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# VET-ORIENTED RESKILLING IN THE DOMAIN OF ADVANCED DIGITAL SKILLS LEVERAGING MICRO-CREDENTIALS AND MOOCS

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## 1 TARGET AUDIENCE

The workshop was designed to cater to a diverse audience involved in different aspects of education, training, policymaking, and industry, with a common interest in addressing the challenges and opportunities presented by the evolving landscape of advanced digital skills. At the end of the workshop, participants seeking lifelong learning and training opportunities were equipped with practical knowledge and tools to embark on a Vocational Education and Training (VET)-oriented upskilling/reskilling journey using micro-credentials and Massive Open Online Courses (MOOCs), enabling them to remain competitive and agile in the dynamic job market.

The target audience for this workshop included **policy makers and government representatives**, who were responsible for shaping education and training policies, especially those related to advanced digital skills, i.e. government officials, policymakers, and representatives from relevant governmental bodies. This audience was facilitated to understand the role of micro-credentials in the broader educational and political context in Europe. They acquired rich insights into policy implications and recommendations for fostering the effective implementation of advanced digital skills programs. **Educators and trainers in higher education institutions (HEIs) and vocational education and training (VET) providers** considered also a group involved in designing and delivering educational programs. This audience learned effective strategies for integrating micro-credentials and MOOCs into existing curricula and programs. **Stakeholders in vocational education and training (VET)** (individuals or organizations) involved in the development and delivery of vocational education and training programs was also a target audience for this workshop. This group was interested in understanding and implementing innovative approaches such as micro-credentials and MOOCs, so as to ensure that skills acquired through micro-credentials and MOOCs are recognized and valued by employers and the labor job market. They also gained insights into the labor-market relevance of education and training for advanced digital skills. **Lifelong learners** were also a target group that work proactively to their professional development and typically seek opportunities for upskilling and reskilling in the field of advanced digital skills. This audience managed to learn about opportunities for upskilling and reskilling using micro-credentials and MOOCs, acquiring practical knowledge on a VET-oriented upskilling/reskilling process. **Employers and human resources professionals** who are responsible for hiring and management within organizations, interested in understanding how micro-credentials and MOOCs align with industry needs and how to recognize and value these skills in the job market, were considered as a target audience as well. This group of people learned how to identify employees with relevant advanced digital skills, contributing to talent management and workforce development. Finally, **private sector representatives** who are individuals from private companies and organizations interested in supporting or providing motivation for the development of courses and micro-credentials that address the rapidly changing demands of the digital job market were considered also as audience for this workshop. Through their participation they managed to understand the role of the private sector in supporting the wider availability of courses and programs that address the evolving needs of the digital job market.

## 2 TOPIC INTRODUCTION AND MOTIVATION

In today's rapidly evolving job market, characterized by constant technological advancements and digital transformation, the imperative of continuous learning and reskilling (and prove of it) is paramount for professionals seeking sustainable growth and success in their careers<sup>1</sup>. Recognizing this need, the LeADS (Leading Europe's Advanced Digital Skills) Coordination and Support Action, under the auspices of the DIGITAL Europe Programme, has emerged as a strategic initiative. The primary objective of LeADS is to offer profound insights into the evolving demands for advanced digital skills (ADS) within the context of dynamic technological development and ongoing digital transformation. In doing so, it seeks to empower skills suppliers, particularly those in education and training, with valuable knowledge, guidance, and best practices. The ultimate goal is to shape the future of European ADS talent and contribute to the successful implementation and collaborative achievement of the ADS program within the broader Digital Europe Programme.

At the heart of this initiative lies this focused and impactful workshop, designed to address the specific challenges and opportunities in VET-oriented reskilling. The top leading question that this workshop tries to answer is *"How to ensure the availability of appropriately recognized micro-credentials, short-term course and online learning options to meet industry and learner demands?"*. By answering this question, this workshop placed a spotlight on innovative approaches, notably micro-credentials<sup>2</sup> and MOOCs. These cutting-edge methods are poised to facilitate the swift adaptation of educational programs to meet the emerging and rapidly changing demands of the contemporary job market. Micro-credentials are following the principles of quality, transparency, relevance, flexibility, recognition, and portability, following particular learning outcomes, therefore being against vagueness and time-consuming processes when building new courses. Participants in the workshop embarked on an exploration of how these flexible and accessible learning options can be leveraged to empower workers in different domains. The emphasis was on enabling professionals to acquire new skills, validate existing knowledge, and crucially, stay relevant in their respective industries. This workshop represented a critical nexus, offering practical insights and tools to equip participants with the means to navigate and thrive in the dynamic landscape of the digital era.

In essence, the LeADS initiative, through its targeted workshop, is a catalyst for positive change. By bridging the gap between evolving industry demands and the skills landscape, it contributes significantly to the future readiness of European professionals and the overall success of the Digital Europe Programme. The main objective of the workshop was to explore VET-oriented reskilling with micro-credentials and MOOCs. Participants aimed to understand the significance of VET-oriented reskilling, utilizing flexible alternatives like micro-credentials

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<sup>1</sup> Cedefop (2023). [To build their learning and working careers, people must be able to take their skills and qualifications with them, wherever they go](#). CEDEFOPINFO, Issue 11 / November 2023.

<sup>2</sup> According to the [Council Recommendation on a European approach to micro-credentials for lifelong learning and employability \(10.12.2021, COM\(2021\) 770 final\)](#), "Micro-credential" means the record of the learning outcomes that a learner has acquired following a small volume of learning. These learning outcomes have been assessed against transparent and clearly defined standards. Courses 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 standalone or combined into larger credentials. They are underpinned by quality assurance following agreed standards in the relevant sector or area of activity.

and MOOCs, in adapting to technological advancements and industry changes. The focus was on elucidating how these approaches benefit both individuals and organizations in navigating the dynamic landscape of skills development.

### 3 CHALLENGES, DISCUSSION AND BEST PRACTICES

In the initial roundtable discussion, participants were assigned the responsibility of discussing the challenges and aspects concerning micro-credentials, providing a more comprehensive understanding of the landscape surrounding this new type of learning and training. Another objective was to propose good practices and recommendations to improve and deepen the penetration of flexible lifelong learning, training, and upskilling/reskilling tools to address emerging needs in the ADS.

In general, the challenges, benefits and solutions provided by micro-credentials were discussed from the view point of policy makers, the industry and the training providers; these stakeholders were asked to discuss micro-credentials under seven (7) directions:

- Quality assurance and standards in micro-credential programs
- Global recognition and portability (especially in the job market)
- Government policies and support
- Stakeholder engagement and collaboration
- Continuous learning and lifelong education
- Learner accessibility and inclusivity
- Designing micro-credentials aligned with industry needs

As we shall see in the last section of this chapter, micro-credentials seem to be quite effective in addressing the needs primarily of training providers, secondary of the policy makers, and thirdly the needs of the market. Especially for their market proliferation, a clear strategy mentioned includes the establishment of industry advisory boards composed of diverse sector representatives in order to provide continuous guidance and ensure that micro-credential programs closely align with current and emerging industry needs.

