

## **Selected Bibliography on Micro-Credentials**

WP 3 - COMMON UNDERSTANDING

WP LEADER: BIBB

Compiled by Christiane Eberhardt, Federal Institute for Vocational Education and Training (BIBB), July 2023







#### **About BEM**

The European Commission has launched a call for proposals under the Erasmus Plus programme for the area "Capacity Building" at the end of 2021 (EACEA). This relatively new EU programme line aims to promote the relevance, accessibility and responsiveness of VET institutions and systems in non-EU Member States and to support educational partnerships. BEM is one of 58 projects proposed for funding in the 2022 call. The project started on 01.01.2023 and has a duration of three years.

The Erasmus+ project "Beyond Europe with Micro-credentials" (BEM project) is about transferring experiences from ECVET to the development of micro-credentials. The aim is to reflect these in the non-EU member states and adapt them to the respective local conditions. With micro-credentials (MC), labour market-relevant qualifications are developed whose contents are derived from the needs of selected sectors in the countries and implemented in consultation with regional companies. MCs also focus on groups of people who have so far been insufficiently covered by the education systems (e.g. learners in structurally weak regions, single parents, unskilled workers, people with support needs, refugees). BEM MCs can be used in vocational education and training (VET), as an additional qualification or for the validation and recognition of informal learning. It is planned to develop 10 to 12 MCs per country. The developed MCs will be linked to the Europass templates and included in the multilingual "Skillsbank" maintained in Norway. This will give them an additional European added value, and they can be transferred to other countries or sectors.

The BEM project brings together VET institutes, national qualifications authorities, intermediate institutions, and VET providers (vocational schools and training centers) from eight countries. This broad project partnership enables the accreditation, documentation, recognition, or validation of MCs according to the conditions applicable in each country, thus building a bridge between education (VET and higher education) and the world of work.

Countries: Germany, Norway, Ukraine, Republic of North Macedonia, Serbia, Montenegro, Armenia, Georgia







## **Introductory Note:**

Work package 3 of the BEM-project aims to develop a common understanding of what labour market relevant micro-skills are and how they can be displayed in a template. To this end, among other things, a list of references was compiled that serves several purposes:

- it maps European activities to promote micro-credentials,
- describes contexts of application (Higher Education, Industry) and
- provides insight into experiences and approaches from countries that already work with micro-credentials.

Special emphasis is placed on sources dealing with the development of micro-credentials with guidelines, definitions, samples, examples, etc. (often in the form of websites, videos, etc.). Here we expect important impulses for the design of our own BEM development/designing process. For this reason, the literature list is incomplete and essentially lists references that have a connection to the BEM objectives. References that deal in depth with the use of micro-credentials in higher education or with technical implementation aspects (digital credentials, badges, etc.) have not been included.

The bibliography concludes with information that critically addresses the issue of micro-credentials. This takes the topic off the current political agenda and puts it to the test from different perspectives.

The literature review reveals what previous discussion in the "European VET-project family" suggests: Although the term "micro-credentials" has found a firm place in European recommendations and publications within a short period of time, it has not been contoured either in its form or in its differentiation from other educational formats in relation to vocational education and training - i.e. to an application outside the higher education sector. Thus, BEM offers a space for experimentation and testing. With the work on BEM, the literature list will also continue to grow. We welcome literature references that are currently missing and those that should definitely appear. Please send all relevant references to <a href="mailto:bem@sbgdd.de">bem@sbgdd.de</a> or to <a href="mailto:ebehardt@bibb.de">ebehardt@bibb.de</a>







## **References Micro-Credentials (WP 3)**

# References around the European Discussion on Micro-Credentials (EU-recommendations, contributions to EU-consultation, policy papers)

Council recommends European approach to micro-credentials. (2023, July 21). <a href="https://www.consilium.europa.eu/en/press/press-releases/2022/06/16/council-recommends-european-approach-to-micro-credentials/">https://www.consilium.europa.eu/en/press/press-releases/2022/06/16/council-recommends-european-approach-to-micro-credentials/</a>

