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NATIONAL
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NATIONAL FRAMEWORK for Micro-Credentials Launching in Ukraine

Kyiv - 2024

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Developed within the framework of the project 'MOOC-based Micro-Credentials for teacher professional development' № 101082858 - CRED4TEACH - ERASMUS-EDU-2022-CBHE, performed within the framework of the Erasmus+ program.

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INTRODUCTORY STATEMENT BY THE CHAIRPERSON OF NATIONAL QUALIFICATIONS AGENCY



Yuriy BALANYUK
Chairperson of National Qualifications Agency

Developing a modern national qualifications system is a crucial task for any country. Qualifications are essential for building human capital and supplying the labour market with skilled workers. While financial resources are significant, economic development relies on educated and skilled individuals. We need people

who are eager to continue learning, expand their perspectives, adapt to labour market demands, stay current with trends, and become more resilient to today's challenges.

Ukraine's status as an EU candidate state necessitates significant reflection on the new political and legal realities in the field of qualifications. The top priority is Ukraine's accession to the common European area of educational and professional qualifications. This need is heightened by the current challenging situation, where millions of Ukrainians have been forced to move to European countries due to Russian aggression and are ready to work to support themselves and their families. Therefore, it is crucial that Ukrainian qualifications are clearly understood and recognised.

Integration into the European Qualifications Area involves implementing European policies on micro-credentials. These policies focus on short-term learning, quality assessment of micro-credentials, and the possibility of stacking them to gain higher qualifications. Micro-credentials are becoming a vital tool for ensuring continuous professional development and adapting to the rapidly changing labour market requirements.

I am very gratified that National Qualifications Agency has embraced this wave of innovation and taken a leading role in incorporating micro-credentials into the National Qualifications System and their application within higher education and vocational training systems. The Agency is actively elaborating and implementing new standards and approaches that align with modern requirements and best European practices.

I am convinced that micro-credentials will be a powerful tool for introducing and implementing more flexible approaches to training the next generation of specialists in Ukraine. Through micro-credentials, educational institutions can offer more specialised and short-term courses that cater to the specific needs of employers and the labour market. This facilitates the rapid incorporation of

innovations and the latest technologies into educational programmes, ensuring graduates are well-prepared for contemporary challenges and employer demands.

More importantly, micro-credentials will promote the development of tailored work-based learning opportunities. This means employees can acquire new knowledge and skills directly through their professional activities. This approach not only reduces training costs but also ensures that the competencies gained are practical and immediately applicable.

Thus, micro-credentials represent a crucial step towards establishing a modern, flexible, and efficient educational system in Ukraine that meets both national and European standards.

We are deeply grateful to the Erasmus+ Programme for supporting the project initiatives of National Qualifications Agency. This input is invaluable for achieving our strategic objectives and our goal of joining the European Qualifications Area.

We will continue to uphold the highest standards in qualifications, driven by a newfound motivation in Ukraine. We believe in our collective victory on all fronts.

Glory to Ukraine! Glory to the heroes!

LIST OF ABBREVIATIONS AND ACRONYMS

CEDEFOP	European Centre for the Development of Vocational Training
ECTS	European Credit Transfer and Accumulation System
EHEA	European Higher Education Area
EMC	European MOOC Consortium
EQF	European Qualifications Framework
EU	European Union
HEI	Higher Educational Institution
MOOC	Massive Open Online Course
MC	Micro-Credentials
NQA	National Qualifications Agency
NQF	National Qualifications Framework

1. STATE OF THE ART

Education is entering a new era: short, flexible courses are becoming increasingly popular. This trend can be clearly seen both in the field of supplementing traditional degree education (MICROBOL Project, 2021¹; OECD, 2019²) and in the area of non-formal education, where learning can lead to the acquisition of a professional qualification.

We consider the institutionalization of **micro-credentials** in European and global education policies (micro-credentials, from "micro" - something that is very small in size, and "credentials" - a diploma, confirmation of something, document, qualification, etc.)

Micro-credentials are easily integrated into the digital learning landscape, the digital learning ecosystem (Moore & Piety, 2022³), providing the opportunity to study and obtain certificates online, opening up access to diverse learning opportunities to a wide range of people.

Advantages of Micro-Credentials:

- ✓ **Short-duration learning:** Micro-credentials can be acquired much faster than traditional certificates.
- ✓ **Practical orientation:** Micro-credentials focus on developing practical skills that are essential for work.
- ✓ **Flexibility:** Micro-credentials can be completed online, at your personal pace, making them accessible to people with different lifestyles.
- ✓ **Accessibility:** Micro-credentials are generally less expensive than traditional educational programmes.

The development of micro-credentials helps to meet the educational needs of modern society, raises the level of education and promotes the development of skilled workers.

The COVID-19 pandemic has led to a significant increase of interest in micro-credentials (CEDEFOP, 2023⁴; European Commission, 2023⁵). It is caused by several reasons:

- ✓ **Increasing unemployment:** the pandemic has led to the loss of jobs for many people, forcing them to look for ways to improve their skills and competitiveness in

¹ MICROBOL Project (2021). Micro-credentials and Bologna Key Commitments State of play in the European Higher Education Area. <https://bit.ly/3feSz91>

² OECD (2019). *OECD Skills Strategy 2019: skills to shape a better future*. <https://doi.org/10.1787/9789264313835-en>

³ Moore, S. & Piety, P. (2022). Online learning ecosystems: Comprehensive planning and support for distance learners. *Distance Education*, 42(2), 179–203.

⁴ CEDEFOP (2023b). *Microcredentials for labour market education and training: microcredentials and evolving qualifications systems*. Luxembourg: Publications Office. <https://doi.org/10.1787/9789264313835-en><http://data.europa.eu/doi/10.2801/566352>

⁵ European Commission (2023). *Employment and Social Developments in Europe 2023*. <https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8553>

the labour market. Micro-credentials, due to their short duration and practical orientation, have become an attractive option for those looking for quick and effective ways to develop their skills.

- ✓ **Labour market changes:** the pandemic has also caused significant changes in many industries, requiring new skills and knowledge from workers. Further labour market changes, driven particularly by the rise of artificial intelligence, have made these changes in occupations evident (WEF, 2023⁶). Micro-credentials have become a convenient tool to quickly adapt to these changes.
- ✓ **The increase of online learning:** the pandemic has accelerated the transition to online learning, making micro-credentials even more accessible and practical.

The full-scale Russian invasion of Ukraine has completely changed the country's priorities. Education and training processes have become one of the most vulnerable, failing to stabilize after being tested by the global pandemic. Our educational system has suffered significant losses as a result of Russia's aggression against Ukraine.

The opportunity to find a job is particularly important as it enables Ukrainians fleeing the war to return to normal life.

Educational institutions, which are forced to adapt to restrictions and threats, are faced with the task of ensuring not only safety and reliability, but also accessibility of education in the most difficult conditions. And it is micro-credentials that provide flexibility and facilitate the gap between traditional educational qualifications and the dynamic labour market demands, as well as the adaptation of education to the labour market changes (Rashkevych & Semigina, 2022⁷).

The development of micro-credentials has been facilitated by **the institutionalization of pan-European policy**. In June 2022, the Council of the European Union adopted the Recommendation on a European approach to micro-credentials for lifelong learning and employability (Council Recommendation on a European approach to micro-credentials for lifelong learning and employability) (Council of the EU, 2022⁸).

The emphasis on a European approach was important considering that micro-credentials have become widespread all over the world and different countries have incorporated them into their qualifications systems in different ways. The European Commission itself is interested in harmonizing approaches at the European level. Hence, the Recommendation imposed to the European Union (EU) Member States certain requirements for the introduction of micro-credentials and harmonization of documents, adoption of appropriate education and labour market policies that enable recognition of micro-credentials both those acquired in a particular

⁶ WEF (2023). *The Future of Jobs Report 2023*. <https://bit.ly/3QbINTk>

⁷ Rashkevych, Y., Semigina, T. (2022). *Microcredentials and the development of educational systems. Pedagogical comparativistics and international education 2022: materials of the VI International scientific and practical conference* / Institute of Pedagogy of the National Academy of Pedagogical Sciences of Ukraine (pp. 229-233). Kyiv-Ternopil: Krok.

⁸ Council of the EU (2022). *Council Recommendation on a European approach to micro-credentials for lifelong learning and employability*. <https://bit.ly/3SaYFrj>

country and those acquired in other countries (Semigina & Rashkevych, 2023⁹). Fig. 1 shows the key aspects of the EU micro-credentials policy.

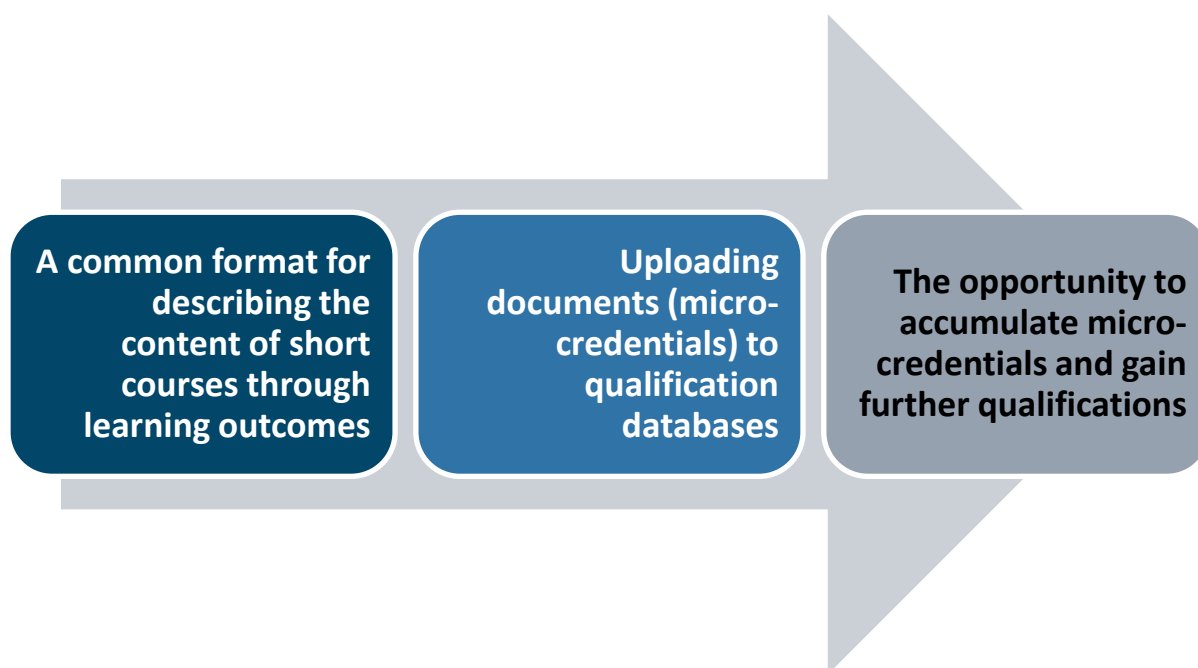


Figure 1. Key components of the micro-credentials policy (based on EU norms).

Authors' development.

According to EU policy, micro-credentials, in line with national priorities and decisions, can be integrated into the National Qualifications Frameworks or Systems, where applicable.