As far as it concerns the directions, they seem quite effective in addressing the following challenges (per direction).

- **Quality assurance and standards in micro-credential programs:** Continuous monitoring and review, Industry involvement in design and review, Establishment of accreditation bodies.
- **Global recognition and portability** (especially in the job market): Global standardization efforts, Industry-driven recognition campaigns, International collaboration in education, Advocacy for regulatory alignment.
- **Government policies and support:** Incentives for educational institutions, Collaborative platforms.
- **Stakeholder engagement and collaboration:** Regular stakeholder forums, Government incentives for collaboration.
- **Continuous learning and lifelong education:** Align micro-credentials with industry standards, Integrate micro-credentials into professional development programs.

- **Learner accessibility and inclusivity:** Collaborate with industry for relevance.
- **Designing micro-credentials aligned with industry needs:** Industry collaboration and input, Periodic skill gap analysis, Adoption of agile development methods, Incorporate practical application, Continuous industry feedback loop, Flexible learning paths, Engage industry professionals as instructors, Digital badges for skill verification.

Below we can see a summary of these primary challenges discussed and recommendations to tackle them, while an outline of additional challenges for further investigation is presented in Appendix.

### 3.1 Challenges about quality assurance in micro-credential programs

#### Challenges and Recommendations

This subsection is about exploring the challenges associated with maintaining quality and standards in micro-credential programs.

*Challenges description:* Ensuring the quality and standards of micro-credential programs poses several challenges that merit careful consideration. One key challenge lies in establishing a robust framework that guarantees the consistency and credibility of these programs across diverse offerings. The dynamic nature of micro-credentials, often tailored to specific skills or industries, makes it challenging to develop standardized assessment criteria. Accreditation models represent a critical component in addressing these challenges. Designing accreditation frameworks that are adaptable yet rigorous is essential to accommodate the diverse nature of micro-credentials. This involves the development of assessment criteria that can effectively evaluate the quality of learning outcomes, instructional design, and the overall educational experience. Another challenge involves striking a balance between flexibility and adherence to standards. Micro-credentials are often prized for their flexibility, allowing learners to acquire targeted skills without the time commitment of traditional programs. However, maintaining a balance that ensures a certain level of educational rigor and consistency is crucial for upholding the value of micro-credentials. Moreover, the international nature of micro-credential programs adds complexity to the quality assurance process. According to the discussion, developing accreditation models that can be applied globally is a challenge that requires collaboration and standardization efforts at an international level. Participant speakers agreed on this topic, that stakeholders should consider best practices from existing accreditation models, both within and outside the realm of traditional education. Examining successful approaches and adapting them to the unique characteristics of micro-credentials will contribute to the development of effective quality assurance and standardization measures. The goal is to create a system that not only ensures the credibility of micro-credential programs but also fosters trust among learners, employers, and educational institutions.

*Recommendations:* In addressing the challenges associated with quality assurance and standards in micro-credential programs, several recommendations were proposed to enhance the effectiveness and credibility of these educational offerings:



- Collaborative framework development: Foster collaboration among educational institutions, industry representatives, and accreditation bodies to develop comprehensive frameworks that define quality standards for micro-credential programs. This collaborative approach ensures that the perspectives of key stakeholders are considered, promoting a more inclusive and robust set of standards.
- Flexible yet rigorous accreditation models: Design accreditation models that strike a balance between flexibility and rigor. Recognize the unique nature of micro-credentials, allowing for adaptability of training content while ensuring that minimum quality standards are met. This flexibility accommodates the diverse needs of learners and industries while upholding educational excellence.
- Outcome-focused assessment criteria: Implement outcome-focused assessment criteria that evaluate not only the content but also the practical application of skills acquired through micro-credentials. Emphasize the relevance of the learning outcomes to real-world scenarios, ensuring that the skills gained are applicable and valuable in professional settings.
- Continuous monitoring and review: Establish mechanisms for continuous monitoring and regular review of micro-credential programs. This involves periodic assessments to ensure that the content remains current, relevant, and aligned with industry needs.
- International collaboration and recognition: Encourage international collaboration on quality assurance standards to facilitate global recognition of micro-credentials. Engage in discussions and agreements with international bodies to create a harmonized approach to accreditation, considering regional variations and industry-specific requirements.
- Transparency and information accessibility: Promote transparency by providing clear and accessible information about the accreditation process, criteria, and outcomes. As it is stated by the [Council Recommendation \(25/5/2022; 9237/22\) on a European approach to micro-credentials for lifelong learning and employability](#), transparency in micro-credentials is associated with the requirement for them to be measurable, comparable and understandable, with clear information on learning outcomes, workload, content, level, and the learning offer. This transparency builds trust among learners, employers, and educational institutions, enhancing the perceived value of micro-credentials.
- Industry involvement in design and review: Involve industry professionals in the design and review of accreditation standards. This ensures that micro-credentials align closely with the skills demanded in the job market. Industry input enhances the practical relevance of programs, contributing to the employability of micro-credential earners.
- Establishment of accreditation bodies: Consider the establishment of dedicated accreditation bodies specifically focused on micro-credentials. These bodies can develop expertise in evaluating the unique characteristics of micro-credential programs and contribute to the refinement of accreditation models tailored to this educational format.

By implementing these recommendations, stakeholders can contribute to the development of a robust quality assurance and standards framework for micro-credential programs, reinforcing their credibility and value in the evolving landscape of advanced digital skills education.

### 3.2 Challenges about global recognition and portability (especially in the job market)

#### Challenges and Recommendations

This subsection is about investigating how micro-credentials can achieve global recognition and portability. It includes challenges related to cross-border acceptance, standardization of credentials, and the development of frameworks that facilitate the transferability of skills internationally.

*Challenges description:* Navigating the challenges of global recognition and portability for micro-credentials, particularly in the job market, entails addressing various complexities. There was general agreement that one major obstacle lies in the acceptance of micro-credentials across borders, given the diverse educational systems, cultural contexts, and regulatory frameworks. The absence of standardized criteria for assessing and accrediting micro-credentials poses a significant hurdle, necessitating the establishment of consistent and universally recognized standards. According to a speaker, developing frameworks for the seamless transferability of skills acquired through micro-credentials is another challenge, with employers often questioning the applicability of skills gained in one context to another. Establishing credibility and acceptance of micro-credentials and MOOCs in the eyes of employers is central but requires overcoming scepticism and fostering trust in these alternative learning pathways. Integrating micro-credentials into existing global educational and employment systems demands alignment efforts, considering the varied academic and professional structures across regions. Limited awareness among employers about the nature and significance of micro-credentials further complicates matters, highlighting the need for extensive education on their value and alignment with industry needs. Navigating legal and regulatory challenges across international borders, securing industry engagement worldwide, and ensuring the continuous evolution of micro-credential content to match industry demands are additional layers of complexity that necessitate a collaborative, global effort to establish a framework promoting recognition and portability on a broad scale according to the participants.