Council of the European Union. (25 May 20222). Proposal for a Council Recommendation on a European approach to microcredentials for lifelong learning and employability - Adoption. Interinstitutional File: 2021/0402(NLE). Brussels. <a href="https://data.consilium.europa.eu/doc/document/ST-9237-2022-INIT/en/pdf">https://data.consilium.europa.eu/doc/document/ST-9237-2022-INIT/en/pdf</a>

Council Recommendation of 24 November 2020 on vocational education and training (VET) for sustainable competitiveness, social fairness and resilience (2020 & rev. 13237/20). <a href="https://op.europa.eu/en/publication-detail/-publication/08b9af27-3465-11eb-b27b-01aa75ed71a1/language-en">https://op.europa.eu/en/publication-detail/-publication/08b9af27-3465-11eb-b27b-01aa75ed71a1/language-en</a>

Cedefop. (November 30). Osnabrück Declaration on vocational education and training as an enabler of recovery and just transitions to digital and green economies: Agreed by the Ministers responsible for Vocational Education and Training of countries participating in the Copenhagen process:

<a href="https://www.cedefop.europa.eu/files/osnabrueck declaration eu2020.pdf">https://www.cedefop.europa.eu/files/osnabrueck declaration eu2020.pdf</a>

Cedefop. (2022). Microcredentials for labour market education and training: First look at mapping microcredentials in European labour-market-related education, training and learning: Take-up, characteristics and functions. Research paper







/ Cedefop: no 87. Publications Office of the European Union. https://www.cedefop.europa.eu/files/5587\_en.pdf https://doi.org/10.2801/351271

Cedefop. (June 2022). Are microcredentials becoming a big deal? Driven by changes in education and training and the labour market, microcredentials can support the provision and recognition of skills (Briefing Note). Thessaloniki. <a href="https://www.cedefop.europa.eu/en/press-releases/are-microcredentials-becoming-big-deal">https://www.cedefop.europa.eu/en/press-releases/are-microcredentials-becoming-big-deal</a>

ETUC / ETUCE. Joint ETUC-ETUCE position on Micro-credentials in VET and tertiary education: Adopted by ETUCE Bureau on 23 June, 2020. Adopted at the ETUC Executive Committee on 2 July, 2020. <a href="https://www.etuc.org/system/files/document/file2020-07/2020%2006">https://www.etuc.org/system/files/document/file2020-07/2020%2006</a> Joint%20ETUC-ETUCE%20position%20on%20MICRO-CREDENTIALS FINAL.pdf

European Commission. (December 2021). A European Approach to Micro-Credentials (THE EUROPEAN PILLAR OF SOCIAL RIGHTS ACTION PLAN). Brussels.

Federal Republic of Germany. (July 5). Contribution of the Federal Republic of Germany in the context of the public consultation by the European Commission on the initiative "A European approach to micro-credentials for lifelong learning and employability".

Official Journal of the European Union. (2022). Council Recommendation of 16 June 2022 on a European Approach to microcredentials for lifelong learning and employability.

https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022H0627(02)

Oliver, B. (September 2021). A conversation starter: Towards a common definition of micro-credentials: Draft preliminary report. <a href="https://unesdoc.unesco.org/ark:/48223/pf0000381668">https://unesdoc.unesco.org/ark:/48223/pf0000381668</a>







Shapiro Future, H., Andersen, T., & Nedergaard Larsen, K. (2020, May 26). Annex 1: A European Approach to Micro-Credentials.: Background Paper for the first Meeting of the Consultation Group on Micro-Credentials. Luxembourg: Publication Office of the European Union. https://education.ec.europa.eu/sites/default/files/document-library-docs/european-approach-micro-credentials-higher-education-consultation-group-output-annex-1.pdf; <a href="https://doi.org/10.2766/94725">https://doi.org/10.2766/94725</a>