Simultaneously with the micro-credentials document, the European Commission developed and approved the Recommendation on Individual Learning Accounts. EU Member States are encouraged to create individual learning accounts for each person. This will allow not only to involve more adults in educational programmes for updating skills and to recognize the results of non-formal learning more easily, but also to create an effective structure for validating the results of various short-term learning and obtaining relevant micro-credentials certificates, and their mutual recognition in different European countries (Council of the EU, 2022¹⁰).

Both Recommendations are a continuation of the European policy for the development of lifelong learning, in particular as reflected in the documents:

- ✓ European Skills Agenda (European Commission, 2020¹¹);
- ✓ European Pillar of Social Rights (European Commission, 2017¹²) and its implementation plan;

⁹ Semigina, T. & Rashkevych, Y. (2023). *Micro-Credentials as an educational trend and a challenge for higher education. Universities and Leadership*, 16, 77-89. <https://doi.org/10.31874/2520-6702-2023-16-77-89>

¹⁰ Council of the EU (2022). *Council Recommendation on individual learning accounts*. <https://data.consilium.europa.eu/doc/document/ST-8944-2022-INIT/en/pdf>

¹¹ European Commission (2020). *European skills agenda for sustainable competitiveness, social fairness and resilience*. <https://bit.ly/3ukN0tZ>

¹² European Commission (2017). *European Pillars of Social Rights in 20 principles*. <https://ec.europa.eu/social/main.jsp?catId=1606&langId=en>

- ✓ Council Resolution on a strategic framework for European cooperation in education and training towards the European Education Area and beyond (2021–2030) (Council of the European Union, 2021¹³);
- ✓ Green Competences - the European sustainability competence framework (Bianchi et al., 2022¹⁴);
- ✓ The Digital Competence Framework for Citizens – With new examples of knowledge, skills and attitudes' (European Commission, 2022¹⁵);
- ✓ Council Resolution on a New European Agenda for Adult Learning (Council of the EU, 2021¹⁶), etc.

Research (CEDEFOP, 2024¹⁷) has shown that micro-credentials are currently in demand on the European labour market:

- ✓ range from providing an entry point into the labour market, for example in the hospitality, care and service sectors, to providing highly valued professional solutions for replenishment in advanced IT manufacturing;
- ✓ form industrial ecosystems in the form of innovation clusters, and play a role in business innovation and even in the economic restructuring of regions;
- ✓ are locally targeted and accessible through global platforms, providing a rapid and targeted response to specific skills gaps, while others are part of a comprehensive skills development strategy.

CEDEFOP emphasizes that micro-credentials will continue to play a key role both in workforce development, individual employability and as a bridge to lifelong learning. This requires assurances for users that micro-credentials can indeed serve as a reliable source of information about their qualifications.

The demand for labour in Ukraine is high: in the coming years our country will face a shortage of millions of workers. Post-war reconstruction will make this need even more acute (NIS, 2024¹⁸). According to experts, the importance of skills in operating with modern equipment, using the latest technologies and digital skills will grow. Skills in handling data and integrating artificial intelligence systems into work processes are especially important. The European integration perspectives lead to an increased demand for knowledge of European

¹³ Council of the European Union (2021). *Council Resolution on a strategic framework for European cooperation in education and training towards the European Education Area and beyond (2021–2030)*. Official Journal, C66, 1–21. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021G0226%2801%29&q id=1617706323424>

¹⁴ Bianchi, G., Pisiotis, U. & Cabrera Giraldez, M. (2022). *GreenComp The European sustainability competence framework*. Luxembourg: Publications Office of the European Union. <https://publications.jrc.ec.europa.eu/repository/handle/JRC128040>

¹⁵ European Commission (2022). *DigComp 2.2: The Digital Competence Framework for Citizens – With new examples of knowledge, skills and attitudes*. <https://bit.ly/3nbvpR2>

¹⁶ Council of the EU (2021). *Council Resolution on a New European Agenda for Adult Learning*. <https://data.consilium.europa.eu/doc/document/ST-14485-2021-INIT/en/pdf>

¹⁷ CEDEFOP (2024). *Microcredentials striving to combine credibility and agility*. https://www.cedefop.europa.eu/files/9192_en.pdf

¹⁸ NISS (2024). *Recovery of the labour market in Ukraine during the war: regional aspects*. <https://niss.gov.ua/en/node/5217>

norms and standards (Sudakov & Lisohor, 2023¹⁹). Labour shortages and qualification gaps can be overcome in particular through short-term flexible learning, the results of which are recognized by the state and the labour market. These are the factors that encourage the introduction of micro-credentials in Ukraine and the development of relevant national policies and practices in educational institutions.

Currently, the phenomenon of short-term learning is not new for Ukraine, but the conceptualization of 'micro-credentials' has not yet taken place and the term is not defined in legislation, nor is the place of micro-credentials in the National Qualifications System.

At the same time, laws and regulations provide for the recognition of the results of non-formal education in educational institutions (Ministry of Education and Science of Ukraine, 2022²⁰). The qualification centers are being developed to allow for the validation of the results of non-formal and informal education and, on this basis, to acquire a professional qualification (Cabinet of Ministers of Ukraine, 2021²¹). This provides the institutional basis that can enable the rapid implementation of the European policy on micro-credentials, recognizing them as part of the National Qualifications System (Semigina, 2024²²).

Taking into account the trends in non-formal education, the European policy on lifelong learning, and the domestic labour market requirements, **the implementation of micro-credentials is** not only an effective tool for career development, which is becoming increasingly popular in times of labour market changes, but **also an important resource for meeting the economy's demand for skilled workers.**

¹⁹ Sudakov, M. & Lisohor, L. (2023). *Labour market of Ukraine 2022-2023: state, trends and prospects*. https://solidarityfund.org.ua/wp-content/uploads/2023/04/ebrd_ukraine-lm-1.pdf.

²⁰ Ministry of Education and Science of Ukraine (2022). *On Approval of the Procedure for Recognition in Higher and Professional Pre-Higher Education of Learning Outcomes Acquired through Non-formal and/or Informal Education: Order No. 130*. <https://mon.gov.ua/ua/npa/pro-zatverdzhennya-poryadku-viznannya-u-vishij-ta-fahovij-peredvishij-osviti-rezultativ-navchannya-zdobutih-shlyahom-noformalnoyi-taabo-informalnoyi-osviti>

²¹ Cabinet of Ministers of Ukraine (2021). *On approval of the Procedure for awarding and confirming professional qualifications by the qualification centres*: Resolution No. 956. <https://zakon.rada.gov.ua/laws/show/956-2021-%D0%BF#Text>

²² Semigina, T. (2024). *Microcredentials as a tool for flexible education and better employment: policy aspects. Scientific orientations: theory and practice of research: a collection of scientific papers with materials of the III International scientific conference (pp.255-257)*. Vinnytsia: Ukrlogos.

2. FRAMEWORK OBJECTIVE AND SCOPE

The National Framework is intended to contribute to the development of holistic approaches to the development and implementation of micro-credentials in Ukraine as part of the National Qualifications System, which should become the basis for the implementation of the key provisions of the EU Council Recommendation on a European approach to micro-credentials for lifelong learning and employability (Council of the EU, 2022²³).

The National Framework includes the main concepts and principles of micro-credentials, key components of the implementation of micro-credentials in Ukraine. The document also provides information on the National Qualifications System and discusses the tasks of identifying the place of micro-credentials in it.

Since the national legal framework of Ukraine currently does not currently contain any specific substantive norms and regulatory procedures for social relations in the field of micro-credentials, the authors of this documents were guided by the norms and regulatory procedures defined in the acts of the European Union when developing this document.

The document is primarily intended for educational institutions, which can use this National Framework to develop their own provisions for organising short-term learning, in the form of Massive Open Online Courses (hereinafter referred to as MOOC-based pedagogies), and for recognising the results of such training.

The ideas and provisions of this National Framework may also be useful for short-term learning organisers outside of educational institutions, for example, when organising work-based training with further certification of the learning outcomes.

The document also provides recommendations for the development of the policy and legal framework for the introduction of micro-credentials in Ukraine and their integration into the National Qualifications Framework.

²³ Council of the EU (2022). *Council Recommendation on a European approach to micro-credentials for lifelong learning and employability*. <https://bit.ly/3SaYFrj>

3. KEY CONCEPTS AND TERMS

3.1. Definition of micro-credentials

The EU Council Recommendation on a European approach to micro-credentials for lifelong learning and employability (Council of the EU, 2022²⁴) provides the following definition of micro-credentials.

Micro-credential

It means the record of the learning outcomes that a learner has acquired following a small volume of learning. These learning outcomes will have been assessed against transparent and clearly defined criteria.

Learning experiences leading to micro-credentials are designed to provide the learner with specific knowledge, skills and competences that respond to societal, personal, cultural or labour market needs.

Micro-credentials are owned by the learner, can be shared and are portable. They may be stand-alone or combined into larger credentials. They are underpinned by quality assurance following agreed standards in the relevant sector or area of activity.

Micro-credentials are currently characterised as small, specialised training programmes aimed at the rapid acquisition of specific skills or competences in a particular area, which are flexible and relevant. These programmes can be provided in both formal and non-formal education. Their specific feature is their focus on learning outcomes. On the other hand, these learning outcomes should be standardised and recognised by the labour market.

These features of micro-credentials are presented in Fig. 2.

²⁴ Council of the EU (2022). *Council Recommendation on a European approach to micro-credentials for lifelong learning and employability*. <https://bit.ly/3SaYFrj>

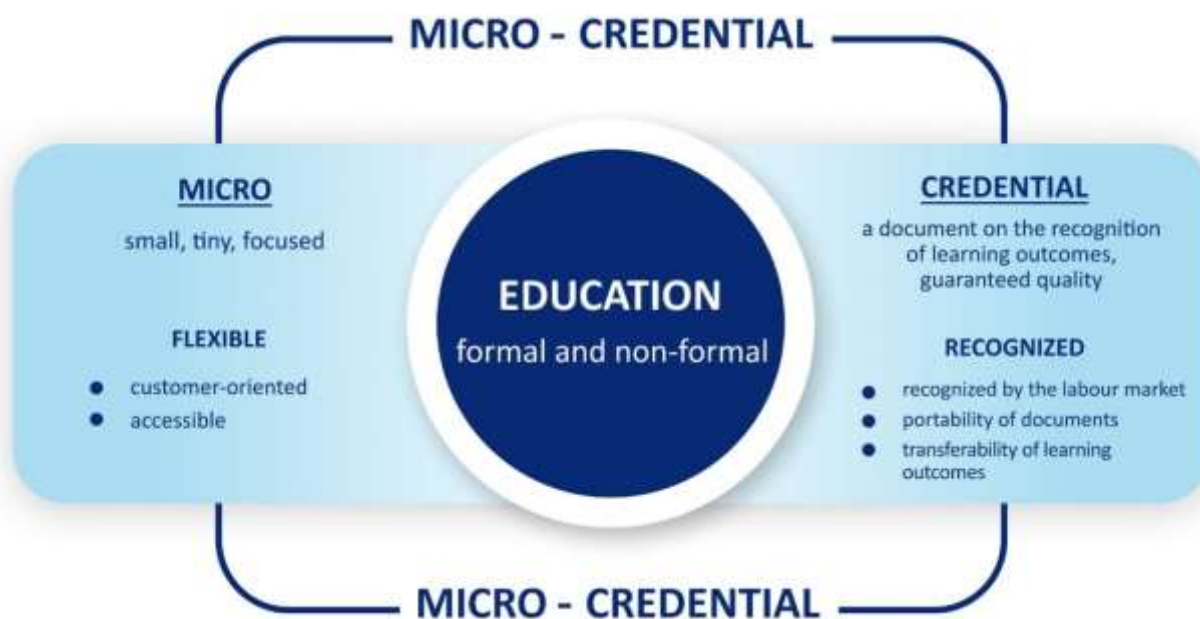


Figure 2. Interpretation of micro-credentials in the European Qualifications Area
Authors' development.