*Recommendations:* To address the challenges surrounding global recognition and portability of micro-credentials, especially in the job market, the following recommendations were discussed:

- Global standardization efforts: Collaborate internationally to establish standardized criteria for the assessment and accreditation of micro-credentials. Engage with stakeholders, including educational institutions, industry bodies, and regulatory authorities, to create universally recognized standards that enhance the credibility and acceptance of micro-credentials across borders.
- Development of transferability frameworks: Invest in the development of frameworks that facilitate the seamless transferability of skills acquired through micro-credentials. Work

with industry experts and educational institutions to design models that showcase the applicability of these skills in diverse professional settings, thereby enhancing their recognition on a global scale.

- Industry-driven recognition campaigns: Engage industries globally in campaigns and initiatives that promote the recognition of micro-credentials. Encourage employers to actively participate in the development and endorsement of these alternative learning pathways, emphasizing their relevance to current and emerging skill requirements in the job market.
- International collaboration in education: Foster international collaboration among educational institutions, governments, and accreditation bodies to harmonize the recognition of micro-credentials. Develop agreements and frameworks that facilitate the acceptance of these credentials, considering the unique aspects of each region while working towards a more cohesive global approach.
- Advocacy for regulatory alignment: Advocate for regulatory alignment at the international level, addressing legal and regulatory challenges that hinder the recognition of micro-credentials. Collaborate with policymakers to establish frameworks that facilitate cross-border acceptance, ensuring a smoother integration into diverse global job markets.
- Continuous feedback mechanisms: Implement continuous feedback mechanisms involving employers, learners, and educational institutions to keep micro-credentials relevant and up to date. Regularly assess the changing demands of the job market and industry sectors, adjusting micro-credential content accordingly to maintain their global competitiveness.
- Incentives for lifelong learning: Introduce incentives for lifelong learning on a global scale. Encourage employers to value ongoing skill development through micro-credentials, creating a culture that recognizes and rewards individuals who proactively engage in upskilling and reskilling initiatives.

By implementing these recommendations, stakeholders can contribute to overcoming the challenges associated with global recognition and portability of micro-credentials, fostering their widespread acceptance in the dynamic landscape of the global job market.

### 3.3 Government policies and support

#### Challenges and Recommendations

This subsection is about discussing the role of government policies in facilitating the development and recognition of micro-credentials. It explores how regulatory frameworks can be adapted to encourage innovation while ensuring accountability and quality.

*Challenges description:* The role of government policies is pivotal in shaping the landscape for the development and recognition of micro-credentials. Governments play a critical role in fostering innovation, ensuring accountability, and maintaining quality standards within the rapidly evolving realm of alternative education. To facilitate the effective development and recognition of micro-credentials, regulatory frameworks need to be adapted strategically according to our speakers. Government policies can encourage innovation by providing a supportive environment that incentivizes educational institutions, private enterprises, and other stakeholders to explore and implement new approaches in micro-credential

development. This may involve offering grants or research funding to institutions engaged in creating innovative and industry-relevant micro-credential programs. Additionally, governments can establish collaborative platforms that bring together educators, employers, and policymakers to identify emerging skill needs and devise targeted micro-credential initiatives. Participants agreed that the adaptation of regulatory frameworks to ensure accountability is equally crucial. Governments can establish clear guidelines and standards for the creation and delivery of micro-credentials, emphasizing transparency, accuracy, and relevance. Accreditation processes can be refined to encompass the unique attributes of micro-credentials, ensuring that they undergo thorough evaluation while remaining adaptable to the dynamic nature of the digital skills landscape. Moreover, governments can contribute to the recognition of micro-credentials by collaborating with industry stakeholders to establish a framework that aligns with national workforce development goals. This may involve creating systems for the seamless transferability of micro-credential-acquired skills across educational institutions and industries. Governments can also engage in public awareness campaigns to promote the value of micro-credentials, educating employers, learners, and the broader public about their significance in the contemporary job market. Importantly, regulatory frameworks should strike a balance between flexibility and quality assurance. Governments can encourage experimentation and iteration in micro-credential development while implementing measures to ensure that these credentials maintain a high standard of educational rigor. This may involve periodic reviews, ongoing feedback mechanisms, and the establishment of accreditation bodies specialized in evaluating the unique attributes of micro-credentials. In summary, government policies play a crucial role in fostering an environment conducive to the development and recognition of micro-credentials. By adapting regulatory frameworks to encourage innovation, ensuring accountability, and promoting the quality of micro-credential programs, governments contribute significantly to the evolution of education and workforce development in the digital age.

#### *Recommendations:*

- **Flexible regulatory frameworks:** Governments should adopt flexible regulatory frameworks that encourage innovation in micro-credential development. This entails creating policies that allow for experimentation while maintaining a commitment to quality and accountability. The ability to adapt regulations to the evolving needs of the digital skills landscape is essential.
- **Incentives for educational institutions:** Provide incentives, such as grants or tax benefits, to educational institutions engaged in developing innovative and industry-relevant micro-credential programs. These incentives can stimulate creativity and responsiveness to the changing demands of the job market.
- **Collaborative platforms:** Establish collaborative platforms that bring together educators, employers, and policymakers. These platforms can serve as forums for identifying emerging skill needs, fostering partnerships, and collectively shaping micro-credential initiatives that align with national workforce development goals.
- **Clear guidelines for accountability:** Develop clear guidelines and standards for the creation and delivery of micro-credentials. Governments should emphasize transparency, accuracy, and relevance in these guidelines, ensuring that micro-credentials undergo rigorous evaluation to maintain accountability and quality.

- Adapted accreditation processes: Adapt accreditation processes to accommodate the unique attributes of micro-credentials. Regulatory bodies can refine accreditation procedures to include thorough evaluation of micro-credential programs while remaining flexible enough to accommodate the dynamic nature of digital skills.
- Transferability frameworks: Work towards creating frameworks that facilitate the seamless transferability of skills acquired through micro-credentials. Governments can collaborate with industry stakeholders to establish systems that recognize and value micro-credential-acquired skills across educational institutions and industries.
- Public awareness campaigns: Launch public awareness campaigns to promote the value of micro-credentials. Educate employers, learners, and the general public about the significance of these credentials in enhancing employability and addressing the evolving needs of the job market.
- Industry-government partnerships: Foster partnerships between governments and industries to jointly support the development and recognition of micro-credentials. This collaboration ensures that micro-credentials remain relevant to industry demands, and the private sector actively participates in shaping workforce development strategies.
- Periodic reviews and feedback mechanisms: Implement periodic reviews and feedback mechanisms to assess the effectiveness of micro-credential programs. Governments can establish processes for ongoing evaluation, incorporating feedback from learners, employers, and educators to ensure continuous improvement and relevance.

These recommendations collectively contribute to creating an environment conducive to the development and recognition of micro-credentials, ensuring that they remain a valuable and responsive component of the education and workforce development landscape.