### Making use of Micro-Credentials: Higher Education, Industry, VET

Ahsan, K., Akbar, S., Kam, B., & Abdulrahman, M. D.-A. (2023). Implementation of micro-credentials in higher education: A systematic literature review. Education and Information Technologies. Advance online publication. <a href="https://doi.org/10.1007/s10639-023-11739-z">https://doi.org/10.1007/s10639-023-11739-z</a>

Cirlan, E., & Loukkola, T. (September 2020). European project MICROBOL.: Micro-Credentials linked to the Bologna Key Commitments. Desk research report. <a href="https://microcredentials.eu/wp-content/uploads/sites/20/2020/09/MICROBOL-Desk-Research-Report.pdf">https://microcredentials.eu/wp-content/uploads/sites/20/2020/09/MICROBOL-Desk-Research-Report.pdf</a>

ECIU University. Paving the Road for the Micro-Credentials Movement: ECIU University White Paper on Micro Credentials. <a href="https://assets-global.website-files.com/551e54eb6a58b73c12c54a18/600e9e7dff949351b6937d73">https://assets-global.website-files.com/551e54eb6a58b73c12c54a18/600e9e7dff949351b6937d73</a> ECIU micro-credentials-paper.pdf

Fishman, B., Teasley, S., & Cederquist, S. (2018). Micro-Credentials as Evidence for College Readiness: Report of an NSF workshop. School of Information. <a href="https://deepblue.lib.umich.edu/bitstream/handle/2027.42/143851/Micro-Credentials%20In%20Admissions%20Report.pdf?sequence=3&isAllowed=y">https://deepblue.lib.umich.edu/bitstream/handle/2027.42/143851/Micro-Credentials%20In%20Admissions%20Report.pdf?sequence=3&isAllowed=y</a>







Casadesus, M., Huertas, E., & Edo, C. (2023). A European perspective on accrediting short learning programs: First experiences are out. Industry and Higher Education, 37(3), 433–442. <a href="https://doi.org/10.1177/09504222221132129">https://doi.org/10.1177/09504222221132129</a>

Flasdick, Julia, Mah, Dana-Kristin, & Rampelt, F. (August 202). Micro- und Micro-Degrees: Aktuelle Entwicklungen und Perspektiven aus der Praxis des KI-Campus (Diskussionspapier). Berlin. KI-Campus. <a href="https://doi.org/10.5281/zenodo.6860665">https://doi.org/10.5281/zenodo.6860665</a>

Henderikx, P., Ubachs, G., & Alessandra, A. (2022). Models and guidelines for the design and development of joint microcredential courses and microlearning units in higher education. Zenodo. <a href="https://doi.org/10.5281/ZENOD0.6552609">https://doi.org/10.5281/ZENOD0.6552609</a>

HRK Hochschulrektorenkonferenz. (2019). Micro-Degrees und Badges als Formate digitaler Zusatzqualifikationen: Empfehlung der 29. der HRK am 24. November 2020. Berlin/Bonn. <a href="https://doi.org/10.5281/ZENODO.3478510">https://doi.org/10.5281/ZENODO.3478510</a>

MacDonald, M. (2022, March 30). Are microcredentials the future of higher ed? <a href="https://www.universityaffairs.ca/features/feature-article/are-microcredentials-the-future-of-higher-ed/">https://www.universityaffairs.ca/features/feature-article/are-microcredentials-the-future-of-higher-ed/</a>

MacLochlainn, C., Mhichil, M. N. G., Wessels, O., Kiiskilä, P., Pirkkalainen, H., & Palcalin, M. ECIU University Micro-Credentials: A vision for European Learners, values, and priorities: Paper 3 ECIU Micro-Credential White Paper Series. <a href="https://assets-global.website-">https://assets-global.website-</a>

files.com/551e54eb6a58b73c12c54a18/62ab225477535859cb10972f Paper%203%20ECIU corrections.pdf