3.2. Other definitions

The Recommendations include terms used in the meanings provided in the Council of Europe Recommendation on a European approach to micro-credentials for lifelong learning and employability (Council of the EU, 2022²⁵).

Informal learning means learning resulting from daily activities and experiences which is not organised or structured in terms of objectives, time or learning support; it may be unintentional from the learner's perspective. It does not automatically lead to a micro-credential but can be considered in the context of validation arrangements which may identify, document, assess and/or certify an individual's learning outcomes.

Learning settings means the diverse physical, online, blended, virtual and digital locations, contexts, and cultures in which people learn, encompassing all settings in which formal, non-formal and informal learning can occur.

Stackability means the possibility, where relevant, to combine different micro-credentials and build logically upon each other.

Non-formal learning means learning which takes place outside formal education and training through planned activities in terms of learning objectives and learning time and where some form of learning support is present.

²⁵ Council of the EU (2022). *Council Recommendation on a European approach to micro-credentials for lifelong learning and employability*. <https://bit.ly/3SaYFrj>

Assessment means the process or method used to evaluate, measure and eventually describe the learning outcomes.

Portability means the ability for a credential-holder to store their micro-credential in a system of their choice, to share the credential with a party of their choice (whether national or transnational) and for all parties in the exchange to be able to understand the content of and verify the authenticity of the credential.

Providers of micro-credentials means education and training institutions and organisations, social partners (i.e. organisations representing workers and employers), employers and industry, civil society organisations and public employment services (PES), and regional and national authorities, and other types of stakeholders designing, delivering and issuing micro-credentials for formal, non-formal and informal learning.

Formal learning means learning which takes place in an organised and structured environment, specifically dedicated to learning, and typically leads to the award of a qualification, usually in the form of a certificate or a diploma.

For providers of micro-credentials and stakeholders in the qualifications system, **there are also important terms and concepts defined in the Law of Ukraine "On Education"** (Verkhovna Rada of Ukraine, 2017²⁶).

Qualification means a standardised set of competences (learning outcomes) acquired by a person, recognised by an authorised entity and certified by a relevant document.

Competence means a dynamic combination of knowledge, skills, abilities, ways of thinking, attitudes, values, and other personal qualities that determines person's ability to successfully socialise, conduct professional and/or further educational activities.

Educational activity means the activity of an educational entity aimed at organising, providing and implementation of the educational process in formal and/or non-formal education.

Educational programme means a common set of educational components (subjects, disciplines, individual tasks, control measures, etc.) planned and organised to achieve certain learning outcomes.

Learning outcomes mean knowledge, skills, abilities, ways of thinking, attitudes, values, other personal qualities acquired in the process of learning, education and development that can be identified, planned, assessed and measured and which a person is able to demonstrate after completing an educational programme or individual educational components.

Quality of educational activity means the level of organisation, provision and implementation of the educational process that ensures the individuals receive a quality education and meets the requirements established by law and/or the contract for the provision of educational services.

²⁶ Verkhovna Rada of Ukraine (2017). *On education: Law No. 2145-VIII (as amended)*. <https://zakon.rada.gov.ua/laws/show/2145-19#Text>

Some other terms and concepts related to European approaches to micro-credentials and the recognition of short-term learning outcomes can be found in the **glossary of educational terminology developed by the European Centre for the Development of Vocational Education and Training** (CEDEFOP, 2024²⁷).

²⁷ CEDEFOP (2024). *Terminology of European education and training policy: a selection of 430 terms: 3d ed.*. Luxembourg: Publications Office. Cedefop reference series. <https://data.europa.eu/doi/10.2801/991753>

4. STAKEHOLDERS IN THE FIELD OF MICRO-CREDENTIALS

Taking into account the European definition of micro-credential providers and regulations on relations in the field of qualifications (Council of the EU, 2022²⁸), **the main tasks and functions of entities** in this area can be considered as follows:

- ✓ **Actualization:** Need analysis and market research for the development of micro-credentials. This includes regular monitoring and research of labour market trends to identify new needs and opportunities for professional development.
- ✓ **Designing micro-credentials:** Designing of short-term learning programmes that meet current labour market needs. This is a process that includes determining learning objectives, developing learning materials and methods, and developing relevant competencies.
- ✓ **Development and implementation of micro-credentials:** Arrangement and delivering learning courses, workshops and other educational activities aimed at the obtaining of micro-credentials. This includes providing the necessary resources, infrastructure and skilled teachers.
- ✓ **Assessment of learning outcomes and awarding of micro-credentials:** testing, exams and other forms of assessment to confirm that learners have acquired the required knowledge and skills. Based on the results of the assessment, documents certifying the obtaining of micro-credentials are issued.
- ✓ **Recognition of micro-credentials and their validation:** the legal formalisation of a document in the labour market that provides access to professional activities. This includes procedures for formal recognition of micro-credentials by public authorities and employers, allowing their integration into the National Qualifications System.

In Ukraine, there is no clear definition of the stakeholders in the field of micro-credentials, their tasks and functions. Indirectly, the information is contained in the legislation on educational activities and certification of qualifications in certain types of professional activities. For example, the Ukrainian National Bar Association, which, according to the Law 'On the Bar and the Practice of Law' (Verkhovna Rada of Ukraine, 2023²⁹), within the framework of the bar self-government, has been granted the right by the state to conduct qualification exams that give the right to practice law. This professional association also actively and frequently conducts short-term training for its members.

Some NGOs have established an educational environment on their own, where the ideas of micro-credentials are being successfully implemented. For example, the Expert Multisectoral

²⁸ Council of the EU (2022). *Council Recommendation on a European approach to micro-credentials for lifelong learning and employability*. <https://bit.ly/3SaYFrI>

²⁹ Verkhovna Rada of Ukraine (2023). *On the Bar and Practice of Law*. Law of 5 July 2012. No. 5076 (as amended in 2023) <https://zakon.rada.gov.ua/laws/show/5076-17>.

Association of Ukraine (EMAU, 2024³⁰) is a public union that implements short-term educational programmes covering various areas of activity: from developing marketing strategies for an enterprise to managing apartment buildings. After graduation, students can undergo an independent professional certification and receive a qualification certificate in the field of 'Manager (administrator) of an apartment building' (level 1).

The State Employment Service (2024³¹) is implementing a number of training courses for registered unemployed people and allows for the recognition of non-formal learning outcomes.

Some government agencies (Ministry of Social Policy of Ukraine, 2024³²; Centre for Public Health of Ukraine, 2024³³) have their own online learning platforms that offer relevant short-term courses, the results of which are recognised by employers.

There are also a number of commercial and non-profit online platforms in Ukraine that offer general and thematic learning programmes, trainings, workshops, etc. with ongoing certification and the issuance of a digital certificate. For example, Evopro is an educational platform for doctors that provides a number of preparatory educational activities for certification for the assignment and validation of the qualification category of medical workers through non-formal and informal education in the system of continuous professional development with a certificate of such development (Evopro, 2024³⁴).

Educational institutions may implement short educational programmes leading to micro-credentials as postgraduate studies in the forms defined by the Law of Ukraine "On Education" (Verkhovna Rada of Ukraine, 2017³⁵) or in other forms not prohibited by the law.

The activities of the entities listed here as examples, as well as other providers, ensure that educational services are adapted to the rapidly changing labour market requirements, contributing to the continuous professional development and competitiveness of Ukrainian workers at the national and international levels.

Table 1 summarizes information on stakeholders in the field of micro-credentials in Ukraine and their functions:

³⁰ EMAU (2024). 'EMAU - Academy invites to study'. <http://emau.kiev.ua/spisok-kursiv/>

³¹ State Employment Service (2024). *Vocational training (reskilling)*. <https://dcz.gov.ua/profnavch>

³² Ministry of Social Policy of Ukraine (2024). *Social education platform*. <https://socialacademy.gov.ua/>

³³ Public Health Centre of Ukraine (2024). *Online courses*. https://portal.phc.org.ua/en/view_all_courses/

³⁴ Evopro (2024). *Events for doctors, students and interns*. <https://evopro.pro>

³⁵ Verkhovna Rada of Ukraine (2017). *On education: Law No. 2145-VIII (as amended)*. <https://zakon.rada.gov.ua/laws/show/2145-19#Text>

	Actualisation	Designing of MCs	Development and implementation of MCs	Assessment of learning outcomes and awarding of MCs	Recognition of micro-credentials and their validation
<i>Educational institutions</i>	X	X	X	X	X
<i>Enterprises and organisation's of all forms of ownership</i>	X	X	X	X	
<i>Professional associations</i>	X	X	X	X	
<i>Online platforms</i>	X	X	X	X	
<i>Social partners (employers' organisations and trade unions)</i>	X	X	X	X	
<i>State Employment Service</i>	X	X	X	X	X
<i>State and local authorities</i>					X

Table 1: Stakeholders in the field of qualifications in Ukraine and their typical functions (Authors' development).

National Qualifications Agency (hereafter referred to as **NQA**) plays a key role in the Ukrainian qualifications system and is therefore responsible for the implementation of micro-credentials and their official recognition in the labour market. In particular, NQA is responsible for:

- ✓ development of the National Qualifications System, which reflects the levels and standards of qualifications in various fields of activity;
- ✓ developing and implementing of procedures for the recognition of professional qualifications acquired through formal, non-formal and informal learning both in Ukraine and abroad, which facilitates the mobility of workers from different sectors and countries;
- ✓ providing consultations and support to various stakeholders, including employers, educational institutions and other organisations on qualifications issues, etc.

Stakeholders in the field of qualifications can cooperate in various ways to achieve the common goal of recognising and promoting micro-credentials in the labour market. The **following forms of cooperation** can be recommended:

1. Partnership agreements and consortia: Partnership agreements between educational institutions, professional associations, enterprises, and other organisations allow the pooling of resources and expertise for the development and implementation of micro-credentials. Consortia can jointly develop educational programmes, conduct labour market research, and ensure the quality of educational programmes.

2. Joint educational programmes and courses: Educational institutions and other stakeholders can create joint educational programmes and courses that meet the needs of the labour market. This includes the joint development of teaching materials, lectures, and seminars, as well as the organisation of practical training and internships.

3. Networks and platforms for information exchange: Establishing networks and platforms for information exchange allows stakeholders in the field of qualifications to share best practices, new researches and innovations. These can include online platforms, forums, conferences and workshops that facilitate professional development and exchange of experience.

4. Joint recognition of qualifications: The development of common criteria and standards for the recognition of micro-credentials facilitates their legalisation in the labour market. This includes harmonisation of assessment, certification and accreditation procedures, allowing employers to recognise micro-credentials regardless of the place of their acquiring.

5. Integration into national and international qualifications frameworks: Working with government agencies and international organisations to integrate micro-credentials into national and international qualifications frameworks ensures their recognition and increases workforce mobility. This includes participation in the development of policies, standards, and regulations.

6. Support and guidance: Stakeholders in the field of qualifications can provide support and guidance to employers, learners, and other stakeholders on micro-credentials. This includes arrangement of trainings, workshops and providing information resources to facilitate the implementation of micro-credentials.