### 3.4 Stakeholder engagement and collaboration

#### Challenges and Recommendations

This subsection is about exploring strategies for fostering stronger collaboration between educational institutions and industries. It is discussed here how to ensure that micro-credentials align closely with industry needs, and how to encourage active participation and engagement from employers in the design and validation of these programs. Engaging and aligning various stakeholders, including government bodies, industry representatives, and educational institutions, is crucial. Achieving consensus on the role of Micro-credentials in the broader educational and political context of Europe requires effective collaboration and communication.

*Challenges description:* Fostering robust collaboration between educational institutions and industries is imperative to ensure the efficacy and relevance of micro-credentials. A key strategy according to our participants in the workshop, involves establishing industry advisory boards, composed of diverse sector representatives, to provide continuous guidance and ensure that micro-credential programs closely align with current and emerging industry needs. Regular stakeholder meetings serve as vital forums for open communication, enabling educators, policymakers, and industry professionals to collaboratively shape micro-credential programs by sharing insights and discussing trends. To further fortify the link between education and industry, workplace secondments and exchanges can be

encouraged, fostering mutual understanding. Employers can actively participate in co-creating flexible curriculum structures, ensuring adaptability to evolving industry landscapes. Integrating industry-embedded projects into micro-credential programs, along with recognizing and incorporating industry-contributed content, enhances practical relevance and industry validation. Employers' active involvement in participatory validation processes and the development of employer-driven certifications reinforces the credibility of micro-credentials. Additionally, the promotion of industry-recognized badges tied to micro-credential achievements serves as visible endorsements of specific skills, further encouraging learners and validating the programs in the eyes of the industry. Overall, these collaborative strategies ensure that micro-credential programs remain dynamic, responsive, and closely aligned with the evolving needs of the workforce.

#### *Recommendations:*

- **Establish industry-academia partnerships:** Facilitate formal partnerships between educational institutions and industries to foster collaborative initiatives. These partnerships can involve joint research projects, shared resources, and regular communication channels to ensure ongoing collaboration.
- **Create industry advisory boards:** Establish industry advisory boards consisting of professionals from relevant sectors. These boards can provide insights into current industry needs, offer guidance on curriculum development, and ensure that micro-credentials stay aligned with practical industry requirements.
- **Regular stakeholder forums:** Host regular forums that bring together educators, policymakers, and industry representatives. These gatherings provide opportunities for open dialogue, idea exchange, and collaborative decision-making on the design and validation of micro-credential programs.
- **Flexible curriculum development:** Design micro-credential programs with a flexible curriculum that can adapt to changing industry demands. Involve industry professionals in the co-creation of curriculum structures, ensuring that the content remains relevant and meets the evolving needs of the workforce.
- **Offer workplace learning opportunities:** Provide opportunities for workplace learning, such as internships, apprenticeships, and industry placements. These experiences allow learners to gain practical insights and skills directly aligned with industry needs, enhancing the overall effectiveness of micro-credentials.
- **Professional development for educators:** Invest in ongoing professional development programs for educators to stay updated on industry trends. This ensures that educators are well-informed about the latest developments and can integrate relevant insights into micro-credential program design.
- **Employer-led certification:** Develop employer-led certification processes tied to micro-credentials. This involves employers actively participating in the validation and endorsement of acquired skills, enhancing the credibility and industry recognition of micro-credential programs.
- **Recognition of industry contributions:** Recognize and incorporate industry-contributed content within micro-credential programs. This can include guest lectures, real-world case studies, and industry-specific projects, enriching the learning experience and reinforcing the practical relevance of the programs.
- **Promote industry-endorsed badges:** Promote the creation of industry-endorsed badges linked to micro-credential achievements. These badges, recognized and valued by

employers, serve as tangible proof of specific skills acquired through the micro-credential programs.

- Government incentives for collaboration: Advocate for government incentives that encourage collaboration between educational institutions and industries. These incentives may include grants, tax benefits, or funding programs that support joint initiatives aimed at enhancing workforce skills through micro-credentials.

By implementing these recommendations, stakeholders can strengthen collaboration between educational institutions and industries, ensuring that micro-credentials are designed, validated, and continuously updated to meet the evolving needs of the job market.

### 3.5 Continuous learning and lifelong education

#### Challenges and Recommendations

In this subsection it is addressed the role of micro-credentials in promoting continuous learning and lifelong education. It is explored how these credentials can be integrated into a broader framework that supports ongoing skill development throughout an individual's career.

*Challenges description:* Micro-credentials play a pivotal role in promoting continuous learning and lifelong education by offering a flexible and targeted approach to skill development throughout an individual's career. There was general agreement that these credentials, typically focused on specific competencies or areas of expertise, align seamlessly with the evolving demands of the job market and provide a pathway for professionals to adapt to changing industry landscapes. One key aspect is the modular nature of micro-credentials, allowing individuals to acquire specific skills or knowledge relevant to their immediate needs or career aspirations. This modularity facilitates ongoing learning as professionals can engage in micro-credential programs without committing to lengthy traditional courses, making it easier to balance education with work responsibilities. The integration of micro-credentials into a broader framework for lifelong education involves creating pathways that allow learners to stack or combine multiple credentials over time. This stacking approach enables individuals to progressively build a comprehensive skill set, adapting to advancements in technology, industry trends, and job requirements. Institutions and employers can support this process by recognizing and valuing the accumulation of micro-credentials as evidence of a learner's continuous commitment to skill development. Additionally, micro-credentials can be strategically aligned with industry-recognized competencies and standards, providing a tangible link between the acquired skills and professional benchmarks. This alignment enhances the credibility and relevance of micro-credentials, making them valuable assets for individuals seeking career advancement or transition. To further support continuous learning, micro-credentials can be embedded within broader professional development programs. Employers can actively encourage employees to pursue micro-credentials relevant to their roles, fostering a culture of ongoing learning within the organization. This integration promotes a dynamic workforce that stays ahead of industry changes and contributes to the overall innovation and competitiveness of the business. It was agreed that technology plays a crucial role in enabling lifelong education through micro-credentials. Online platforms and digital delivery methods make it convenient

for individuals to access micro-credential programs at any stage of their careers, fostering accessibility and inclusivity. Moreover, these platforms often incorporate interactive elements, assessments, and real-world applications, enhancing the learning experience and ensuring the practical applicability of acquired skills. In conclusion, micro-credentials serve as catalysts for continuous learning and lifelong education by offering a flexible, modular, and industry-aligned approach to skill development. As an integral part of a broader educational framework, micro-credentials empower individuals to adapt to the demands of the ever-changing professional landscape, fostering a culture of ongoing learning that is essential for personal and career growth in the 21st century.

