning. This conflation limits the scope for innovation and results in systemic issues that constrain the development of more flexible solutions. Institutions must clearly distinguish between SPAs and microcredentials, ensuring that the latter term is used in reference to short, modular units of learning.

Ultimately, quality is in the eye of the beholder. Do the individuals who hold the issued microcredential have the knowledge, skills, and dispositions it describes? Can they put into practice what they have learned? A positive answer to these questions is what helps determine rigour, quality, and value to learners, enterprise, and wider society.

Data Privacy and Security

Implementing any new technical solution is likely to introduce challenges related to data privacy and security. TUs therefore need to balance the need for verifiable, interoperable microcredentials with the ethical and legal responsibilities of safeguarding learners' personal information. This is not only a GDPR requirement, but also essential to building trust among learners, enterprise, and other stakeholders.

Microcredentials based on open standards incorporate data privacy features by design. Open-source technologies are often more secure than their closed counterparts due to their inherent transparency and collaborative nature (Brown, 2023). The availability of source code for public scrutiny enables a global community of developers and security experts to identify and address vulnerabilities more rapidly (Day, 2023). This collective effort integrates multiple safeguards into development cycles, ensuring swift correction of security issues and continuous improvement of open-source software (Kramer, 2023).

Standards such as Open Badges are designed to promote interoperability and accessibility, meaning learners can use their credentials across multiple platforms. However, a significant risk arises when vendors leverage these open standards to create closed ecosystems. These proprietary systems restrict data portability, limit interoperability, and can result in vendor lock-in, a term which describes the situation where learners and institutions become dependent on a single provider for their microcredentialing needs. To mitigate these risks, institutions should:

- Perform due diligence: Conduct thorough evaluations of vendors to ensure compliance with open standards

- Insist on specific functionality: Open APIs and data export approaches allow seamless integration with other systems
- Avoid lock-in: Service level agreements are useful, but signing long contracts based on exclusive partnerships with single providers can be problematic

A key area where OB v3 differs from previous versions of the Open Badges standard is that it gives learners more control of their data than its predecessors. This wallet-based approach makes it easier for institutions to provide full transparency over how learner data is stored, shared, and used. There are, however, some less obvious areas to provide guidance:

- Consent-based sharing: Learners should be shown explicitly how to authorise the sharing of their credentials with third parties, such as employers or educational institutions
- Revocation rights: Credentialing systems should allow learners to revoke access to their credentials at any time, ensuring that they retain full autonomy over their data
- Data portability: Learners should be able to export their credentials in widely accepted formats, enabling them to use their achievements across platforms and geographies

Transparency is also of critical importance. Institutions should communicate their privacy and security measures clearly to learners, employers, and other stakeholders. Providing accessible explanations of how data is protected helps develop trust and reassures users that their information is being handled responsibly.

