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Towards a European approach to micro-credentials: a study of practices and commonalities in offering micro-credentials in European higher education

Executive Summary



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ABOUT NESET

NESET is an advisory network of experts working on the social dimension of education and training.

The European Commission's Directorate-General for Education and Culture initiated the establishment of the network as the successor to NESSE (2007-2010), NESET (2011-2014) and NESET II (2015-2018).

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Micro-credentials are gaining traction

The growing use of micro-credentials is an outcome of the **changing nature of the labour market** and of growing uncertainty as to what work will look like in the future. Fewer 'jobs for life' now exist, and employers demand flexibility and quick reactions to changing circumstances. The lockdown measures introduced across the EU in the light of COVID-19 had a substantial impact on the EU labour market, with millions of workers losing their jobs or being placed under short-term work schemes. Micro-credentials are particularly useful in this situation, as they **allow for tailored, quick and accessible skills (re)development**. COVID-19 could potentially serve as an opportunity for higher education institutions to increase their offer of micro-credentials. For instance, the Coimbra Group of universities and the German Rectors' Conference (HRK) have issued collective outlooks in which they express support for more flexible and modular programmes, and for recognition by means of micro-credentials in the light of the current crisis. The use of micro-credentials by higher education providers has the potential to foster continuous learning, to fill the knowledge and skills gap, to increase the efficiency of higher education systems, to encourage innovation in provision, and to reach a diverse group of learners (BFUG, 2020).

The pandemic has increased the interest of learners in micro-credentials and massive online open courses (MOOCs), with providers seeing an immense increase in course enrolments compared with the same period in 2019. The number of sessions on MOOC platforms have also increased in March 2020 when compared to February 2020 (see Table 1). Potential learners are looking for additional learning opportunities that are reasonably priced, of short duration and convenient to access.

Table 1. Sessions (in millions) on the most popular MOOC platforms

MOOC provider	Sessions (in millions) ¹
Coursera	45 (up by 67%)
edX	19.2 (up by 52%)
FutureLearn	6.15 (up by 116%)

Source: Class Central, 2020.

Recent years have also seen a **growth in the number of policies and initiatives that support micro-credentials**. On 30 September 2020, the European Commission presented its vision for the creation of a European Education Area by 2025², and announced concrete measures to achieve this along six dimensions. A European approach to micro-credentials is integral to achieving the second dimension on inclusion and gender equality.

"The Commission will work towards the development of a European Approach to micro-credentials, to help widen learning opportunities and strengthen the role of higher education and vocational education and training institutions in lifelong learning by providing more flexible

¹ Number of sessions during March 2020 and percentage change from February 2020.

² With a new Communication on the European Education Area, the Commission proposes new initiatives, more investment and stronger cooperation of Member States to help all Europeans, of all ages, benefit from the EU's rich education and training offer. For more information, please see: https://ec.europa.eu/education/sites/education/files/document-library-docs/eea-communication-sept2020_en.pdf

and modular learning opportunities. (...) The need for more flexible and inclusive learning paths has increased as the student population is becoming more diverse and the learning needs more dynamic (European Commission, 2020)."

On 1 July 2020, the European Commission launched the 'New Skills Agenda for Europe', which places skills at the heart of the EU policy agenda. The Agenda devotes one of its 12 flagship actions to the importance of micro-credentials. Within the framework of the Erasmus+ MICROBOL project, the Bologna Follow-Up Group tasked three working groups with looking at micro-credentials from the perspective of the key commitments within the Bologna Process: (1) quality assurance, (2) recognition, and (3) qualification frameworks and the European Credits Transfer and Accumulation System (ECTS). As a result, the project will explore whether and how the existing European Higher Education Area (EHEA) tools can be used or adapted to be applicable to micro-credentials. Another important development in relation to micro-credentials is the announcement of a Common Microcredential Framework (CMF) by the European MOOC Consortium, which consists of the main European MOOC platforms: FutureLearn, France Université Numérique (FUN), OpenupED, Miríadax and EduOpen.