7. Joint research and analysis: This allows stakeholders in the field of qualifications to better understand competence requirements and develop appropriate micro-credentials. This includes analysing labour market trends, forecasting changes and identifying new areas of professional development.

8. Innovative projects and initiatives: Participation in joint projects and initiatives contributes to the development of new approaches to delivering and assessing micro-credentials. These can include pilot projects, experimental programmes, and the use of new technologies to improve the efficiency of educational processes.

Various forms of cooperation allow combining efforts and resources to develop effective and relevant educational programmes that meet the modern labour market requirements and promote the professional development of students.

Effective cooperation of stakeholders in the field of micro-credentials requires reliable **mechanisms for communication and information exchange:**

- ✓ Online platforms and social networks (specialised websites, forums and professional groups in social networks, e.g. LinkedIn).
- ✓ Regular meetings and conferences (seminars, workshops and working groups to discuss current issues and cooperation).
- ✓ Common information resources (databases, digital libraries, and information centers for access to relevant information and materials).
- ✓ Digital tools and technologies (webinars, videoconferences, learning management systems (LMS) and digital wallets for storing and disseminating micro-credentials).
- ✓ Publications and newsletters (regular news releases, reports, analytical materials, research articles in journals).
- ✓ Multisectoral councils and committees (national/regional qualifications councils and micro-credentials development committees) to coordinate and harmonise actions between stakeholders.

These mechanisms ensure effective communication, coordination of efforts and transparency of information, which contribute to the successful implementation of micro-credentials and ensure their quality.

5. CORE PRINCIPLES OF MICRO-CREDENTIALS

All stakeholders in the field of micro-credentials must adhere to certain principles when developing and implementing short-term learning programmes that result in the issuance of a micro-credential document, and ensure the appropriate quality of micro-credentials.

The EU Council Recommendation on a European approach to micro-credentials for lifelong learning and employability (Council of the EU, 2022³⁶) proposes 10 principles to guide the development and award of micro-credentials.

Principles of micro-credentials (The EU Council)

- ✓ Quality
- ✓ Transparency
- ✓ Relevance
- ✓ Valid assessment
- ✓ Learning pathways
- ✓ Recognition
- ✓ Portable
- ✓ Learner-centred
- ✓ Authentic
- ✓ Information and guidance

These principles demonstrate the systemic nature of micro-credentials and that they should be integrated into the overall qualifications system in a country, as well as into the technological platforms used for the recognition, award or validation of qualifications.

These principles define the essence of micro-credentials and their nature and provide assistance to EU Member States in the implementation of micro-credentials as well as in the development of micro-credentials systems.

These principles emphasise the key characteristics of the European approach to micro-credentials that can ensure the credibility and quality of micro-credentials.

These principles are universal and can be applied to any field or industry if appropriate.

The discussions held with stakeholders in Ukraine allowed to adapt the principles developed at the European level to the Ukrainian context. Initially, seven principles of micro-credentials were proposed as part of the National Qualifications System (Semigina &

³⁶ Council of the EU (2022). *Council Recommendation on a European approach to micro-credentials for lifelong learning and employability*. <https://bit.ly/3SaYFrj>

Rashkevych, 2023³⁷). But later, taking into account the fact that the focus is on a distinct practical orientation, one more, eighth principle was added. These principles are presented in Fig. 3.

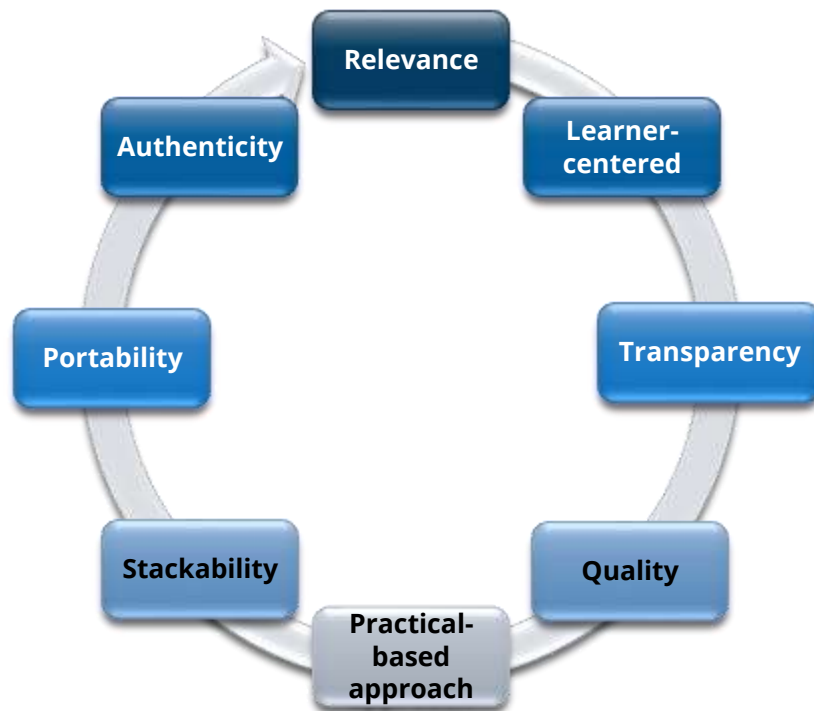


Fig. 3. Principles of micro-credentials as a part of the National Qualifications System of Ukraine. *Authors' development.*

The following principles are presented in more details.

- ✓ **Relevance:** micro-credentials should be designed and delivered as distinct, autonomous, learning achievement-based units.
- ✓ **Learner-centered:** learners are involved in internal and external quality assurance processes and their feedback is taken into account in the constant improvement of micro-credentials. Micro-credentials are designed to meet the needs of the target group of learners.
- ✓ **Transparency:** micro-credentials should be measurable, comparable and understandable, and should contain clear information on learning outcomes, required learning load, content, level and, where appropriate, educational offerings; micro-credentials may be included in the National Qualifications Framework.
- ✓ **Quality:** micro-credentials are subject to internal and external quality assurance by the system producing them (e.g. the education, training or labour market context in which the micro-credential is developed and delivered). Quality assurance processes must

³⁷ Semigina, T. & Rashkevich, Y. (2023). *Micro-credentials as an educational trend and a challenge for higher education. Universities and Leadership*, 16, 77-89. <https://doi.org/10.31874/2520-6702-2023-16-77-89>

be fit-for-purpose, clearly documented and accessible and meet the needs and expectations of learners and stakeholders.

- ✓ **Practical-based orientation:** micro-credentials aim to acquire specific skills and knowledge that meet the labour market requirements or personal needs of learners; they are an important means of professional development that provides increased access to the workplace.
- ✓ **Stackability:** micro-credentials are designed to be modular so that other micro-credentials can be added to them to create larger qualifications (e.g. partial or full); they are a tool to support flexible learning pathways, including the possibility of validation, recognition and accumulation of micro-credentials from different systems.
- ✓ **Portability:** micro-credentials are owned by the credential-holder (the learner) and can be easily stored and shared by the holder, including through secure digital wallets (e.g. Europass); this adds value and ensures transferability, meaning that learning outcomes can be used in different contexts and organisations.
- ✓ **Authenticity:** micro-credentials contain sufficient information to check the identity of the credential-holder (learner), the legal identity of the issuer, the date and place of issuance of the micro-credential.

In general, these principles take into account the labour market requirements, individual characteristics of learners, and ensure quality and integrity in the micro-credentials system.

6. ELABORATION AND IMPLEMENTATION OF MICRO-CREDENTIALS

6.1. Design of micro-credentials and their characteristics

The elaboration of micro-credentials involves careful design to ensure that learning programs are relevant to current labour market requirements and the needs of learners.

One of the important theoretical concepts for elaboration of micro-credentials is **the theory of Constructive Alignment** proposed by John Biggs (Biggs, 1996³⁸). This theory assumes that all aspects of the learning process - from identifying learning objectives to teaching and assessment methods - should be interconnected and aimed at achieving the desired learning outcomes. The main components of constructive alignment include:

- ✓ **Clearly defined learning outcomes:** what learners should know, understand and be able to do after completing the course.
- ✓ **Learning tasks and activities:** what directly contributes to the achievement of these outcomes.
- ✓ **Assessment:** that clearly measures the achievement of the learning outcomes.

This theory is considered fundamental to the organisation of modern vocational education and training, regardless of its form or duration (Fransson & Friberg, 2015³⁹).

The Council of Europe Recommendation on a European approach to micro-credentials for lifelong learning and employability (Council of the EU, 2022⁴⁰) emphasises that micro-credentials should be developed not only as a separate training course or short learning programme, but also based on **the identification of learning needs**, relevance to employers' demands and regular updating. Such an approach will help to shape the readiness of the student to meet new labour market requirements, and the educational institution to focus on the employability of potential graduates. This provision clearly demonstrates the necessity for providers of micro-credentials to adapt their offer to modern labour market requirements and other social needs.

The development of short-term, flexible learning programmes should take into account that micro-credentials can be used in higher education:

- ✓ to expand the range of educational provision (increase visibility);

³⁸ Biggs, J. (1996). Enhancing Teaching Through Constructive Alignment. *Higher Education*, 32(3), 347–364. <https://doi.org/10.1007/BF00138871>

³⁹ Fransson, O., & Friberg, T. (2015). Constructive alignment: from professional teaching technique to governance of profession. *European Journal of Higher Education*, 5(2), 141–156. <https://doi.org/10.1080/21568235.2014.997264>

⁴⁰ Council of the EU (2022). *Council Recommendation on a European approach to micro-credentials for lifelong learning and employability*. <https://bit.ly/3SaYFrj>

- ✓ as part of an educational programme (individual disciplines and their blocks, modular learning, certificate programmes, alternative qualifications). The development of micro-credentials should be based on a modular approach, i.e. the creation of a modular structure for short-term learning programme. Instead of trying to learn a large amount of information at once, it can be broken down into smaller parts that are easier to learn.
- ✓ as targeted training (labour market demand, aligning with occupational standards, students' desires);
- ✓ as a part of LLL, i.e. lifelong learning (e.g. professional development of teachers);
- ✓ as additional income for HEIs (Paska, 2023⁴¹).

Developers of micro-credentials for higher education should use the results of the European Massive Open Online Course Consortium (EMC, 2019 ⁴²), which has developed a set of characteristics of micro-credentials. These characteristics focus on both the proper organisation of the learning process and its quality.

Features of micro-credentials (EMC, 2019)

- ✓ The general study load is 4-6 ECTS credits.
- ✓ The learning outcomes relate to levels 6-8 of the European Qualifications Framework (EQF) with the possibility of extension to levels 4 and 5.
- ✓ Assessment is carried out in accordance with accepted quality assurance standards (European Standards and Guidelines for Quality Assurance ESG-2015).
- ✓ Reliable identification of the person in the assessment process must be ensured.
- ✓ Be directly related to the labour market demands.
- ✓ The final certificate of micro-credentials should include information on the course content, learning outcomes, their level in relation to the EQF, and the amount of ECTS credits.

Taking into consideration the theoretical and practical aspects of micro-credentials design, it is possible to summarise the steps in the development of short-term flexible learning, which should result in the issuance of documents (record) on the obtaining of micro-credentials. These steps are summarised in Fig. 4.