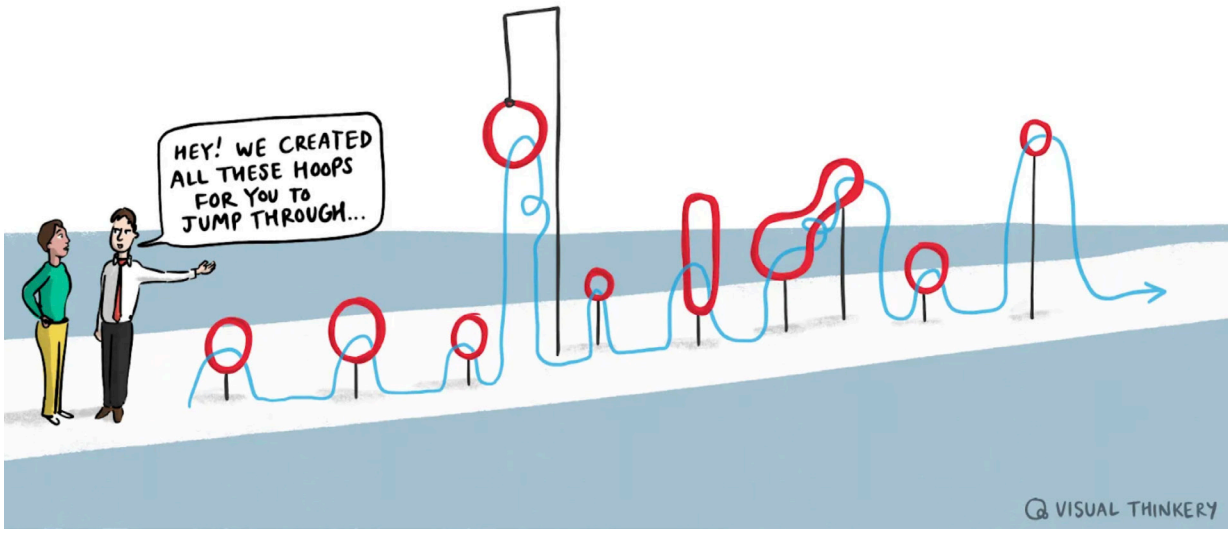
Unintended Consequences

While microcredentials offer significant opportunities for innovation and flexibility in education, they also introduce risks of unintended consequences. Vendor lock-in is one example that has already been discussed. Another is the stifling of innovation through insisting on quality assurance processes that were created for different types of credentials.

There are three further unintended consequences that should be considered when designing and issuing microcredentials. The first is an overemphasis on credentialing. This approach, instead of enabling and encouraging learners, creates unnecessary barriers for them, turning microcredentials into yet another series of hoops for learners to jump through (see Figure 18). Instead of simply adding more hurdles, microcredentials should focus on recognising the breadth of an individual's

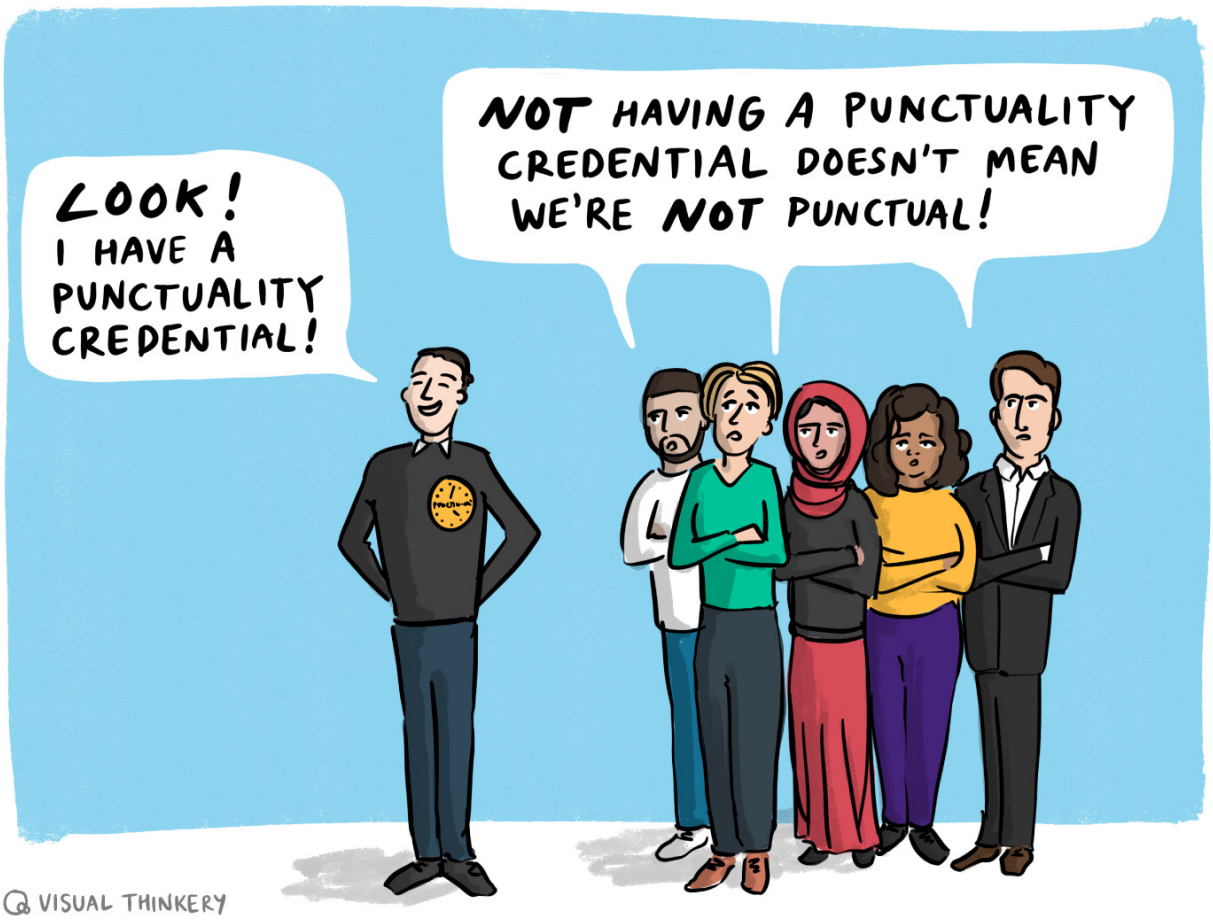
skills and attributes, capturing learning and achievements in ways that are inclusive and meaningful.