Micro-credentials are beneficial as standalone certifications, to complement or supplement degree programmes for greater employability, and to improve the level of lifelong learning. Beyond this emerging consensus, challenges still exist in terms of scaling up the use of micro-credentials (see below).

Figure 1. Challenges to scaling up the use of micro-credentials



None of the barriers mentioned above is insurmountable, and they can all be overcome if European educators and policy makers adopt a coherent and consistent approach to micro-credentials.

In this context, **the main objective of this report is to provide a background analysis that will inform the European Commission with regard to the development, provision and recognition of micro-credentials.** This will feed into

a wider consultation and analysis for a European approach to micro-credentials. The report focuses on the higher education sector, but where relevant, it also extends to other sectors.

This report aims to answer the following key research questions:

- If EU policy makers create a European approach governing and harmonising the use of micro-credentials, which aspects should fall under this approach and why? Is an EU-level approach necessary?
- What could the benefits be of the growing provision of micro-credentials?
- What notable practices exist in relation to implementing or governing the implementation of micro-credentials?
- What are the main obstacles to the provision of micro-credentials in higher education and by other education providers?

Micro-credentials to support new learning pathways

To achieve the objective of supporting new learning pathways and to answer the main research questions, the report **reviews the recent literature** that analyses the provision, recognition and impact of micro-credentials. Second, it **maps notable practices** in relation to micro-credentials. This mapping has identified a catalogue of best practices, the most interesting of which are presented in boxes throughout the report. We believe that these real-life examples of practices that have been successfully applied by higher education institutions as well as other education providers, businesses and public organisations, will allow stakeholders to move beyond abstract theoretical ideas, and will encourage the wider adoption of micro-credentials. Third, the report **provides three case studies** that analyse recent notable practices concerning the design, delivery or recognition of short learning courses and micro-credentials. The report looks at the following cases:

- Digital solutions to validate micro-credentials and provide an online visual representation for them, as created by the **'edubadges' project**. This project is led by the organisation SURF in the Netherlands.
- The inclusion of micro-credentials in the **New Zealand qualifications framework**.
- **Micro-credentialling solutions implemented under the Erasmus+ European Universities Initiative³**: the European Consortium of Innovative Universities (ECIU) and the Young Universities for the Future of Europe (YUFE).

Lastly, the report **presents an analytical framework** to answer the question as to the contexts in which a European approach to micro-credentials could be beneficial, depending on the possible roles and purposes of micro-credentials in higher education. The framework presents **three scenarios for the use of micro-credentials**, which are distinguished by the context in which recognition for a micro-credential is determined: (1) within one social system (e.g. the educational system); (2) within two social systems (e.g. education and the labour market); (3) within multiple systems with a high level of permeability, thus facilitating truly recognised lifelong learning.

³ The aim of European Universities Initiative is to bring together a new generation of creative Europeans able to cooperate across languages, borders and disciplines to address societal challenges and skills shortages faced in Europe. For more information, please see: https://ec.europa.eu/education/education-in-the-eu/european-education-area/european-universities-initiative_en

Box 1. Scenarios for the use of micro-credentials in higher education

Scenario 1: Recognition within one social system

Recognition among higher education institutions throughout Europe has been a clear action line of the Bologna Process. In principle, the ECTS, a common system of credit exchange, makes this easy to implement. Higher education tends to be organised in similar ways throughout Europe, i.e. by academic semester, and with all higher education institutions being subject to external quality assurance procedures. A more complex case is the recognition of prior learning, i.e. where a learner has acquired knowledge and skills before enrolling at their present higher education institution. Recognition of prior learning aims to provide learners with alternative access routes into higher education if, for instance, they have not attained the standard entrance examination or if learners wish to have prior learning acquired elsewhere recognised as part of their new course of study.