⁴¹ Paska, M. *Micro-credentials and their application in higher education. Modern trends in the development of the hospitality industry: a collection of abstracts of the IV International scientific and practical conference* (pp. 363-365). Lviv: Lviv State University of Physical Education and Sports named after Ivan Boberskyi. <https://repository.ldufk.edu.ua/bitstream/34606048/34814/1/Paska%20M..pdf>.

⁴² EMC (2019). *EMC Common Microcredential Framework*. https://emc.eadtu.eu/images/EMC_Common_Microcredential_Framework_.pdf



Figure 4. Steps for developing micro-credentials by their providers
Authors' development.

The most important thing in the design of micro-credentials is **the formulation of learning outcomes**, as they determine the content of learning, its professional orientation, etc.

It is important to understand that learning outcomes:

- ✓ are focused on the expected achievements of a person;
- ✓ are focused on what the learner (student) should demonstrate (know, understand, be able to do) after completing the study, and (which is important for a deeper understanding of the relationship between learning outcomes and the competences they form);
- ✓ serve as indicators of the level of learning of the relevant competences.

Competency as defined by the Council of the European Union (Council of the EU, 2017⁴³), is a verified ability to use knowledge, skills and personal, social and/or methodological abilities in work or study, as well as in professional and personal development. In fact, the competence-based approach is framed in a learning model that can be simplistically described in four words: know, be able to, do, be.

The European Classification of Skills, Competences, Qualifications and Occupations (ESCO) makes a clear distinction between: (1) universal competences, which depends on the subject area and are essential for the successful professional and social activity of a person; (2) professional competences, i.e. competences relevant to a specific subject area, which are essential for successful professional activity (European Commission, 2023⁴⁴).

From the point of view of Ukrainian developers of occupational standards, the division of competences into universal and professional ones is conditional: the competences that form a

⁴³ Council of the EU (2017). *Recommendation on the European Qualifications Framework for lifelong learning and repealing the recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning*. [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017H0615\(01\)](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017H0615(01))

⁴⁴ European Commission (2023). *ESCO*. <https://ec.europa.eu/esco>

professional qualification can be considered professional in substance, and in the absence of any of them, successful performance of professional activities is impossible (NQA, 2023⁴⁵).

As a rule, competences are socially constructed, e.g. by professional associations, employers, government agencies, etc. and therefore have a normative character (Semigina and Pozhidaeva, 2020⁴⁶; Semigina and Rashkevych, 2021⁴⁷). For example, the European Commission has formulated lists of digital and environmental ("green") competences, which it considers universal and necessary for professional and social activities of a person (Semigina and Markevych, 2022⁴⁸; Semigina and Fediuk, 2022⁴⁹). The development of these competences is the basis of the European approach to micro-credentials.

Therefore, when formulating learning outcomes, one should take into account the development of those specific competences that are practical and applicable in certain situations, as well as labour market requirements, European trends, etc.

The following rules can be used *to formulate learning outcomes* in short-term learning programmes:

- ✓ use only one verb to describe one learning outcome;
- ✓ avoid complex sentences (if necessary, it is better to use more than one sentence for clarity);
- ✓ it is recommended to make sure that the learning outcomes for a micro-credential are consistent with its objectives and title;
- ✓ learning outcomes should be visible, measurable, and assessable;
- ✓ when formulating the learning outcomes, it should be kept in mind the time constraints within which these outcomes should be achieved; whether it is realistic to achieve these learning outcomes within the available time and resource constraints;
- ✓ consider how the learning outcomes will be assessed and how it will be ensured that the learner has achieved them. If the learning outcomes are too broad, it may be difficult to assess them. Conversely, if they are too detailed, the list of learning outcomes may be too long;
- ✓ It is a good practice to get feedback from colleagues and trainees on whether the written learning outcomes are clear to them;

⁴⁵ NQF (2023). *Methodological guidelines for the development of occupational standards*. <https://nqa.gov.ua/news/metodicni-rekomendacii-sodo-rozroblenna-profesijnih-standartiv/>.

⁴⁶ Semigina, T., Pozhidaeva, O. (2020). Formation of competences of social workers: international and local practice In the book: *Representation of educational achievements, mass media and the role of philology in the modern system of sciences*. Vinnytsia: European Scientific Platform. <https://doi.org/10.36074/rodmmrfssn.ed-1.05>.

⁴⁷ Semigina, T., Rashkevych, Y. (2021). Basic concepts of the qualifications system in the context of the transformation of the educational paradigm. *Representation of educational achievements, mass media and the role of philology in the modern system of sciences*. Vinnytsia: European Scientific Platform. <https://doi.org/10.36074/rodmmrfssn.ed-2.03>.

⁴⁸ Semigina, T., Markevych, N. (2022). "Green competences and green skills: a review of international experience. *Grail of science*, 16: 400-406. <https://bit.ly/3mV60Lm>.

⁴⁹ Semigina, T., Fediuk, V. (2022). Digital competence as a tool for regulating the labour market. *Economy and Society*, 40. <https://economyandsociety.in.ua/index.php/journal/article/view/1476>.

- ✓ In the formulation of learning outcomes in micro-credentials that belong to the levels of the NQF (from level 5 and onwards), it is necessary to avoid overloading the list of learning outcomes with those that use verbs from the lower levels of Bloom's Taxonomy and use verbs from the higher levels - Application, Analysis, Synthesis and Evaluation (Rashkevych, 2014⁵⁰Kovtunets & Semygina, 2021⁵¹).

More information on current approaches to formulating learning outcomes can be found in the documents of the European Centre for the Development of Vocational Education and Training (CEDEFOP, 2024⁵²).

6.2. Arrangement of learning processes and assessment of learning outcomes

While planning and organising short-term learning programmes aimed at acquiring micro-credentials, it is essential to select the appropriate form of learning. This can include:

- ✓ **Classroom/on-site learning:** A traditional form of learning that involves the direct presence of the teacher and students in the classroom. This format allows for live interaction and instant feedback, which can be useful for many types of practical tasks and discussions.
- ✓ **Distance/online learning:** Learning that is delivered using Internet technologies. This can include massive online courses (MOOCs) and other forms of distance learning. Distance learning provides flexibility in choosing the time and place of studying, which is especially important for adults who may combine study with work or other responsibilities.
- ✓ **Blended learning:** A combination of classroom and distance learning that allows you to take advantage of the benefits of both formats. For example, theoretical knowledge can be delivered online, while practical skills can be practiced in face-to-face meetings.

Blended learning is particularly effective for delivering micro-credentials as it allows education providers to create interactive, effective learning programmes that combine different learning formats. Participants in such programmes can acquire micro-credentials that enhance their professional competitiveness and career development.

⁵⁰ Rashkevych, Y. M. (2014) *The Bologna Process and the New Paradigm of Higher Education*. Lviv: Lviv Polytechnic Publishing House. [https://onu.edu.ua/pub/bank/userfiles/files/nauk%20method%20rada/BolonskyiProcessNewParadigm\(%D0%AE_%D0%A0%D0%B0%D1%88%D0%BA%D0%B5%D0%B2%D0%B8%D1%87\).pdf](https://onu.edu.ua/pub/bank/userfiles/files/nauk%20method%20rada/BolonskyiProcessNewParadigm(%D0%AE_%D0%A0%D0%B0%D1%88%D0%BA%D0%B5%D0%B2%D0%B8%D1%87).pdf)

⁵¹ Kovtunets, V. & Semigina, T., eds. (2021). *Handbook for assessors of learning outcomes for the awarding of professional qualifications* (pp. 9-11). Kyiv: Vistka LLC. <https://nqa.gov.ua/news/posibnik-dla-ocinuvaciv-rezultativ-navcanna-dla-prisvoenna-profesijnih-kvalifikacij/>.

⁵² CEDEFOP (2024). *Learning outcomes going global: a multifaceted phenomenon*. Luxembourg: Publications Office. <http://data.europa.eu/doi/10.2801/447716>

Using micro-credentials for professional development and upskilling of pedagogical and academic staff, it is advisable to rely on the provisions of Article 59 of the Law of Ukraine 'On Education' (Verkhovna Rada of Ukraine, 2017⁵³), which stipulate that: 'Professional development may be carried out in various types (studying under an educational programme, internships, participation in certification programmes, trainings, seminars, workshops, seminars-meetings, training seminars, webinars, master classes, etc.) and in various forms (institutional, dual, work-based (at the production site), etc.

The design and delivery of micro-credentials focused on short and flexible adult learning should be **based on the principles of andragogy**. It is a branch of educational science that deals with the education, training and adults coaching. Here are the main principles of andragogy that are worth considering:

1. The principle of independent learning: The independent activity of learners is the main type of learning activity of adults. This learning process requires proper guidance and supportive environment, well-designed educational programmes, learning materials and software.

2. The principle of collaborative activity: Adult learning takes place through joint activities with the teacher and other learners. It is the most effective in groups or communities where participants can share experiences, ideas and understandings. It is also known as 'collaborative pedagogy' or 'collaborative learning'.

3. Based on previous experience: The professional, social, daily and other life experiences of the learner serve as a source of learning for both the learner and his/her colleagues.

4. Individualisation of training: The arrangement of the learning process and the setting up objectives are based on the needs of the learners. Each adult can have an individual learning programme that takes into account their specific learning needs, goals, experience, level of training and personal characteristics.

5. Contextuality of learning: The learning process has specific, vital goals for the learner. It is oriented towards fulfilling social roles or personal development. It is based on the learner's professional and social activities.

6. Educational Needs Development: Evaluation of learning outcomes involves assessing the actual mastery of educational materials and achieving expected results. The learning process aims to cultivate new educational needs among participants, which are refined after reaching specific levels of learning and self-study skills.

7. Updating learning outcomes: Learning is focused on the immediate application in practice of the acquired knowledge, skills, abilities and qualities. It has a problem-based nature. It is advisable to provide adult learners with knowledge that can be directly applied in their daily

⁵³ Verkhovna Rada of Ukraine (2017). *On education: Law No. 2145-VIII (as amended)*. <https://zakon.rada.gov.ua/laws/show/2145-19#Text>.

activities, with consistency: 'field experience - theoretical knowledge - application of new knowledge in practice' (Karkach & Semigina, 2022⁵⁴; Formosa, 2012⁵⁵; Knowles, 1973⁵⁶).

For instance, massive open online courses benefit from incorporating collaborative elements such as discussion forums, group projects, and interactions between learners and instructors. This approach fosters the exchange of experiences and collaboration among participants. Additionally, courses that consider the students' prior professional and life experiences can use them as valuable learning resources. Assignments and projects are more effective when they relate to real-life situations familiar to the students.

Learning methods may involve both synchronous and asynchronous communication between course participants.

Assessment of learning outcomes is a key step in the process of acquiring micro-credentials. It provides an objective assessment of the acquired competences and confirms that the learning outcomes are relevant to the labour market.

For the effective assessment of learning outcomes in micro-credentials, it is important to adhere to the following **principles**:

- ✓ **Valid assessment:** Assessment should be reliable and accurate, reflecting the actual knowledge and skills of the learners. The assessment methods used must be adequate to test the competencies stated in the educational programme.
- ✓ **Fairness:** Assessment should be based on transparent and comprehensible criteria to mitigate personal bias and individual interpretation. All participants should have an equal opportunity to showcase their knowledge and skills.
- ✓ **Transparency:** Assessment processes and criteria should be transparent and understandable to all participants. Learners should know in advance what will be assessed and how it will be assessed, as well as have access to the results of the assessment.
- ✓ **Continuous feedback:** Learners should receive regular feedback on their achievements and progress. Feedback should be constructive and aimed at further developing competences.