#### *Recommendations:*

- **Develop clear learning pathways:** Create structured learning pathways that allow individuals to progress through a series of micro-credentials, building on their existing skills and knowledge. Clearly defined pathways provide guidance for continuous learning and career development.
- **Encourage micro-credential stacking:** Promote the concept of micro-credential stacking, where individuals accumulate multiple credentials over time to build a comprehensive skill set. Recognize and reward the achievement of specific milestones within these stacking (associated with pathways, i.e. milestones consist parts of flexible pathways).
- **Align micro-credentials with industry standards:** Ensure that micro-credentials align with industry-recognized standards and competencies. This alignment enhances the value of micro-credentials as professionals can demonstrate their adherence to established benchmarks, making them more attractive to employers.
- **Integrate micro-credentials into professional development programs:** Integrate micro-credentials into broader professional development programs within organizations. Encourage employees to pursue relevant micro-credentials that align with their roles, fostering a culture of continuous learning and skill enhancement.
- **Facilitate recognition by employers:** Work with employers to establish recognition mechanisms for micro-credentials. Collaborate with industry partners to ensure that employers value and acknowledge the skills acquired through micro-credential programs, contributing to career advancement opportunities.
- **Implement digital badges and credentials:** Adopt digital badges and credentials as a tangible representation of micro-credential achievements. These digital credentials can be easily shared on professional platforms, enhancing visibility and providing a standardized way to showcase skills.
- **Promote accessibility through online platforms:** Utilize online platforms to make micro-credential programs accessible to a wide audience. Leverage technology to offer flexible, self-paced learning experiences, ensuring that individuals can engage in continuous learning regardless of their location or schedule.
- **Provide learning support resources:** Offer support resources, such as mentorship programs, peer networks, and additional learning materials, to complement micro-credential programs. These resources enhance the learning experience and provide individuals with a supportive community.
- **Regularly update micro-credential content:** Implement processes to regularly update micro-credential content to reflect the latest industry advancements. Ensuring that micro-credentials remain current and responsive to evolving trends maintains their value in supporting continuous learning.



- Advocate for recognition in credentialing systems: Advocate for the recognition of micro-credentials within broader credentialing systems. Collaborate with credentialing bodies and regulatory authorities to ensure that micro-credentials are acknowledged as valid and valuable components of lifelong learning.

By implementing these recommendations, stakeholders can enhance the effectiveness of micro-credentials in promoting continuous learning and lifelong education, providing individuals with valuable tools for skill development and career advancement throughout their professional journeys.

### 3.6 Learner accessibility and inclusivity

#### Challenges and Recommendations

In this subsection, issues related to the accessibility of micro-credentials are addressed, including financial considerations, geographical limitations, and the need for inclusivity. Ways to make micro-credentials more accessible to a diverse range of learners are proposed.

*Challenges description:* During the roundtable it was suggested that one of the key challenges in ensuring the accessibility of micro-credentials is associated with financial considerations. Many learners face financial constraints that can hinder their ability to enrol in these programs. The cost of micro-credentials, which varies across providers, may pose a barrier to individuals seeking to acquire new skills or advance their careers. Additionally, geographical limitations present another significant challenge. Learners in remote or underserved areas may encounter difficulties accessing micro-credential programs due to a lack of infrastructure or limited availability of relevant courses. Furthermore, the need for inclusivity introduces challenges related to accommodating diverse learning needs, considering varying cultural contexts, and ensuring that content is representative and accessible to learners from different backgrounds. Overcoming these challenges requires the implementation of strategies such as affordable pricing models, online delivery formats to eliminate geographical barriers, and the application of universal design principles to create inclusive learning environments. Additionally, collaborations with employers, financial aid programs, and community engagement initiatives can contribute to making micro-credentials more accessible to a diverse range of learners, addressing the multifaceted challenges associated with accessibility and inclusivity.

#### *Recommendations:*

- Implement affordable pricing models: Establish affordable pricing models for micro-credentials to address financial considerations. This may include tiered pricing structures, discounts, or instalment plans to make these programs more accessible to learners with varying financial capacities.
- Offer financial aid and scholarships: Create financial aid programs and scholarship opportunities to support learners facing economic constraints. Providing financial assistance can alleviate the financial burden and enable a broader range of individuals to participate in micro-credential programs.
- Expand online delivery formats: Embrace online delivery formats to overcome geographical limitations. Offering micro-credentials through online platforms ensures that

learners worldwide, including those in remote or underserved areas, can access the programs without facing geographical barriers.

- Utilize universal design principles: Apply universal design principles in the development of micro-credential programs to ensure inclusivity. Designing courses that consider diverse learning needs, including accessibility features for individuals with disabilities, enhances the overall inclusivity of the learning experience.
- Localize content and cultural representation: Localize content to cater to diverse linguistic and cultural backgrounds. Ensure that examples and case studies used in micro-credential programs represent a variety of cultural perspectives, promoting inclusivity and relatability for learners from different backgrounds.
- Flexible learning paths: Provide flexible learning paths, allowing learners to progress at their own pace. This accommodates individuals with varying work schedules, personal commitments, or learning preferences, making micro-credentials more adaptable to diverse learner needs.
- Establish employer-sponsored programs: Encourage employers to sponsor or support employees in enrolling in micro-credential programs. Employer-sponsored initiatives can alleviate financial constraints for learners and align educational goals with professional development objectives.
- Collaborate with industry for relevance: Foster collaborations with industry partners to ensure the relevance of micro-credential programs. Industry input enhances the applicability of acquired skills, making the programs more attractive and valuable to learners seeking immediate career benefits.
- Digital certification for visibility: Provide digital certification options for micro-credentials to enhance visibility and shareability. Digital badges and credentials empower learners to showcase their achievements on various platforms, aiding in job searches and career advancement.
- Community building and support networks: Foster community building and support networks for learners. Establishing peer support systems and mentorship programs creates an inclusive environment where learners can connect, share experiences, and receive guidance throughout their micro-credential journey.

By implementing these recommendations, stakeholders in micro-credential programs can actively work towards addressing challenges related to accessibility, financial constraints, and inclusivity, making these programs more widely available and beneficial to a diverse range of learners.

### 3.7 **Designing micro-credentials aligned with industry needs**

#### **Challenges and Recommendations**

Developing micro-credentials that effectively align with industry requirements is a complex task. Strategies for designing courses that offer practical, job-relevant skills in the field of advanced digital skills need to be explored and refined.

*Challenges description:* Designing micro-credentials that effectively align with industry needs presents a multifaceted challenge in the realm of advanced digital skills. One of the primary hurdles lies in ensuring that the content of these micro-credential courses is not only

relevant but also practical and job-relevant. Achieving this requires an intricate understanding of the rapidly evolving landscape of advanced digital skills and the specific demands of industries. Striking the right balance between theoretical knowledge and hands-on, practical application is essential. Additionally, addressing the diverse needs of learners poses a significant challenge. Designing micro-credentials that cater to a wide range of backgrounds, skill levels, and learning preferences while maintaining industry relevance is a delicate balancing act. Furthermore, staying abreast of emerging technologies and industry trends to keep micro-credential content up-to-date is critical for sustained relevance. The challenge lies in creating dynamic courses that adapt to the ever-changing demands of the digital job market while remaining accessible to learners from various backgrounds, ensuring that the knowledge gained translates seamlessly into practical, on-the-job skills.