Scenario 2: Recognition within two social systems

It is vital that the labour market is able to recognise what a learner in higher education has achieved. However, these two systems typically use different forms to describe an individual's achievements. In the past, higher education has documented the achievement of an aggregate level of skills and knowledge. Criticism from employers concerning a lack of detailed information has led to the introduction of the Diploma Supplement, which is widely used within the European Higher Education Area. Micro-credentials can also be used to provide detailed information describing the skills and knowledge acquired by a learner. If they are to be understood and recognised both by educational providers and by the labour market, they need to be formulated in a common language and use common standards. The idea behind ESCO⁴ and the development of the renewed Europass is to formulate such a common language.

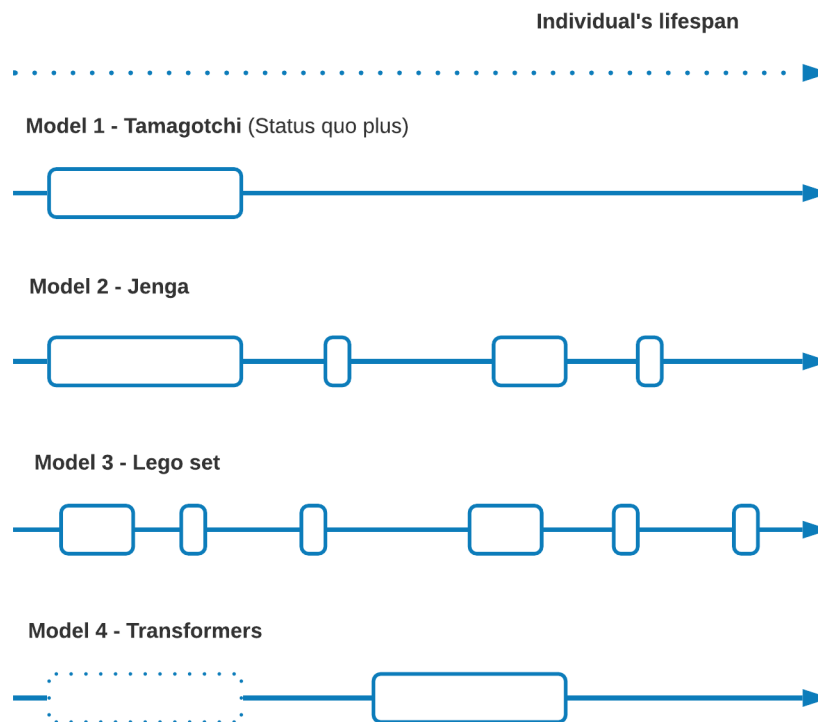
Scenario 3: Recognition across all social systems

Scenario 3 will allow learners to follow more flexible pathways, moving between labour market activities, family and civic duties, and learning acquired through various providers. This scenario places high demands upon the ecosystem created around the micro-credentials, as it can only really work with a low level of friction in the recognition and communication of micro-credentials between each of these social systems. It is unlikely that this could be achieved simply through a combination of standards, technical matching and AI-powered solutions, as recognition is a social process that is highly dependent on the existence of trust-giving systems. It would require the kind of change in the culture of recognition of skills and competencies that is encapsulated by the term 'open recognition', i.e. the recognition of all learning outcomes and achievements throughout life and in all fields.

The relative likelihood of the scenarios presented above is dependent on the future higher education landscape. This landscape is determined by an individual's learning pathway throughout their life. People's lives are no longer linear, and their individual and working lives are complex, multi-stage and non-linear. Thus, higher education institutions need to provide different learning pathways that serve learners throughout the course of their lifetimes. The **analytical framework presents four learning pathway models for higher education**: (1) Tamagotchi; (2) Jenga; (3) Lego set; and (4) Transformers (see figure and box below).

⁴ The ESCO classification identifies and categorises skills, competences, qualifications and occupations relevant to the EU labour market and to education and training.

Figure 2. Four learning pathway models for higher education



Box 2. Learning pathways in higher education

Model 1: Tamagotchi

The learner has typically finished secondary schooling and progresses on to higher education. They enrol in one institution and study relatively intensively for a period of 3-5 years, which leads to the completion of the higher education programme for which they enrolled. Most of the individual's learning following this first block is informal and non-formal, and not directly linked to the first study programme.