⁵⁴ Karkach, A. & Semigina, T. (2022). Using the Moodle platform for teaching digital technologies to students of third-age universities. *Social Work and Education*, 9 (4), 451-464.

⁵⁵ Formosa, M. (2012). Education and older adults at the University of the Third Age. *Educational Gerontology*, 38(1), 1-13.

⁵⁶ Knowles, M. (1973). *The adult learner: A neglected species*. Gulf publishing company.

The European Recommendations on the Recognition of Non-formal and Informal Learning developed by the European Centre for the Development of Vocational Education and Training (CEDEFOP, 2023⁵⁷) provides a list **of tools/methods that can be used to assess learning outcomes** for the purpose of further awarding of qualifications, and therefore these methods can be used in the field of micro-credentials:

- ✓ tests and written exams;
- ✓ conversational methods (interviews and discussion);
- ✓ declarative methods (self-assessment on a form, which is then checked);
- ✓ monitoring (during daily tasks);
- ✓ simulation (people are placed in a situation close to real-life scenarios to assess their competences);
- ✓ evidence of the use of learning outcomes in work or other situations (written recommendations, feedback, etc.), i.e. a portfolio.

Massive open online courses (MOOCs) often employ various types of assessments, including closed- and open-question tests, as well as group project-based practical work. These assessment methods enhance the diversity and fairness of the evaluation process while fostering the development of learners' skills and competencies. They can be integrated with self-assessment, peer assessment, and feedback mechanisms to maximize the effectiveness and value of the learning experience in MOOCs. For instance, engaging students in the assessment process through self-assessment and peer assessment encourages critical thinking and reflection on their own achievements and the work of their peers.

A holistic approach to planning and organising micro-credentials, considering all these aspects, is crucial for successful implementation and contributes significantly to adult professional development.

6.3. Certification of learning outcomes, their recognition and portability

Participants should receive a physical or digital certificate based on the outcomes of their short-term flexible learning and the assessment of their achievements.

Micro-credentials are issued in the form of certificates, badges or electronic records that contain information about the acquired skills, learning achievements and the issuing organisation. They may be specific to a particular professional field, discipline or educational programme.

⁵⁷ CEDEFOP (2023). *European guidelines for validating non-formal and informal learning*. Luxembourg: Publications Office. Cedefop reference series; No 124. <http://data.europa.eu/doi/10.2801/389827>

In the European Union, in order to arrange information on micro-credentials, **mandatory and optional elements of micro-credentials description** are defined, which, in particular, should be reflected in certificates (Table 2).

Table 2: European requirements for the description of micro-credentials (EU Council, 2022⁵⁸)

<i>Mandatory elements to describe micro-credentials</i>	<i>Optional elements to describe micro-credentials</i>
<ol style="list-style-type: none"> 1. Identification of the learner 2. Title of the micro-credential 3. Country(ies)/Region(s) of the issuer 4. Awarding body(ies) 5. Date of issuing 6. Learning outcomes 7. Notional workload needed to achieve the learning outcomes (in ECTS credits, where possible) 8. Level (and cycle, if applicable) of the learning experience leading to the micro-credential (EQF, QF-EHEA), if applicable 9. Type of assessment 10. Form of participation in the learning activity 11. Type of quality assurance used to underpin the micro-credentials 	<ol style="list-style-type: none"> 12. Prerequisites needed to enrol in the learning activity 13. Supervision and identity verification during assessment (unsupervised with no identity verification, supervised with no identity verification, supervised online, or onsite with identity verification) 14. Grade achieved 15. Integration/stackability options (stand-alone, independent micro-credential/integrated, stackable towards another credential) 16. Further information

The characteristics of micro-credentials presented in Table 2 indicate that not every short-term learning certificate (diploma) aligns with the definition of a micro-credential as outlined in the Council of the European Union's Recommendation.

Recognition of micro-credentials (certificates from short-term, non-degree learning programmes) is crucial to ensure their value and applicability in both the labour market and educational systems, regardless of the provider issuing them.

In Ukraine, the recognition of micro-credentials acquired by learners is governed by the relevant procedures for recognizing learning outcomes obtained through non-formal and/or informal education in higher and pre-higher professional education (Ministry of Education and Science of Ukraine, 2022⁵⁹).

⁵⁸ Council of the EU (2022). *Council Recommendation on a European approach to micro-credentials for lifelong learning and employability*. <https://bit.ly/3SaYFrI>

⁵⁹ Ministry of Education and Science of Ukraine (2022). *On Approval of the Procedure for Recognition in Higher and Professional Higher Education of Learning Outcomes Obtained through Non-formal and/or Informal Education*: Order No. 130. <https://bit.ly/4bxg04B>

If necessary, micro-credentials programmes can be licensed by the Ministry of Education and Science of Ukraine as professional development programmes (postgraduate education).

The following mechanisms can be used to effectively recognise micro-credentials issued by different providers:

- ✓ *Standardisation and alignment of requirements:* Develop general standards for the content, structure and assessment of micro-credentials. This may include harmonisation with international standards such as the European Qualifications Framework (EQF). Unification of standards and requirements for micro-credentials, in particular through the adaptation of European recommendations to the national context, will facilitate their recognition in different sectors of Ukraine and in other countries.
- ✓ *Transparency and clarity of information:* Ensuring the availability of detailed information on micro-credentials, including learning outcomes, workload, assessment methods and qualification level. This can be realised through the establishment of institutional, national or international registers of micro-credentials. The use of digital certificates and badges that can be easily verified and integrated into occupational profiles will facilitate the recognition and accumulation of micro-credentials
- ✓ *Recognition at the employer level:* Cooperation with professional associations and employers to recognise micro-credentials as evidence of relevant skills and competences
- ✓ *Feedback and evaluation:* Continuous evaluation and improvement of recognition processes based on feedback from all stakeholders (Rashkevych & Semigina, 2024; ETF, 2023⁶⁰).

When utilizing micro-credentials for the professional development and upskilling of academic staff, it is advisable to follow the provisions outlined in Article 59 of the Law of Ukraine 'On Education' (Verkhovna Rada of Ukraine, 2017⁶¹), which states:

'Pedagogical and scientific-pedagogical workers have the right to improve their qualifications in educational institutions that have a license for upskilling or carry out educational activities under an accredited educational program. The results of upskilling process in such educational institutions do not require separate recognition and confirmation.

Pedagogical and scientific-pedagogical workers have the right to improve their qualification in other subjects of educational activity, individuals and legal entities. The results of the upskilling process of a pedagogical (scientific and pedagogical) employee with such entities are recognized by a separate decision of the pedagogical (academic) council'.

⁶⁰ ETF (2023). Guide to design, issue and recognise micro-credentials. <https://bit.ly/46ZfHgW>

⁶¹ Verkhovna Rada of Ukraine (2017). On education: Law No. 2145-VIII (as amended). <https://zakon.rada.gov.ua/laws/show/2145-19#Text>.

The accumulation of micro-credentials in a higher education institution or other educational entity may be regulated by the internal regulations of the institution itself. This includes the following:

- *Development of internal policies and procedures:* Each institution should develop clear policies and procedures for the recognition of micro-credentials. These may be separate internal regulations or incorporated into existing institutional provisions.
- *Setting criteria and standards:* The internal provisions should define the criteria and standards by which micro-credentials will be recognised. This may include an analysis of the content, level of difficulty, duration and learning outcomes of the micro-credentials.
- *Orders on teacher professional development:* The Head of the institution may issue orders regulating the professional development of teachers through the acquiring of micro-credentials. This may include requirements for the number of hours or credits (ECTS) required for the recognition of the upskilling.
- *Electronic portfolios of teachers:* Orders may provide for the implementation of e-portfolios for teachers, where documents on micro-credentials will be stored, ensuring transparency and accessibility of information on professional development.
- *Using the tools of the European Higher Education Area (EHEA):* Institutions can use the European Credit Transfer and Accumulation System (ECTS) for the assessment and accumulation of micro-credentials, allowing them to be integrated into the overall educational programme.
- *Enrollment learning hours:* The micro-credentials can be counted as part of the total number of learning hours required to complete a programme or professional development.

Portability of micro-credentials is a key aspect of their recognition and accumulation. Ensuring portability allows holders of micro-credentials to easily transfer and use them in different contexts and organisations, while maintaining their authenticity and value. This is particularly important for professional development, as micro-credential holders can effectively demonstrate their skills and knowledge in any professional environment without restrictions of geographical or institutional affiliation.

Portability can be achieved using of secure digital storage systems for micro-credentials, such as Europass, or through the implementation of standards that allow micro-credentials to be integrated into a common qualifications system, such as the European Credit Transfer and Accumulation System (ECTS). Such measures not only ensure portability but also promote openness and transparency in the education and training system.

7. QUALITY ASSURANCE OF MICRO-CREDENTIALS

The implementation of micro-credentials in the digital ecosystem of a micro-credential provider may require new tools and management approaches. Here are some of the key aspects to be considered to ensure the proper quality of micro-credentials (Semigina & Rashkevych, 2023⁶²):

1. Educational programme management: micro-credential providers need to develop an effective programme management system. This means creating and monitoring short-term courses and certificates, regularly updating the content of educational components and teaching approaches, collecting feedback from those who have acquired micro-credentials and from employers to help improve their quality, and making changes based on the information received.

2. Digital infrastructures: The management of micro-credentials requires the development of digital systems to record, store and transfer information on the achievements of students, learners and issuing of micro-credentials. These include Learning Management Systems (LMS) and e-portfolios.

3. Assessment and validation: Micro-credential providers should develop procedures for the assessment and validation of micro-credentials. This includes defining the criteria for acquiring micro-credentials and procedures for validating the achievements of learners. This requires a careful definition of the expected outcomes of short-term learning and the existence of certain quality standards for assessment. Ensuring integrity and avoiding plagiarism or other forms of academic fraud is important to maintain the quality of micro-credentials.

4. Involvement of academic staff: Providers should involve their faculty members in the development of micro-credentials and the delivery of short courses. This may include training faculty in new pedagogical methods and approaches, and fostering collaboration between faculty and stakeholders from the labour market and micro-credential recipients.

5. Support for learners: The management of micro-credentials also includes the establishment of a support system for learners and all those who choose short courses and certificates. This may include counselling and support in choosing courses and learning pathways.

6. Monitoring and reporting systems: HEI providers should develop monitoring and reporting systems to track the success of micro-credentials programmes and their impact on graduates and those who have completed only short-term studies.

⁶² Semigina, T. & Rashkevich, Y. (2023). Micro-credentials as an educational trend and a challenge for higher education. *Universities and Leadership*, 16, 77-89. <https://doi.org/10.31874/2520-6702-2023-16-77-89>

Internal quality assurance covers all of the following elements:

- ✓ the overall quality of the micro-credentials itself;
- ✓ the quality of the learning programme leading to the micro-credentials (if applicable);
- ✓ feedback from learners on the learning experience leading to the micro-credentials;
- ✓ feedback from peers, including other providers and stakeholders, on the learning experience leading to the micro-credentials.

The following **mechanisms** can be used to ensure the **internal quality of micro-credentials** in the systems that generate them:

1. Internal quality control procedures: Developing and implementing internal procedures to assess and monitor the quality of micro-credentials throughout their lifecycle. This may include internal audits, regular evaluations and updates of content and methodology. This process may also include the collection and analysis of data on learner performance, satisfaction with the programme, and the extent to which the knowledge and skills acquired are used in practice.