#### *Recommendations:*

- **Industry collaboration and input:** Foster strong collaborations with industry partners to gain valuable insights into current and emerging needs. Regular input from industry professionals ensures that micro-credentials are aligned with the practical requirements of the job market.
- **Periodic skill gap analysis:** Conduct regular skill gap analyses to identify evolving needs within the industry. This analysis helps in tailoring micro-credential content to address specific gaps and ensures that the skills taught remain relevant and in-demand.
- **Adoption of agile development methods:** Embrace agile development methods to quickly respond to changes in industry requirements. This approach allows for flexibility in course design and content adaptation, ensuring that micro-credentials stay current and responsive to dynamic industry trends.
- **Incorporate practical application:** Design micro-credential courses with a strong emphasis on practical, hands-on application. Including real-world projects, case studies, and simulations ensures that learners acquire skills that are directly transferable to their professional roles.
- **Continuous industry feedback loop:** Establish a continuous feedback loop with industry professionals who can provide ongoing input on the relevance and effectiveness of micro-credential programs. Regular feedback helps in making timely adjustments to course content and delivery methods.
- **Flexible learning paths:** Provide flexible learning paths within micro-credentials to accommodate learners with different levels of expertise. Design courses that allow individuals to enter at various skill levels, ensuring accessibility to a diverse range of learners.
- **Engage industry professionals as instructors:** Bring industry professionals on board as instructors or guest lecturers to provide real-world perspectives and insights. Their practical experience enhances the authenticity of the content and reinforces the relevance of micro-credentials.
- **Digital badges for skill verification:** Implement digital badges or micro-certifications tied to specific skills acquired through micro-credentials. These badges serve as verifiable proof of skills and are recognized by employers, contributing to the credibility and market value of micro-credentials.

By implementing these recommendations, micro-credential programs can better navigate the challenges of aligning with industry needs, ensuring that the content remains practical,



relevant, and accessible to a diverse range of learners in the dynamic landscape of advanced digital skills.

## 4 SOLUTIONS

The following recommendations represent the solutions articulated by the panel to address the challenges and opportunities in Vocational Education and Training (VET)-oriented reskilling. The matrix provides a grid to show the stakeholders involved generating the solutions.

*Table 1. Solutions provided by micro-credentials for the different stakeholders of interest*

<b>Challenges about quality assurance and standards in micro-credential programs</b>	<b>Policymaker</b>	<b>Industry</b>	<b>Training provider</b>
Collaborative framework development	X		X
Flexible yet rigorous accreditation models	X		X
Outcome-focused assessment criteria			X
Continuous monitoring and review	X	X	X
International collaboration and recognition			X
Transparency and information accessibility			X
Industry involvement in design and review	X	X	X
Establishment of accreditation bodies	X	X	X
<b>Challenges about global recognition and portability (especially in the job market)</b>	<b>Policymaker</b>	<b>Industry</b>	<b>Training provider</b>
Global standardization efforts	X	X	X
Development of transferability frameworks			X
Industry-driven recognition campaigns	X	X	X
International collaboration in education	X	X	X
Advocacy for regulatory alignment	X	X	X
Continuous feedback mechanisms			X
Incentives for lifelong learning	X		X
<b>Government policies and support</b>	<b>Policymaker</b>	<b>Industry</b>	<b>Training provider</b>
Flexible regulatory frameworks	X		X
Incentives for educational institutions	X	X	X
Collaborative platforms	X	X	X
Clear guidelines for accountability	X		X
Adapted accreditation processes			X
Transferability frameworks	X		
Public awareness campaigns	X	X	
Industry-government partnerships	X	X	
Periodic reviews and feedback mechanisms	X	X	
<b>Stakeholder engagement and collaboration</b>	<b>Policymaker</b>	<b>Industry</b>	<b>Training provider</b>
Establish industry-academia partnerships		X	X
Create industry advisory boards		X	X
Regular stakeholder forums	X	X	X
Flexible curriculum development			X

Offer workplace learning opportunities		x	x
Professional development for educators			x
Employer-led certification		x	
Recognition of industry contributions	x	x	
Promote industry-endorsed badges		x	x
Government incentives for collaboration	x	x	x
<b>Continuous learning and lifelong education</b>	<b>Policymaker</b>	<b>Industry</b>	<b>Training provider</b>
Develop clear learning pathways	x		x
Encourage micro-credential stacking			x
Align micro-credentials with industry standards	x	x	x
Integrate micro-credentials into professional development programs	x	x	x
Facilitate recognition by employers	x		x
Implement digital badges and credentials		x	x
Promote accessibility through online platforms		x	
Provide learning support resources			x
Regularly update micro-credential content			x
Advocate for recognition in credentialing systems	x		x
<b>Learner accessibility and inclusivity</b>	<b>Policymaker</b>	<b>Industry</b>	<b>Training provider</b>
Implement affordable pricing models			x
Offer financial aid and scholarships			x
Expand online delivery formats			x
Utilize universal design principles			x
Localize content and cultural representation			x
Flexible learning paths			x
Establish employer-sponsored programs			x
Collaborate with industry for relevance	x	x	x
Digital certification for visibility			x
Community building and support networks			x
<b>Designing micro-credentials aligned with industry needs</b>	<b>Policymaker</b>	<b>Industry</b>	<b>Training provider</b>
Industry collaboration and input		x	x
Periodic skill gap analysis		x	x
Adoption of agile development methods		x	x
Incorporate practical application		x	x
Continuous industry feedback loop		x	x
Flexible learning paths		x	x
Engage industry professionals as instructors		x	x
Digital badges for skill verification		x	x



## 5 CONCLUSIONS

The workshop managed to engage policy makers, governmental representatives, human resources professionals, trainers, VET organizations and other stakeholders, who were interested in learning more and adopting micro-credentials and MOOCs in existing curricula and programs. A series of interesting outcomes emerged providing rich insights for the challenges the aforementioned stakeholders face.

First and foremost, concerning the quality assurance and standards in micro-credentials, the collaboration between key stakeholders so as to develop comprehensive frameworks that define quality standards for micro-credential programs appears to be of high importance. Accreditation models should be also developed, balancing between flexibility and rigor, so as to also address the diverse needs of the trainees, the market and the pedagogical principles. This should be done exploiting the approach of learning outcomes, in order to assure the pedagogical validity and the practical application of skills developed, as well as to support the continuous monitoring for quality assurance and the state-of-the-art. Employing the aforementioned models will support transparency, trust, recognition and international collaboration between institutions. Overall, the accreditation process could be undertaken by dedicated bodies orienting to micro-credentials, involving in a degree the market.