Model 2: Jenga

The learner has typically finished secondary schooling and progresses on to higher education. They study relatively intensively for a period of 3 years or less at one higher education institution. Throughout their life, these learners will 'top up' this knowledge via short learning programmes, possibly leading to micro-credentials (which might be taken online or on-campus). Together, these activities make up a complete programme of study that balances on the one hand, foundational and transversal knowledge with – on the other – skills for upskilling and sideways-skilling, as required for the learner's chosen career pathway.

Model 3: Lego set

The learner is highly self-motivated and self-reliant, and wishes to piece together their own full study programme themselves by taking advantage of the offerings available and earning credentials from various education providers (online and on-campus). The learner might also choose to earn additional credentials to change careers or upskill in their career path.

Model 4: Transformer

There is a long break between the learner's period at school and in initial training (which may have included higher education) and a new learning period. They return to higher education either to gain new foundational knowledge and skills, or to increase the level of their formal education. They study relatively intensively for a period of 3-5 years to complete this higher education programme, with the expectation of returning to or re-entering the labour market.

Five policy considerations

Our review suggests that the success of the European approach to micro-credentials will largely depend on the extent to which it achieves the following key impacts:

- Increased **trust** in alternative credentials across all social systems: education and training, the labour market, and society.
- Enhanced **transparency** of learning outcomes achieved as a result of short-duration learning courses.
- **Educational innovation** being encouraged rather than hindered as a result of a common approach.
- **Flexibility** for all learners to choose and access the most individually suitable learning pathways.

The main conclusions of the study, outlined below, could serve as inspiration for the European Commission in designing a European approach to micro-credentials.

1. A European approach to micro-credentials should define the critical information items that any micro-credential must provide.

The mapping of currently available micro-credentials revealed that they share several common characteristics:

- Limited length of learning activities leading to a micro-credential: in higher education, these are usually larger than a single course, but less than a full degree.
- Labour market relevance: focus is on the delivery of specific knowledge, skills and competences that are useful in the labour market.
- Better access to gaining skills: focus is on lifelong learning opportunities that are reasonably priced, short and convenient to access.

In terms of other characteristics, micro-credentials and related learning activities vary quite widely. A European approach to micro-credentials would benefit from a list of critical information items to be provided by all micro-credentials operating within the European framework. Having easily accessible, informative and comparable information items will create greater trust and transparency with regard to micro-credentials among employers, quality assurance agencies, qualification recognition bodies, higher education institutions, learners and other providers (e.g. private institutions, technical and vocational education and training providers, companies, government agencies, non-profit organisations, libraries and museums). The study identifies the following as a list of critical information items to be provided by micro-credentials operating within the framework of a European approach:

- **Title** of the micro-credential, which precisely signals the learning outcomes.
- **Provider** of the course.

- **Date** when the micro-credential was awarded.
- **Description** of the course content and its purpose.
- **Learning outcomes** what the successful learner knows, understands and can do based on this assessed learning.
- **How the learner has participated** online, on-site, or both online and on-site.
- **Credits** number of credits provided, if credit-bearing.
- **Time period** when the learning took place.
- **Any prerequisites** that were required to begin the course.
- **Learning resources** relevant for the credential.
- **Type of assessment** testing, application of a skill, portfolio, etc.
- **Supervision and identity verification** unsupervised with no identity verification, supervised with no identity verification, supervised online, or on-site with identity verification.
- **Quality assurance** the body ensuring the quality of the course.
- **Outcome for a successful learner** admission to a degree programme, credit towards a degree programme, certification or digital badge earned, number of credits.
- **Integration / stackability options** standalone, independent course / integrated, stackable towards another credential.

2. In order to allow educational innovation and flexibility, a European approach should not prescribe or standardise the critical information items too narrowly.