2. Standardisation of processes: Establishing standardised processes for the development, delivery and assessment of micro-credentials to ensure consistency and quality of outcomes.

3. Staff training and support: Ensure adequate training and support for staff responsible for the development and delivery of micro-credentials so that they can effectively implement internal quality control procedures.

In terms of **external quality assurance of micro-credentials**, mechanisms for such control may include:

1. Expert evaluation: Involvement of external experts or commissions to assess the quality of micro-credentials. These experts may have extensive experience in the relevant field and be independent of the organisations developing or delivering the micro-credentials.

2. Stakeholder engagement: Introduce mechanisms to engage various stakeholders, such as employers, civil society, professional associations, etc. to assess the quality of micro-credentials and their relevance to labour market and societal needs.

3. Public reporting: Ensuring transparency and openness in external quality control processes by publishing evaluation results, reports and other important documents.

4. International benchmarking: Comparison of the quality of micro-credentials with international standards and best practices in the relevant field. This approach allows to identify the strengths and weaknesses of the micro-credential system and develop it in compliance with international standards.

In some countries, especially in regulated professions, accrediting micro-credential providers is occurring: external verification by authorized entities ensures the quality and reliability of their programmes.

Criteria for assessing the quality assurance of micro-credentials may include the following aspects:

- ✓ **Clarity and specificity:** Micro-credentials should be clear and understandable for the target audience. They should contain adequate information on expected learning outcomes, scope of material, level of difficulty and other key indicators.
- ✓ **Adaptability to the needs of the target group:** Micro-credentials should be designed to meet the specific target group requirements and expectations. They should meet the labour market requirements or personal goals of the learners.
- ✓ **Assessment of learning outcomes:** Mechanisms used to determine learner achievements must be impartial and reliable.
- ✓ **Compliance with quality standards:** Micro-credentials should meet established quality standards and criteria that are adopted in national and international documents.
- ✓ **Ensuring accessibility:** Quality assurance mechanisms for micro-credentials should ensure that they are accessible to a wide range of learners. This may include the development of adaptive curricula, use of different learning formats and resources, including compliance with web accessibility principles.
- ✓ **Ensuring fairness and impartiality:** Quality assurance processes for micro-credentials should be unbiased and free from conflicts of interest. This may involve engaging independent experts for quality assessment and adhering to ethical principles that govern quality assurance procedures.
- ✓ **Monitoring and evaluation of results:** Establishing a system for monitoring and evaluating learning outcomes to determine how well micro-credentials are meeting their objectives and expectations.

These criteria can be used to assess and ensure the quality of micro-credentials in education and professional development systems.

8. MICRO-CREDENTIALS IN THE NATIONAL QUALIFICATIONS SYSTEM

Micro-credentials are implemented as an integral part of the National Qualifications System to provide formal recognition of specific skills, abilities, and competencies that can be acquired through short-term learning.

At the current stage in Ukraine, the National Qualifications System covers only full and partial qualifications, which can be academic and professional (Verkhovna Rada of Ukraine, 2017⁶³; Verkhovna Rada of Ukraine, 1971⁶⁴).

The learning outcomes and competencies required for the awarding of academic and/or professional and partial professional qualifications can be achieved through formal, non-formal or informal education.

Educational qualifications are awarded, recognised and validated by educational institutions or other educational institutions. Professional and partial professional qualifications are awarded/validated and recognised by entities authorised by law, in particular, educational entities, qualification centers and other structures.

According to Ukrainian legislation, full and partial professional qualifications are based on a set of job functions defined by an occupational standard.

At the same time, the labour market often requires workers with a specific set of professional competencies that do not formally correspond to any occupational standard. In this case, micro-credentials, available in the national qualifications system and de facto recognised by the employer, can solve the problem.

The incorporation of micro-credentials into the National Qualifications System should consider a number of important issues.

1. Unlike full or partial professional qualifications, which adhere to relevant occupational standards and typically encompass multiple job functions or at least one, micro-credentials are designed based on specific sets of professional competencies demanded by the labour market. Consequently, the recognition of learning outcomes in the workplace may emphasize enhancing or acquiring competencies essential for specific job tasks rather than encompassing the entire spectrum of job functions (Martinez-Marroquin & Male, 2021⁶⁵). Alternatively, these micro-credentials can cater to individual personal needs. Their flexibility stems from not being rigidly tied to educational or occupational standards.

⁶³ Verkhovna Rada of Ukraine (2017). *On education: Law of Ukraine No. 2145-VIII (as amended)*. <https://zakon.rada.gov.ua/laws/show/2145-19#Text>.

⁶⁴ Verkhovna Rada of Ukraine (1971). *The Code of Laws of Ukraine on Labor: Law of Ukraine No. 322-08 (as amended)*. <https://zakon.rada.gov.ua/laws/show/322-08#Text>.

⁶⁵ Martinez-Marroquin, E., & Male, S. (2021). *Micro-credentials for recognition of workplace learning*. *Journal of Teaching and Learning for Graduate Employability*, 12(1), 52-57.

2. In most cases, formal permits (licences, accreditations) are not required for the development and implementation of micro-credentials, and their real value is determined by labour market demand and recognition by educational institutions as a set of learning outcomes acquired through non-formal and/or informal education.

3. The incorporation of micro-credentials into the National Qualifications System requires the development of mechanisms for recognizing, comparing, and ensuring their transfer across various learning contexts and job roles. This facilitates their mobility, enabling learners to apply their accomplishments and receive recognition for their efforts.

Micro-credentials can be integrated into the National Qualifications Framework, allowing for their recognition and comparison at the national and international levels.

Research conducted in European countries where the National Qualifications Framework is open to micro-credentials has revealed heterogeneity in approaches (MICROBOL Project, 2021⁶⁶). In some cases, micro-credentials can be referred to any level of the NQF, in other cases they belong to specific levels, i.e. from 1 to 5, or from 2 to 7, or from 2 to 8, or from 5 to 8 levels (i.e. only for higher education). In some countries, micro-credentials are allocated to the qualifications level they are considered to be a part of. In some qualifications systems, micro-credentials may be placed at lower levels than certificates, diplomas or degrees, reflecting the shorter duration and scope of learning.

This illustrates that integrating micro-credentials into the National Qualifications Framework necessitates careful consideration and alignment with existing qualification structures and levels to ensure their effectiveness and relevance to labour market demands.

To introduce micro-credentials as part of the National Qualifications System in Ukraine, amendments to the legal acts governing relations in the field of qualifications should be adopted. These changes may impact various entities involved in the micro-credentialing process:

1. *Public authorities and local governments:* Comprehensive mechanisms for recognizing and legitimizing micro-credentials in the labour market should be developed. This may involve establishing legal frameworks for acknowledging micro-credentials in employment and career advancement.

2. *Educational institutions, enterprises and organisations, and other providers of micro-credentials:* Develop internal procedures for the development, implementation, assessment and award of micro-credentials. This includes setting standards and criteria for the provision of micro-credentials and procedures for their assessment.

3. *State Employment Service:* General mechanisms should be developed for the mainstreaming, development, implementation and enforcement, assessment and awarding, recognition and legalisation of micro-credentials in the labour market. This may include the

⁶⁶ MICROBOL Project (2021). *Micro-credentials and Bologna Key Commitments State of play in the European Higher Education Area*. <https://bit.ly/3feSz91>

development of programmes to support micro-credential holders in finding jobs and solving employment problems.

4. *Social partners*: Common mechanisms should be established for analysing labour market requirements and formulating proposals for the development of micro-credentials. This may include participation in the process of developing learning programmes and support for micro-credentials.

5. *Applicants for micro-credentials*: Clear and understandable mechanisms for acquiring and documenting micro-credentials, as well as their subsequent application in education and/or the labour market, should be provided. This may include the establishment of centralised platforms or resources where micro-credential holders can access the necessary information, materials and tools for learning and assessment.

All of these measures require careful legal analysis and consultation with various stakeholders to ensure that the new regulations are in line with international standards and the national qualifications system requirements. Such a process will require cooperation between government agencies, educational institutions, employers' representatives and other stakeholders to ensure the effective implementation and functioning of the micro-credentials system.

For the successful implementation of micro-credentials in the NQF, **National Qualifications Agency**, as a driver of the NQF development in Ukraine, should:

- ✓ monitor the effectiveness of the implementation and practical realisation of the Recommendations on the introduction of micro-credentials in Ukraine;
 - ✓ conduct thematic professional discussions on the specifics of the application of micro-credentials with the involvement of a wide range of stakeholders;
 - ✓ conduct an analysis of regulatory legal acts in the field of qualifications to revise, enhance, and/or resolve legal conflicts;
 - ✓ update the regulatory framework in the field of qualifications (amendments to regulatory acts in the part related to micro-credentials);
 - ✓ disseminate information on the role and importance of micro-credentials in the National Qualifications System;
 - ✓ conduct webinars on the specifics of introducing micro-credentials at the level of both formal and non-formal education;
 - ✓ conduct webinars for stakeholders on the procedural aspects of formulating requirements for micro-credentials, their definition and description structure;
 - ✓ prepare both popular and scholarly publications on micro-credentials within the National Qualifications System, ensuring compliance with relevant EU standards and guidelines;
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- ✓ publish and disseminate the results of the analysis on the implementation status of micro-credentials within the National Qualifications System;
 - ✓ support communication with stakeholders and the public on the development of micro-credentials and establishing cooperation with key stakeholders of the National Qualifications System;
 - ✓ collaborate with international, European, and national bodies (agencies, committees, commissions) in the field of qualifications to exchange information and share experiences on the application of micro-credentials.
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REFERENCES

- Bianchi, G., Pisiotis, U. & Cabrera Giraldez, M. (2022). GreenComp European Competence Framework for Sustainable Development. Luxembourg: Publications Office of the European Union. <https://publications.jrc.ec.europa.eu/repository/handle/JRC128040>.
- Biggs, D. (1996). Improving teaching through constructive consultation. *Higher Education*, 32(3), 347-364. <https://doi.org/10.1007/BF00138871>
- Cabinet of Ministers of Ukraine (2021). On approval of the Procedure for awarding and confirming professional qualifications by qualification centers: Resolution No. 956. <https://zakon.rada.gov.ua/laws/show/956-2021-%D0%BF#Text>
- CEDEFOP (2023). European guidelines for the validation of non-formal and informal learning. Luxembourg: Publishing Office. Cedefop Reference Series; No. 124. <http://data.europa.eu/doi/10.2801/389827>
- CEDEFOP (2023b). *Microcredentials for labour market education and training: microcredentials and evolving qualifications systems*. Luxembourg: Publications Office. <https://doi.org/10.1787/9789264313835-en>
- CEDEFOP (2024). *Learning outcomes going global: a multifaceted phenomenon*. Luxembourg: Publications Office. <http://data.europa.eu/doi/10.2801/447716>
- CEDEFOP (2024). *Microcredentials striving to combine credibility and agility*. https://www.cedefop.europa.eu/files/9192_en.pdf
- CEDEFOP (2024). *Terminology of European education and training policy: a selection of 430 terms: 3d ed.*. Luxembourg: Publications Office. Cedefop reference series. <https://data.europa.eu/doi/10.2801/991753>
- Council of the EU (2021). Council Resolution on a New European Agenda for Adult Learning. <https://data.consilium.europa.eu/doc/document/ST-14485-2021-INIT/en/pdf>
- Council of the EU (2022). *Council Recommendation on a European approach to micro-credentials for lifelong learning and employability*. <https://bit.ly/3SaYFrJ>
- Council of the EU (2022). *Council Recommendation on individual learning accounts*. <https://data.consilium.europa.eu/doc/document/ST-8944-2022-INIT/en/pdf>
-