Secondly, concerning global recognition and portability (mainly in the job market), discussion indicated the challenges arises due to the different recognition processes, educational systems, cultural contexts, and regulatory frameworks across countries, setting the route towards the needs for standardized criteria in issuing micro-credentials. Limited awareness about them, together with lack of credibility and acceptance by the market, ruin the approach. Solution to these challenges may unfold from the common development of standardized criteria for the assessment and accreditation of micro-credentials, and transferability frameworks. Creating awareness and incentives, international collaboration among key stakeholders, regulatory alignment, and integration of feedback mechanisms for continue improvement would facilitate the acceptance of the micro-credentials.

Thirdly, government policies and support for development and recognition of micro-credentials would be enhanced further through the adoption of flexible and transferable regulatory frameworks based on quality and accountability, accepted by the market. In parallel, serious effort should be invested in the provision of incentives guidelines and campaigns fostering the adoption of micro-credentials.

Fourth, as underlined also in the previous paragraphs, the collaboration between key stakeholders is of high importance. The empowerment of the role of industry through the establishment of advisory boards and academia-industry partnerships, the provision of work-based learning opportunities, as well as their collaboration on curricula development and certification, would help a lot in the adoption of micro-credentials.

Alongside, micro-credentials have a lot to offer in the context of continuous and lifelong learning; they can play a pivotal role in the establishment of learning pathways and career advancement, enabling individuals to stack them and follow the market needs and standards. Gradually, they can advance the recognition of skills, and support mechanisms for continuous learning addressing the actual needs of the individual professionals.



On the other hand, micro-credentials adoption face various challenges related to their accessibility, mainly due to financial (cost) and geographical limitations. Inclusion is also a challenge, typical related to the different training needs and cultural differences; this limitation should be considered when designing strategies and processes for micro-credentials adoption (e.g. employment of financing schemes, exploiting online means, support networks, etc.).

Last but not least, it was stressed overall the importance of linking micro-credentials and MOOCs with the industry needs; in this regard, their establishment should be based on continuous skills gaps monitoring, the application of the agile approach in their development, their flexibility and engagement of market professionals in the instruction process.

Concerning the leading question of this workshop which was *“How to ensure the availability of appropriately recognized micro-credentials, short-term course and online learning options to meet industry and learner demands?”*, the recommendations that emerged, outline the crucial role of government policies, of stakeholders engagement and collaboration in ensuring the availability of appropriately recognized micro-credentials, short-term courses, and online learning options to meet industry and learner demands. Governments can facilitate this by providing motivation, ensuring accountability and quality standards, collaborating with industry stakeholders, conducting public awareness campaigns, and maintaining a balance between flexibility and quality assurance in regulatory frameworks.

## 6 APPENDIX

Embarking on a comprehensive exploration of the intricate intersections between education, technology, and workforce development, this workshop navigates through pivotal questions shaping the landscape of advanced digital skills (ADS). Focused on micro-credentials and Massive Open Online Courses (MOOCs), our discourse delves into the multifaceted integration of these innovative learning approaches within the educational framework and political context of Europe. From the challenges faced by Higher Education Institutions (HEIs) and Vocational Education and Training (VET) providers in seamlessly incorporating Micro-credentials and MOOCs into existing curricula to the critical role of stakeholders in ensuring the recognition and valuation of skills in the job market, our discussions are poised to unravel complexities. Further, we scrutinize the pivotal role played by micro-credentials in bolstering labour-market-related education and delve into strategies for designing micro-credentials that align with industry needs, providing learners with practical, job-relevant ADS skills. As we navigate this dynamic terrain, we also scrutinize the incentives required from both the public and private sectors to foster the broader development of courses and micro-credentials, fostering a collaborative approach towards the future of advanced digital skills.

### Topics

These are the main topics discussed:

- How are micro-credentials (and relevant forms of education e.g. MOOCs) integrated in the educational framework and the political context in Europe? (e.g. Action 10: A European approach to micro-credentials).
- How can HEIs and VET providers effectively integrate micro-credentials and MOOCs into their existing curriculum and programs? (challenges and barriers, and ways to overcome them).
- Which are the stakeholders and how can they ensure that the skills acquired through micro-credentials and MOOCs are recognized and valued by employers in the job market?
- Which is the role played by micro-credentials in supporting labour-market-related and employment-relevant education, training and learning for ADS skills?
- How can micro-credentials be designed to align with industry needs and provide learners with practical, job-relevant ADS skills?
- How can the public and the private sector provide incentives for the wider development of such courses and micro-credentials?

### Structure & Agenda

The event aimed to maximize participant engagement, opting for a roundtable format as the most suitable structure. The roundtable discussion took place online by Maggioli Spa on November 23rd, 2023, running from 11.00 a.m. to 12.30 p.m. Spiros Borotis (Maggioli Spa) served as the host, with technical support from Christopher Karachristos (Maggioli Spa) and Nikos Achilleopoulos (Maggioli Spa). Brendan Rowan, from BluSpecs), was also supported the

event by presenting the key data on Advance Digital Skills in the LeADS context and an overview of identified gaps.

- Date: 23 November 2023, 11:00 CET,
- Location: Online.

Time (CET)	Session
11:00	Welcome and outline of the workshop. - Spiros Borotis, (Maggioli Spa).
11:05	LeADS context. Key data on Advance Digital Skills and an overview of identified gaps. - Brendan Rowan, (BluSpecs).
11:20	Round Table (Interviews with invited speakers) - Spiros Borotis, (Maggioli Spa), - George Ubachs, (EADTU), - Aikaterini Kyprianou, (GRNET), - Vana Karagianni, (ENSŌ Hub).
11:50	Discussion (open to audience).
12:20	Conclusions (Wrap-up and Key Take-Away).

## Speakers

The workshop featured three panel speakers who were specifically chosen for their profound expertise and insights related to advanced digital skills within organizations. Here is a concise overview of the workshop's guest speakers.

***George Ubachs, Managing Director European Association of Distance Teaching Universities (EADTU).***

George Ubachs EADTU is Managing Director of EADTU. He is responsible for the development and support of the EADTU network, policies, and execution of its goals in online, open, and flexible higher education. He is coordinator of international academic cooperation networks on the digitalization of higher education, micro-credentials, international curricula and virtual mobility, and on business models for lifelong learning. EADTU has also developed the E-xcellence instrument and manual for quality assurance in online, open, and flexible education. George Ubachs is also coordinator of the European MOOC Consortium (EMC), which has developed a standard for micro-credentials through the Common Micro-credential Framework (CMF).