Figure 18: Creating hoops for people to jump through (CC BY-ND Visual Thinkery for WAO)



A second important consideration is avoiding unintended negative implications for those who do not hold specific credentials. For instance, issuing a badge for good timekeeping could inadvertently suggest that those without the badge are not punctual, even if this was not the intent (see Figure 19). Institutions must be mindful of how they frame and communicate credentials, ensuring that they highlight achievements without unintentionally implying that others are deficient.

Figure 19: Avoiding the double negative (CC BY-ND Visual Thinkery for WAO)



A third unintended consequence is reinforcing credentialing structures which are based on existing power and privilege. Instead of broadening access to education and the workplace, microcredentials can be used to fuel an arms race to differentiate between those who are already well-credentialed. To counter this unintended consequence, institutions have the opportunity to use microcredentials to prioritise recognition. By adopting the principles of Open Recognition explained in an earlier section, institutions can broaden the scope of what achievements they acknowledge, including informal, experiential, and community-based learning. This approach values diverse contributions

and provides opportunities for individuals to showcase their skills and attributes in ways that are adaptable and inclusive.

Shifting the focus to recognition not only mitigates the risks of credential inflation but also encourages institutions to experiment with bold and innovative approaches. Microcredentials should serve as tools for empowerment and accessibility, celebrating achievements without creating unnecessary competition or exclusion.

Microcredentialing systems must be designed with diversity, equity, and inclusion (DEI) principles in mind to avoid exacerbating existing inequities in education and employment. For example, the digital nature of microcredentials may exclude learners with limited access to technology or with unreliable internet connectivity. Similarly, learners from underrepresented backgrounds may face additional barriers, such as a lack of awareness about microcredentialing opportunities or cultural biases to their ability to be recognised. Institutions can actively work to address these disparities by:

- Ensuring accessibility: Designing platforms and processes that accommodate users with diverse needs, including those with disabilities or limited digital literacy skills
- Targeted outreach: Developing strategies to engage underrepresented groups and raise awareness about the benefits and opportunities of microcredentials
- Affordable options: Offering low-cost or subsidised microcredential opportunities to offset financial barriers
- Bias mitigation: Embedding fairness checks in credentialing processes, particularly in AI-driven assessments and areas like skills recognition

By prioritising DEI considerations, institutions can ensure that microcredentialing systems promote inclusivity and provide equitable opportunities for all learners.

Future Outlook/ Future Opportunities

Microcredentials offer significant potential to reshape education and workforce development. This section looks ahead to the opportunities and challenges that lie on the horizon. By building on emerging trends, addressing existing barriers, and embracing innovative approaches, TUs can position themselves as leaders in delivering flexible, skills-focused education.

The discussion explores key areas for growth, including aligning with strategic objectives, establishing a national framework, emphasising work-integrated learning, adopting a flexible and agile approach, and investing in digital infrastructure. By being proactive, TUs can strengthen their role in lifelong learning, support regional development, and contribute to Ireland's economic and social progress in an increasingly skills-driven world.