It may be tempting to define the critical information items in such a way that only certain types of micro-credentials will be considered in line with the European approach. At first glance, it may seem appropriate to say that the learning activities leading to micro-credentials should, for example, encompass no fewer than three and no more than 10 ECTS, and that they must be quality-assured. However, our report revealed that any such limits may hinder educational innovation and flexibility, and it is difficult to find grounds for establishing such specific requirements. We therefore suggest establishing a list of critical items without specifying the particular values of these items. This would ensure both trust and transparency with regard to micro-credentials without hindering educational innovation and flexibility. Such an approach would also enable Member States to develop their own local approaches under this broad umbrella that align with its definitions and terminology.

3. Work towards a European digital solution to store micro-credentials.

The lack of digital solutions for the validation, recognition and storage of micro-credentials remains one of the obstacles to their wider uptake. While digital solutions have already gained momentum as a means of providing online learning, and reliable ways exist to organise its provision, digital solutions for storing micro-credentials (such as transcripts, blockchain, learner verification and potential skills matching in recruitment), are promising, but still nascent.

Creating a European digital solution to store micro-credentials would be a strong step towards the practical implementation of a European approach to micro-credentials. A secure and flexible European digital solution for storing micro-credentials would contribute significantly to their transparency and increase trust in them. Current EU

initiatives such as the European Student Card Initiative⁵, Europass⁶ and ESCO classification⁷ could be brought together to build such a digital solution, which could become the standard across Europe. It is also important to ensure that any European digital solutions for storing micro-credentials are:

- based on technologies that are secure, and which authenticate the identity of the learner and protect the certification from misuse or alterations.
- easy to share via different platforms (e.g. social media, e-mail, blog, etc.).
- developed in such a way that European higher education institutions can easily integrate them into their own institutional infrastructures.

4. Existing criteria and measures for quality assurance must be renewed and supplemented in order to be fit for micro-credentials.

The establishment of quality assurance as a key element of higher education is one of the successes of the Bologna Process. There is a consensus that quality assurance is necessary to ensure accountability, support enhancement and instil confidence in courses and modules. In general, the standards and key elements that exist for formal recognition and quality assurance in higher education can and should be applicable to any new forms of learning, certification and credentialisation.

Ideally, quality assurance of recognition procedures in the provision of higher education should be carried out both internally and externally, to ensure that internal quality assurance is in line with European standards (Nuffic, 2019). However, in some cases quality assurance procedures and regulatory frameworks have not yet been adapted to facilitate and monitor digital provision or emerging micro-credentials. The existing criteria and measures used for quality assurance must be renewed and supplemented accordingly, to take appropriate account of digitalisation in teaching and learning, and to ensure security and transparency for all learner groups. In summary: all credit-bearing and stackable micro-credentials must be aligned to a standardised and accepted quality assurance process.

5. Seek opportunities to bring higher education institutions together with employers so that they can find the best ways of designing and delivering micro-credentials.

We found that there are more characteristics in which currently provided micro-credentials differ, than in which they are similar. The two main characteristics that almost all micro-credentials do have in common are that they are used for fairly short courses of learning, and that they are relevant to the labour market. The latter characteristic indicates that engagement between higher education institutions and employers is crucial to ensuring that micro-credentials are valuable in the labour market. Currently, employers appear to be somewhat left out of discussions relating to the design of a European approach to micro-credentials. The European Commission, national governments and other key stakeholders should look for ways to bring in the employer perspective – for example, by organising discussions with the key employers' associations such as EUROCHAMBRES, SMEunited and Business Europe; asking for the

⁵ The European Student Card Initiative will develop an online 'one-stop shop' via the Erasmus+ Mobile App, enabling students to manage all of the administrative steps relating to their mobility period - before, during and after their stay. For more information, please see: https://ec.europa.eu/education/education-in-the-eu/european-student-card-initiative_en

⁶ Europass provides a set of online tools and information to manage learning and careers. For more information, please see: <https://europa.eu/europass/en>

⁷ For more information, please see: <https://ec.europa.eu/esco/portal/home>

opinion of the European Economic and Social Committee; and potentially supporting Erasmus+ projects that bring together higher education institutions and employers.

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