***Aikaterini Kyprianou, Head of Digital Skills Development of the department of Digital Transformation & Digital Skills GRNET S.A. – National Infrastructures for Research and Technology, GR-Digi-GOV-Inno HUB / EDYTE.***

The Directorate of Digital Skills has the responsibility of specializing the strategy of the Ministry of Digital Governance (DGD) for investing in the country's human resources by leveraging and strengthening its institutional initiatives, services, networks, technological infrastructures and applications. The Directorate specializes the strategy and implements the actions of the Bible of Digital Transformation and harmonizes with the policies of the EU. but also international trends and policies. The objectives for the development of digital skills seek to contribute so that a) the informed citizen feels safe and active b) the state is efficient in its services through its digital transformation c) the education system is harmonized with the needs of the digital age d ) the employed and the unemployed to adjust their professional profile based on the skills required by the needs of the market and the change of the country's development model, e) to achieve social cohesion through the mitigation of economic, social and educational inequalities. The achievement of these goals is pursued through educational, advisory, supportive actions and actions through a) the development of synergies and collaborations with state institutions (ministries, supervised entities, OTAs), with educational institutions, with professional and social organizations and b) the utilization of People and Funding (national and European) and c) the utilization of European and International Capacity Development Frameworks and Good Practices. The Digital Capabilities Directorate consists of four (4) departments:

- Department of Strategy and Development of the Digital Capabilities Framework
- Department of Planning and Development of Educational Programs
- Department of Infrastructure for the Development of Digital Capabilities
- Department of Networking, Awareness and Hub of Excellence

***Vana Karagianni, People Architect, Co-Founder at ENSŌ Hub.***

Vana is a People Architect working with individuals, teams and organizations to challenge and support them in achieving higher levels of performance while allowing them to bring out the best in themselves and those around them. She uses tools that meet any innovation that is social in its ends or in its means, or simply any working, innovative solution to help address a pressing societal challenge.

ENSŌ is a European knowledge hub that delivers out of the box research, capacity building and training solutions towards individuals, teams and organisations. With their methodologies and tools they facilitate them to unlock their potential and helping them to enhance working, feeling and living conditions, and contribute to Social Innovation. ENSŌ provide opportunities to people in order to a) unlock their potential while having a life balance and b) enhance their social impact while having sustainability as a focal point. Their engaging and inclusive approaches from different sectors focus are leading social groups and organisations to the acquirement of the 21st century skills: innovation, questioning, challenging, dreaming, imagining, experimenting, learning and enterprising.

**Description of type of attendees**

The workshop draws a diverse audience comprising various stakeholders deeply engaged in the realms of education, policy-making, and industry, all united by a shared interest in advancing digital skills. Among the participants were Policy Makers and Government Representatives from the higher education sector (e.g. Hellenic Open University, University

of Patras), including government officials and policymakers responsible for shaping educational policies (members of EDYTE - National Infrastructures for Research and Technology, GR-Digi-GOV-Inno HUB), especially those related to advanced digital skills. These individuals seek to gain insights into the role of micro-credentials within the broader educational and political context in Europe, with a focus on policy implications and effective program implementation for short learning programmes for lifelong education. Educators and Trainers from Higher Education Institutions (HEIs) (e.g. from the Hellenic Open University) and Vocational Education and Training (VET) Providers (Training and Lifelong Learning Center - KEDIVIM representatives) constitute another segment, eager to learn strategies for integrating micro-credentials and MOOCs into existing programs and understanding the political interventions necessary for success. Stakeholders in Vocational Education and Training (VET) are represented by those involved in program development, keen on exploring innovative approaches like micro-credentials and MOOCs to ensure the recognition of skills by employers. Lifelong Learners (mostly individuals), proactive in their professional development, seek opportunities for upskilling and reskilling in advanced digital skills, finding practical knowledge and tools to embark on a VET-oriented journey. Employers and Human Resources Professionals attended to comprehend how micro-credentials align with industry needs, aiding in talent identification and management. Finally, Private Sector Representatives from companies and organizations aim to explore ways to incentivize the development of courses and micro-credentials, recognizing their pivotal role in supporting the evolving needs of the digital job market. In essence, the workshop engaged a multifaceted audience, fostering a collaborative and comprehensive dialogue on the challenges and opportunities inherent in the dynamic landscape of advanced digital skills.

### Talking Points

The workshop is designed to explore and address various aspects of micro-credentials, with a focus on their integration into the European educational framework and political context. The first segment delves into the definition of micro-credentials and their incorporation into the broader educational landscape, including relevant forms of education such as MOOCs. This encompasses a discussion on European initiatives like Action 10, which outlines a European approach to micro-credentials. The second question tackles the integration of micro-credentials and MOOCs into educational frameworks and political contexts in Europe, particularly exploring challenges, barriers, and strategies for effective implementation by Higher Education Institutions (HEIs) and Vocational Education and Training (VET) providers. The third area of discussion revolves around stakeholders and their roles in ensuring the recognition and value of skills acquired through micro-credentials and MOOCs in the job market. Additionally, the workshop explores the role of micro-credentials in supporting labor-market-related education for Advanced Digital Skills (ADS) and addresses how these credentials can be aligned with industry needs to equip learners with practical, job-relevant skills. Finally, the workshop delves into the broader question of incentivizing the development of micro-credential courses, exploring the roles of both the public and private sectors in fostering their wider adoption and development. Through these discussions, participants will gain insights into the current landscape, future trends, and necessary preparations for the evolving field of micro-credentials in the context of advanced digital skills. So the leading questions of the workshop were:

- What is a Micro-credential? How are micro-credentials (and relevant forms of education e.g. MOOCs) are integrated in the educational framework and the political context in

Europe (e.g. Action 10: A European approach to micro-credentials). And moreover, what are the future trends and innovations in micro-credential and MOOC development, and how should institutions prepare for them?

- How are micro-credentials (and relevant forms of education e.g. MOOCs) integrated in the educational framework and the political context in Europe (e.g. Action 10: A European approach to micro-credentials)
- How can HEIs and VET providers effectively integrate micro-credentials and MOOCs into their existing curriculum and programs? (challenges and barriers, and ways to overcome them)
- Which are the stakeholders and how can they ensure that the skills acquired through micro-credentials and MOOCs are recognized and valued by employers in the job market?
- Which is the role played by micro-credentials in supporting labour-market-related and employment-relevant education, training and learning for ADS skills?
- How can micro-credentials be designed to align with industry needs and provide learners with practical, job-relevant ADS skills?
- How can the public and the private sector provide incentives for the wider development of such courses and micro-credentials?

#### **Further discussion on challenges or aspects that need to be addressed in depth**

Further exploration of challenges and aspects in the realm of micro-credentials could delve into the intricacies of assessing and validating the effectiveness of these programs. Evaluation metrics, industry-recognized standards, and mechanisms for verifying the acquired skills need thorough consideration. Assessing the long-term impact of micro-credentials on learners' careers and employability is a crucial area for exploration. Additionally, understanding the scalability of micro-credential programs and their integration into broader educational frameworks requires in-depth analysis. The potential challenges associated with ensuring equitable access to micro-credentials for learners from diverse socioeconomic backgrounds and underrepresented groups warrant careful examination. Furthermore, exploring innovative approaches to maintaining the validity of micro-credential content between rapid technological advancements and industry shifts is essential. A comprehensive discussion on the ethical considerations, such as the transparency of micro-credential providers and the fair representation of skills acquired, would contribute to a holistic understanding of the micro-credential landscape. In-depth analysis and dialogue on these nuanced aspects will enrich the discourse surrounding micro-credentials, providing valuable insights for policymakers, educators, and industry stakeholders.