Aligning With Strategic Objectives

Reviewing the strategic plans of Ireland's TUs reveals common themes that microcredentials can directly support. All emphasise regional engagement, learner-centred approaches, research excellence, digital transformation, and sustainability. Microcredentials provide a flexible and responsive framework for addressing these priorities effectively. The following areas and priorities are particularly well-suited to microcredentialing initiatives:

- Regional engagement: Microcredentials help align academic offerings with local industry requirements, which promotes economic growth and strengthens workforce skills. Developing microcredentials with enterprise can address regional gaps effectively, and collaboration with local organisations can ensure relevant and tangible outcomes
- Learner-centred education: Providing opportunities for diverse groups, microcredentials can engage those seeking professional development, individuals returning to education, and lifelong learners. Their flexible structure enables participants to shape their learning experiences according to their own personal and professional needs, which reflects the inclusive principles of TUs
- Research and innovation: By translating academic research into practical applications, microcredentials support innovation across various sectors. They can help connect academic expertise with industry needs, as well as boost the impact of research while supporting technological and social advancements

- Digital transformation: Delivering microcredentials online aligns with existing investments in digital infrastructure, broadening the reach of TUs, and offering educational opportunities to a wide range of participants regardless of location
- Sustainability: Microcredentials focusing wholly or in part on environmental themes equip participants with the tools to address global challenges. This approach provides a tangible way to reaffirm commitments to sustainable practices and support TUs' long-term goals
- Specific focus areas: While they have many similarities, each TU has the opportunity to develop offerings that reflect its individual strengths. For instance, one might develop microcredentials in social innovation or entrepreneurship, while another might focus on ocean energy and environmental engineering
- Lifelong learning and broader contributions: Microcredentials enable individuals to adapt to changes in their professional fields. By embedding them into strategic plans, TUs can align microcredentials with societal needs, enhance the distinctiveness of their institutions, and reinforce their commitment to inclusivity, innovation, and regional progress

Microcredentials are a versatile tool for TUs to address shared priorities while showcasing their unique strengths. By integrating microcredentials into their strategies, TUs can drive regional development, advance research, promote sustainability, and empower learners, ensuring that their impact aligns with societal and economic needs.

Establishing a national microcredential framework

Microcredentials provide a flexible way for individual TUs to develop unique offerings with enterprise partners. There is also a significant opportunity in Ireland to create a national microcredential framework, aligning with European standards. This would ensure quality assurance and a common format for recognition, and would be based on global technological standards such as Open Badges.

In Ireland, there exist at least two major initiatives relating to microcredentialing. MicroCreds is led by the Irish Universities Association (MicroCreds, n.d.) and offers a range of short, flexible, and accredited courses designed to accommodate various schedules and learning needs. The microcredentials offered by MicroCreds are quality assured and developed in collaboration with industry to address specific skills requirements. There is no mention of MicroCreds being based on any technical standard, and courses usually have prerequisites which are required for an individual to secure a place.

The Open Courses Initiative (OCI) offers courses focused on enhancing teaching practices, endorsed by the National Forum for the Enhancement of Teaching and Learning in Higher Education, which since 2022 has been part of the Higher Education Authority. The OCI approach differs from initiatives such as MicroCreds in two important respects: OCI courses rarely have prerequisites, and they are recognised with the award of Open Badges.

The 1EdTech TrustEd Microcredential Framework, introduced earlier, provides a simple ontology for microcredentials based on technical standards:

- TrustEd Microcredential Knowledge: Issued to a learner for developing a specific set of foundational knowledge demonstrated by a validated assessment that measures the defined learning outcomes. Examples: Successful exam completion at the end of a course or training class, or passing a prior knowledge assessment
- TrustEd Microcredential Application: Issued to a learner based on their demonstrating the ability to apply a specific set of knowledge and assessed by a validated assessment aligned to the defined outcomes. Examples: Completion of a lab, project, or research presentation
- Other Microcredentials or Recognition Badges: Issued to a learner who completes a task or participates in an event. Examples: Webinar attendance, organization membership, or committee service (1EdTech, 2023)

Using this as a starting point for a national microcredential framework could provide a third way as opposed to navigating the vague European definitions and the overly specific definition of microcredentials provided by the QQI. It would be helpful if the latter could take the leading role in establishing such a framework. However, it is important that it not overly constrain TUs or other institutions, whose ability to respond flexibly to industry needs is a key strength.

Work has already been carried out in this area as part of the N-TUTORR programme, which recommended five approaches which may be of benefit to the TU sector (Department of Technology Enhanced Learning, Munster Technological University, 2024):

1. Complementary provision to mainstream education (embedded provision)
2. Alternative provision to mainstream education (parallel provision)
3. A bridge or pathway to access or re-access education
4. Facilitating delivery and acquisition of knowledge in the workplace
5. Facilitating a broad range of learning activities (informal, non-formal, etc.)