- Council of the EU (2017). *Recommendation on the European Qualifications Framework for lifelong learning and repealing the recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning*. [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017H0615\(01\)](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017H0615(01))
- Council of the EU (2021). *Council Resolution on a strategic framework for European cooperation in education and training towards the European Education Area and beyond (2021–2030)*. Official Journal, C66, 1–21. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021G0226%2801%29&q id=1617706323424>
- EMC (2019). *EMC Common Microcredential Framework*. https://emc.eadtu.eu/images/EMC_Common_Microcredential_Framework_.pdf
- EMAU (2024). “EMAU - Academy” invites to study. <http://emau.kiev.ua/spisok-kursiv/>
- European Commission (2017). *European Pillars of Social Rights in 20 principles*. <https://ec.europa.eu/social/main.jsp?catId=1606&langId=en>
- European Commission (2020). *European skills agenda for sustainable competitiveness, social fairness and resilience*. <https://bit.ly/3ukN0tZ>
- European Commission (2022). *DigComp 2.2: The Digital Competence Framework for Citizens – With new examples of knowledge, skills and attitudes*. <https://bit.ly/3nbvpr2>
- European Commission (2023). *Employment and Social Developments in Europe 2023*. <https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8553>
- European Commission (2023). *ESCO*. <https://ec.europa.eu/esco>
- Evopro (2024). Events for doctors, students and interns. <https://evopro.pro>
- Formosa, M. (2012). Education and older adults at the University of the Third Age. *Educational Gerontology*, 38(1), 1-13.
- Fransson, O., & Friberg, T. (2015). Constructive alignment: from professional teaching technique to governance of profession. *European Journal of Higher Education*, 5(2), 141–156. <https://doi.org/10.1080/21568235.2014.997264>
- Karkach, A. & Semigina, T. (2022). Using the Moodle platform for teaching digital technologies to students of third-age universities. *Social Work and Education*, 9 (4), 451-464.
- Knowles, M. (1973). *The adult learner: A neglected species*. Gulf publishing company.
-

- Kovtunets, V. & Semigina, T., eds. (2021). Handbook for assessors of learning outcomes for the awarding of professional qualifications (pp. 9-11). Kyiv: Vistka LLC. <https://nqa.gov.ua/news/posibnik-dla-ocinuvaciv-rezultativ-navcanna-dla-prisvoenna-profesijnih-kvalifikacij/>.
- Martinez-Marroquin, E., & Male, S. (2021). Micro-credentials for recognition of workplace learning. *Journal of Teaching and Learning for Graduate Employability*, 12(1), 52-57.
- MICROBOL Project (2021). *Micro-credentials and Bologna Key Commitments State of play in the European Higher Education Area*. <https://bit.ly/3feSz91>
- Ministry of Education and Science of Ukraine (2022). On Approval of the Procedure for Recognition in Higher and Pre-Higher Professional Education of Learning Outcomes Acquired through Non-formal and/or Informal Education: Order No. 130. <https://bit.ly/4bxg04B>
- Ministry of Social Policy of Ukraine (2024). Social Education Platform. <https://socialacademy.gov.ua/>
- Moore, S. & Piety, P. (2022). Online learning ecosystems: Comprehensive planning and support for distance learners. *Distance Education*, 42(2), 179–203.
- NQA (2023). Methodological guidelines for the development of occupational standards. <https://nqa.gov.ua/news/metodicni-rekomendacii-sodo-rozroblenna-profesijnih-standartiv/>.
- NISS (2024). Restoring the labor market in Ukraine in the context of war: regional aspects. <https://niss.gov.ua/en/node/5217>
- OECD (2019). *OECD Skills Strategy 2019: skills to shape a better future*. <https://doi.org/10.1787/9789264313835-en>
- Paska, M. Micro-credentials and their application in higher education. Modern trends in the development of the hospitality industry: collection of abstracts of the IV International scientific and practical conference (pp. 363-365). Lviv : Lviv State University of Physical Education and Sports named after Ivan Boberskyi. <https://repository.ldufk.edu.ua/bitstream/34606048/34814/1/Paska%20M..pdf>.
- Public Health Centre of Ukraine (2024). Online courses. https://portal.phc.org.ua/en/view_all_courses/
-

- Rashkevych, Y. M. (2014). *The Bologna Process and the New Paradigm of Higher Education*. Lviv: Lviv Polytechnic Publishing House.
- Rashkevych, Y., Semigina, T. (2022). Micro-credentials and the development of educational systems. *Pedagogical comparativistics and international education 2022: materials of the VI International scientific and practical conference / Institute of Pedagogy of the National Academy of Pedagogical Sciences of Ukraine* (pp. 229-233). Kyiv-Ternopil: Krok.
- Rashkevych, Y. & Semigina, T. (2024). Analysis of the possibilities of introducing micro-credential in Ukraine and other European countries. *Educational Analytics of Ukraine*, 1(27), 110-122.
- State Employment Service (2024). Vocational training (retraining). <https://dcz.gov.ua/profnavch>
- Semigina, T., Rashkevych, Y. (2021). Basic concepts of the qualifications system in the context of the transformation of the educational paradigm. Representation of educational achievements, mass media and the role of philology in the modern system of sciences. Vinnytsia: European Scientific Platform. <https://doi.org/10.36074/rodmmrfssn.ed-2.03>.
- Semigina, T. & Rashkevych, Y. (2023). Micro-credentials as an educational trend and a challenge for higher education. *Universities and Leadership*, 16, 77-89. <https://doi.org/10.31874/2520-6702-2023-16-77-89>
- Semigina, T. (2024). Micro-credentials as a tool for flexible education and better employment: political aspects. *Scientific orientations: theory and practice of research: a collection of scientific papers with materials of the III International Scientific Conference* (pp. 255-257). Vinnytsia: Ukrlogos.
- Semigina, T., & Fediuk, V. (2022). Digital competence as a tool for regulating the labor market. *Economy and Society*, 40. <https://economyandsociety.in.ua/index.php/journal/article/view/1476>.
- Semigina, T., & Markevych, N. (2022). "Green competencies and green skills: an overview of international experience. *Grail of science*, 16: 400-406. <https://bit.ly/3mV60Lm>.
- Semigina, T. & Pozhidaeva, O. (2020). Formation of competencies of social workers: international and local practice In the book: *Representation of educational achievements, mass media and the role of philology in the modern system of sciences*. Vinnytsia: European Scientific Platform. <https://doi.org/10.36074/rodmmrfssn.ed-1.05>.
- Sudakov, M. & Lisogor, L. (2023). Labour market of Ukraine 2022-2023: state, trends and prospects. https://solidarityfund.org.ua/wp-content/uploads/2023/04/ebrd_ukraine-lm-1.pdf.
-

Verkhovna Rada of Ukraine (1971). The Code of Laws of Ukraine on Labor: Law of Ukraine No. 322-08 (as amended). <https://zakon.rada.gov.ua/laws/show/322-08#Text>

Verkhovna Rada of Ukraine (2017). On Education: Law No. 2145-VIII (with subsequent amendments). <https://zakon.rada.gov.ua/laws/show/2145-19#Text>

Verkhovna Rada of Ukraine (2023). On the Bar and Practice of Law: Law of July 5, 2012. No. 5076 (as amended in 2023) *3 Report 2023*. <https://bit.ly/3QbINTk>

INFORMATION ABOUT THE PROJECT

The MOOC-based micro-credentials for teachers CRED4TEACH project addresses to meet the needs of higher education institutions (HEIs) and educational decision-makers in the target countries - Albania, Montenegro, and Ukraine to provide high-quality, inclusive, flexible, and competence-based training for in-service teachers across various educational sectors.

THE OVERARCHING GOAL OF THE PROJECT CRED4TEACH is to enhance teacher professional development in Albania, Montenegro, and Ukraine by introducing and establishing mechanisms for creating and recognising micro-credentials using MOOC-based pedagogies; to position micro-credentials as viable alternatives to formal continuing professional development courses, contributing to the advancement of credit-based learning pathways within the continuous professional development of teachers.

THE SPECIFIC OBJECTIVES OF THE PROJECT INCLUDE:

- Enhancing the skills and competencies of academic and administrative staff at participating institutions in developing, delivering, assessing, recognising, and ensuring the transferability of MOOC-based micro-credentials;
- Developing, testing, and establishing national and institutional frameworks for creating, assessing, issuing, and recognising micro-credentials in Ukraine, Albania, and Montenegro;
- Creating and delivering pilot MOOC-based micro-credentials tailored to in-service teachers across various sectors;
- Promoting the broader adoption of micro-credentials for professional development among teachers and other target groups, thereby advancing the lifelong learning dimension in higher education.

CRED4TEACH PARTNERS

The CRED4TEACH partnership comprises 15 institutions from seven countries: Albania, Estonia, Germany, Montenegro, Portugal, Türkiye, and Ukraine. Learn more about CRED4TEACH at www.cred4teach.eu.

- ✓ FACHHOCHSCHULE DES MITTELSTANDES (FHM) GMBH - UNIVERSITY OF APPLIED SCIENCE - (FHM), (BIELEFELD, Germany) – The Project Coordinator,
 - ✓ UNIVERSIDADE ABERTA (UAB), (LISBON, Portugal),
 - ✓ TALLINN UNIVERSITY (TU), (TALLINN, Estonia),
-

- ✓ ANADOLU UNIVERSITY (AU), (ESKISEHIR, Turkey),
- ✓ UKRAINIAN ENGINEERING PEDAGOGICS ACADEMY (UEPA), (KHARKIV, Ukraine),
- ✓ CHERKASY STATE TECHNOLOGICAL UNIVERSITY (ChSTU), (CHERKASY, Ukraine),
- ✓ BOGDAN KHMELNITSKY MELITOPOL STATE PEDAGOGICAL UNIVERSITY (BK MSPU), (MELITOPOL, Ukraine),
- ✓ DROHOBYCH IVAN FRANKO STATE PEDAGOGICAL UNIVERSITY (DSPU), (DROHOBYCH, Ukraine),
- ✓ NATIONAL QUALIFICATIONS AGENCY (NQA), (KYIV, Ukraine),
- ✓ UNIVERSITETIT TE VLORES (UV), (VLORE, Albania),
- ✓ UNIVERSETI SHKODRES LUIGJ GURAKUQI (UNISHK), (SHKODER, Albania),
- ✓ AGJENCIA E SIGURIMIT TE CILESISE SE ARSIMIT PARAUNIVERSITAR (ASCAP), TIRANA, Albania,
- ✓ UNIVERZITET MEDITERAN PODGORICA PRIVATNA USTANOVA (UNIMED), (PODGORICA, Montenegro),
- ✓ JAVNA USTANOVA UNIVERZITET CRNE GORE PODGORICA (UCG), (PODGORICA, Montenegro),
- ✓ AGENCIJA ZA KONTROLU I OBEZBJEDENJE KVALITETA VISOKOG OBRAZOVANJA (AKOKVO), (PODGORICA, Montenegro).

Duration of the project CRED4TEACH: 1 June 2023 - 31 May 2026