Given the mandate of TUs to serve regional economies and deliver applied education, they should retain the freedom to design and develop microcredentials in partnership with enterprises as they see fit. Allowing TUs this autonomy will ensure that microcredentials remain agile and responsive to rapidly changing skills demands. QQI guidelines should provide overarching consistency but avoid imposing bureaucratic hurdles that could hinder innovation or enterprise collaboration.

Emphasising Work-Integrated Learning

By aligning microcredentials with regional skills demands and workplace realities, TUs can enhance their leadership in work-integrated learning. This dual focus on traditional academic pathways and practical workplace learning ensures that offerings meet the evolving needs of both learners and industry. In particular, TUs have the opportunity to:

- Design microcredentials for regional relevance: TUs can draw on their expertise in workplace-based learning to address specific skills gaps. Collaborating with local networks to create flexible, targeted learning experiences helps ensure programmes are not only practical but aligned with regional economic priorities
- Integrate microcredentials into existing frameworks: By building on infrastructure such as SPAs, TUs can develop a robust framework for modular, stackable microcredentials. This approach allows learners to address short-term needs while progressing towards long-term academic or career goals
- Collaborate with enterprise: Partnerships with national organisations enable TUs to identify workforce demands and anticipate emerging trends. These collaborations ensure microcredentials are responsive to current needs while providing learners with the skills required to thrive in evolving job markets.

By balancing academic rigour with practical application, TUs can position microcredentials as a key driver of regional development, workplace adaptability, and lifelong learning.

Adopting A Flexible and Agile Approach

To address the evolving needs of learners and employers, TUs should adopt a flexible and agile approach to microcredentials. By focusing on meaningful pathways, innovative delivery methods, and inclusive systems of recognition, TUs can enhance the value of microcredentials in Ireland. This approach ensures that microcredentials remain relevant and impactful in a rapidly changing educational and professional landscape. Adopting a flexible and agile approach includes:

- Stackable microcredentials: These allow learners to progressively build their skills through targeted units that can be combined into larger qualifications. This approach supports professionals and adult learners seeking to upskill or reskill without committing to full degree programmes, bridging short-term training with long-term goals.
- Collaboration with FET providers: Partnering with FET providers enables institutions to provide seamless transitions between programmes. This broadens access to HE, supports inclusive pathways, and aligns with government priorities to extend education and employment opportunities to underrepresented populations.
- Innovative teaching models: Experiential learning, online education, and blended delivery are ways to provide practical, engaging, and adaptable options for learners with diverse needs. In addition, smaller microcredentials, such as one-credit units (i.e. twenty hours of effort), would offer accessible and incremental learning opportunities with time constraints
- Clear communication: Awareness campaigns should highlight to current and potential learners how microcredentials can help them realise their personal, academic, and professional goals. Showing practical examples of stackable credentials would help demonstrate their value, while increasingly personalised learning pathways can demonstrate an enhanced learner experience
- Digital standards: Adopting recognised technological underpinnings such as the latest version of the Open Badges standard ensures that microcredentials are interoperable, portable, and globally recognised. This approach enhances the credibility and usability of microcredentials, allowing them to integrate seamlessly into both local and international systems

In adopting these strategies, TUs empower learners, meet the needs of employers, and support the broader goal of helping develop a resilient and adaptable workforce.

Investing In Digital Infrastructure

To implement microcredentials effectively, TUs need access to an infrastructure that supports their creation, issuing, and verification. While it may be possible to purchase an off-the-shelf solution, this may lead to issues around vendor lock-in that were discussed in an earlier section. Instead, TUs should look to:

- Adopt open standards and open-source solutions: The Digital Credentials Consortium (DCC) hosted by the Massachusetts Institute of Technology (MIT) offers open-source tools for issuing and verifying credentials. TUs can use

these and simultaneously work with other institutions to build a cohesive microcredentialing system.

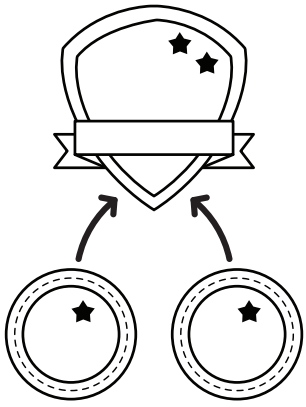
- Ensure compliance with data privacy regulations: Defining data workflows in line with the GDPR is essential, which includes establishing protocols for data collection, storage, and sharing. This also involves integrating systems for learning management, student records, and originality-checking tools, all while ensuring a user-friendly interface.
- Explore shared services with other TUs: Collaborating on shared digital credentialing services can optimise resources and promote standardisation across institutions. By pooling expertise and infrastructure, TUs can develop a unified approach to digital credentials which enhances not only their value, but their recognition as well.

By focusing on these areas, TUs can develop a digital infrastructure that supports the effective deployment of microcredentials, aligning with institutional goals and regulatory requirements.

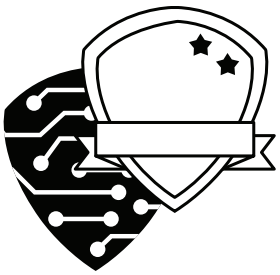
Conclusion

Figure 20: Slicing the sausage (CC BY-ND Visual Thinkery for WAO)

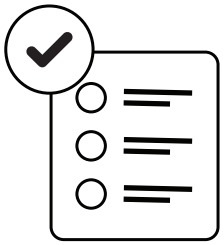
Microcredentials offer an opportunity for institutions to address the changing needs of learners, employers, and society (as illustrated in Figure 20). By adopting this approach, Ireland's TUs can lead the way in delivering accessible, skills-focused education that supports lifelong learning and strengthens regional development.



Strategic benefits of microcredentials – Microcredentials align closely with institutional priorities. Their flexible, modular nature allows TUs to provide learners with targeted pathways that address specific skills gaps. This supports both professional development and enterprise needs, ensuring that qualifications remain relevant and practical. For TUs, these credentials can act as a bridge between academic research, industry requirements, and regional economic priorities, helping to advance their mission in applied education.

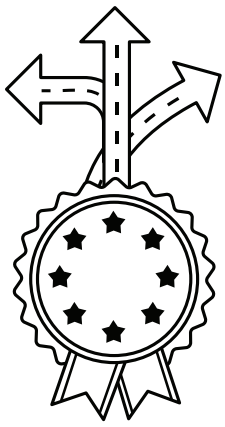


Technological foundations – The adoption of open standards, such as Open Badges v3 and the Verifiable Credentials data model, ensures that microcredentials are secure, interoperable, and portable. These features allow learners to manage their credentials independently while maintaining their usability across different contexts. For TUs, these foundations reduce reliance on proprietary systems and support long-term scalability and adaptability.



Challenges to address – To realise the full potential of microcredentials, several challenges must be addressed:

- Quality assurance: Processes need to strike a balance between rigour and flexibility, allowing innovation without compromising the credibility of the credentials.
- Equity and access: Systems must be designed to include all learners, with a particular focus on underrepresented groups and those with limited access to technology.
- Collaboration: Coordination among TUs and integration with national and European frameworks will ensure consistency of standards while allowing room for innovation.



Opportunities for growth – Looking ahead, TUs can establish themselves as leaders in microcredentialing by focusing on key areas:

- Flexible pathways: Designing microcredentials that can be combined into broader qualifications offers learners the chance to build their skills incrementally.
- Digital infrastructure: Investing in open-source systems and shared services can provide a scalable, cost-effective foundation for credentialing initiatives.
- Employer engagement: Partnerships between TUs and enterprise can ensure microcredentials meet real-world needs and are recognised across sectors.
- Public awareness: Effective communication to the public about microcredentials can highlight their value and help learners and employers understand their practical applications.
- Open Recognition: Incorporating the principles of Open Recognition allows TUs to

acknowledge a wider range of skills, achievements, and experiences. This approach values informal and peer-based learning alongside formal credentials, promoting inclusivity and celebrating diverse contributions.

Leading The Way

TUs are uniquely positioned to take a leadership role in the implementation of microcredentials. By working together and engaging with enterprise and policymakers, they can shape systems that reflect both regional priorities and global standards. This will not only benefit learners but will also support the wider goals of economic development and social inclusion.

Microcredentials are more than a continuation of qualifications-as-usual, representing an important shift towards recognising diverse skills and experiences in a meaningful way. By taking action now, TUs can help to create an educational environment that values adaptability, inclusivity, and innovation, ensuring lasting benefits for individuals, communities, and industries.

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Appendix: Case studies/examples

This section provides examples of microcredential initiatives in Ireland, the UK, Europe, and globally. They have been selected to provide insights into various aspects of successful microcredentialing approaches, with links to find out more.

Ireland

All Aboard digital skills framework

The All Aboard project, a national initiative in Ireland, developed a digital skills framework in order to empower learners and educators in navigating the digital landscape. Making use of the Open Badges standard, the project offers digital badges as microcredentials for completing lessons across various digital competencies. These badges serve as verifiable records of achievement, promoting the recognition of digital skills in both educational and professional contexts. The initiative reinforces the importance of adopting open standards like Open Badges to ensure the portability and credibility of microcredentials.

More information: https://www.allaboardhe.ie/digital-badges

Digital open badges research

Dr Wayne Gibbons' research into digital open badges highlights their role in supporting both formal and informal learning pathways. His work focuses on using badges as tools for recognition, enabling learners to demonstrate their achievements and competencies in meaningful ways. By adopting open standards such as Open Badges, Gibbons' projects have explored how badges can motivate learners, increase engagement, and offer a transparent record of skills that align with industry needs. In a related blog post, he discusses the importance of moving beyond traditional qualifications to embrace more flexible forms of recognition, making microcredentials accessible and effective across diverse learning contexts.

More information: https://openbadgefactory.com/en/reference/dr-wayne-gibbons-research-on-digital-open-badges-2/

Related blog post: https://medium.com/@waynegibbons/thinking-outside-the-box-679d15c3cd19

Open Courses initiative

The Open Courses initiative, facilitated by the Higher Education Authority and the National Forum for the Enhancement of Teaching and Learning in partnership with HE institutions across Ireland, offers flexible, non-accredited professional development opportunities for learners. These courses align with the National Professional Development Framework and use Open Badges to recognise and validate students' learning achievements. Since its inception, the initiative has issued over 5,000 digital badges and trained more than 600 facilitators, demonstrating a commitment to promoting CPD through microcredentials.

More information: https://opencourses.ie/about/

Rudaí 23 Project

The Rudaí 23 Project, led by the Library Association of Ireland, was a professional development initiative aimed at enhancing the digital skills of library professionals. Participants took part in a self-paced programme covering twenty-three essential competencies, including blogging, online networking, and digital curation. The programme issued Open Badges as verifiable microcredentials to recognise and validate participants' achievements. While digital badges were the primary form of recognition, participants also received paper certificates, highlighting a balance between modern and traditional validation methods. This project demonstrates how microcredentials can support professional development and lifelong learning, serving as an accessible and engaging model for skill recognition.

More information:

- Rudaí 23 Website
- YouTube: Rudaí 23 Overview

UK/Europe

The Open University's badged open courses

The Open University offers a range of free badged open courses through its OpenLearn platform. These courses cover various subjects – including health, business, and education – and are designed to provide learners with the opportunity to gain new skills and knowledge at their own pace. Upon completion, participants receive a digital badge, adhering to the Open Badges standard, which can be shared on social media or added to a digital portfolio. This initiative demonstrates how HE institutions can offer

accessible, flexible learning opportunities that recognise and validate learners' achievements.

More information: https://www.open.edu/openlearn/badged-courses

Scottish Social Services Council (SSSC) digital badges

The SSSC issues digital badges to social service workers who complete specific learning activities, effectively microcredentials, or demonstrate particular skills. These badges recognise CPD and encourage lifelong learning within the sector. The initiative illustrates how professional bodies can use Open Badges to support workforce development and acknowledge ongoing learning.

More information: https://www.mylearning.scot/view-all-badges/

Be Badges Initiative (Belgium)

The Be Badges initiative – launched by Selor, the Belgian federal government's recruitment agency – enables individuals to showcase their skills and competencies through digital badges. These Open Badges are linked to the European Skills, Competences, Qualifications and Occupations (ESCO) taxonomy, ensuring that the skills showcased are recognised across Europe. The initiative involves issuers (organisations that assess competencies), earners (individuals who receive badges), and displayers (organisations that view and verify badges), creating a comprehensive ecosystem for skill recognition. This case study highlights the potential for Open Badges to facilitate cross-border recognition of skills and support mobility within the European labour market.

More information: https://oecd-opsi.org/innovations/be-badges/

Further afield

MyCreds™| MesCertif™ National Network (Canada)

Developed by the Association of Registrars of the Universities and Colleges of Canada (ARUCC), MyCreds is a national digital credential wallet. It supports the secure issuance, sharing, and verification of microcredentials, academic records, and professional certifications. MyCreds employs Open Badges to ensure credentials are verifiable and interoperable, allowing learners to easily share their achievements with employers and institutions. This initiative demonstrates the potential of centralised digital platforms to support lifelong learning and skills recognition across a nation.

More information: https://mycreds.ca/members/ecosystem/stay-connected/

New Zealand Qualifications Authority (NZQA) microcredentials (New Zealand)

New Zealand has successfully integrated microcredentials into its national qualifications framework, allowing them to be formally recognised and quality assured by institutions and employers alongside traditional qualifications. NZQA microcredentials are designed to address specific skills needs, with input from industry and employers to ensure their relevance. They are portable and verifiable through Open Badges, making them a valuable tool for both learners and employers. This approach highlights how a cohesive national framework can support lifelong learning and skills development.

More information: https://www2.nzqa.govt.nz/qualifications-and-standards/about-qualifications-and-credentials/micro-credentials/

National Programme on Technology Enhanced Learning (NPTEL) (India)

The NPTEL initiative is a collaboration between the Indian Institutes of Technology and the Indian Institute of Science, offering online certification courses in engineering, sciences, management, and humanities. These courses, which include proctored exams and verified credentials, are designed to enhance learners' professional and academic skills. NPTEL has embraced Open Badges as a means of providing learners with portable and verifiable digital credentials, bridging the gap between education and employment. The programme has seen significant uptake, with millions of learners benefiting from its offerings.

More information: https://nptel.ac.in

Inter-American Development Bank (IDB) Open Badges (Latin America and the Caribbean)

The IDB has implemented an Open Badges initiative to recognise and validate the skills and competencies acquired through its online courses and capacity-building opportunities. The initiative uses digital badges as reliable, secure, and shareable evidence of the competencies participants gain, supporting workforce development and continuous learning in the Latin America and Caribbean region. The IDB's adoption of Open Badges demonstrates a commitment to innovative credentialing practices that enhance the visibility and recognition of learners' achievements.

More information: https://cursos.iadb.org/en/programs/open-badges

Global

Digital Credentials Consortium (DCC)

The DCC is an international collaboration of universities, including MIT, that focuses on creating an open infrastructure for digital academic credentials. Using Open Badges as a foundation, the DCC ensures that credentials are verifiable and secure while promoting interoperability across educational institutions and employers worldwide. The consortium's work supports innovations in microcredentialing, enabling learners to seamlessly share their achievements across borders and industries.

More information: https://digitalcredentials.mit.edu/

Be Badges Initiative (Belgium)

The Be Badges initiative – launched by Selor, the Belgian federal government's recruitment agency – enables individuals to showcase their skills and competencies through digital badges. These Open Badges are linked to the European Skills, Competences, Qualifications and Occupations (ESCO) taxonomy, ensuring that the skills showcased are recognised across Europe. The initiative involves issuers (organisations that assess competencies), earners (individuals who receive badges), and displayers (organisations that view and verify badges), creating a comprehensive ecosystem for skill recognition. This case study highlights the potential for Open Badges to facilitate cross-border recognition of skills and support mobility within the European labour market.

More information: https://oecd-opsi.org/innovations/be-badges/

EdX MicroMasters Programs

EdX offers MicroMasters programmes, which are advanced, graduate-level courses designed by top universities worldwide. These programs focus on career-relevant fields such as data science, project management, and AI. Upon completion, learners earn credentials that can contribute to a full master's degree at participating institutions. EdX incorporates Open Badges to verify and share these credentials, ensuring their portability and transparency. This initiative highlights the global scalability of microcredentials, providing learners with opportunities to upskill and reskill across diverse industries.

More information: https://www.edx.org/micromasters

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