McGreal, R., & Olcott, D. (2022). A strategic reset: Micro-credentials for higher education leaders. Smart Learning Environments, 9(1), 1–23. <a href="https://doi.org/10.1186/s40561-022-00190-1">https://doi.org/10.1186/s40561-022-00190-1</a>







Orr, D., Pupinis, M., and Kirdulytė, G. Towards a European Approach to Micro Credentials: A Study of Practices and Commonalities in offering Micro Credentials in European Higher Education: Analytical Report. <a href="https://nesetweb.eu/wp-content/uploads/2020/12/NESET\_AR2-2020 Full-Report.pdf">https://nesetweb.eu/wp-content/uploads/2020/12/NESET\_AR2-2020 Full-Report.pdf</a>

Pirkkalainen, H., Sood, I., Padron Napoles, C., Kukkonen, A., & Camilleri, A. (2023). How might micro-credentials influence institutions and empower learners in higher education? Educational Research, 65(1), 40–63. https://doi.org/10.1080/00131881.2022.2157302

Pollard, V., & Vincent, A. (2022). Micro-credentials: A Postdigital Counternarrative. Postdigital Science and Education, 4(3), 843–859. https://doi.org/10.1007/s42438-022-00311-6

Prebil, M., & McCarthy, M. A. (September 2018). Building Better Degrees Using Industry Certifications: Lessons from the Field. <a href="https://d1y8sb8igg2f8e.cloudfront.net/documents/Building Better Degrees Using Industry Certifications 2018-09-17 130631.pdf">https://d1y8sb8igg2f8e.cloudfront.net/documents/Building Better Degrees Using Industry Certifications 2018-09-17 130631.pdf</a>

Sproston, D. GEDC Industry Forum Micro-Credentials Resources. <a href="https://uploads-ssl.webflow.com/5ec54bb563456e3846113415/62a208ceac5ef561028cc84d">https://uploads-ssl.webflow.com/5ec54bb563456e3846113415/62a208ceac5ef561028cc84d</a> GEDC-Industry-Forum-2022-Resources-on-Micro-Credentials.pdf







#### **Country specific access to Micro-Credentials**

#### **Australia**

Australian Government. Department of Education, Skills and Employment. (November 2021). *National Microcredentials Framework*. <a href="https://www.education.gov.au/higher-education-publications/resources/national-microcredentials-framework">https://www.education.gov.au/higher-education-publications/resources/national-microcredentials-framework</a>

Beverly, O. (August 2019). Making micro-credentials work for learners, employers and providers. <a href="https://dteach.deakin.edu.au/wp-content/uploads/sites/103/2019/08/Making-micro-credentials-work-Oliver-Deakin-2019-full-report.pdf">https://dteach.deakin.edu.au/wp-content/uploads/sites/103/2019/08/Making-micro-credentials-work-Oliver-Deakin-2019-full-report.pdf</a>

Desmarchelier, R., & Cary, L. J. (2022). Toward just and equitable micro-credentials: An Australian perspective. International Journal of Educational Technology in Higher Education, 19(1), 25. <a href="https://doi.org/10.1186/s41239-022-00332-y">https://doi.org/10.1186/s41239-022-00332-y</a>

Jones, A. (2018, August). Vocational education for the twenty-first century. The University of Melbourne, 1–11. <a href="https://web.archive.org/web/20220305123155/https://melbourne-cshe.unimelb.edu.au/data/assets/pdf">https://web.archive.org/web/20220305123155/https://melbourne-cshe.unimelb.edu.au/data/assets/pdf</a> file/0011/2845775/Final-Anne-Jones-paper1.pdf

James, R., French, S., & Kelly, P. (February 2017). Visions for Australian Tertiary Education. Melbourne. <a href="https://findanexpert.unimelb.edu.au/scholarlywork/1214830-futures-for-australian-tertiary-education--developing-an-integrated--coherent-policy-vision">https://findanexpert.unimelb.edu.au/scholarlywork/1214830-futures-for-australian-tertiary-education--developing-an-integrated--coherent-policy-vision</a>

NCVER. (2021). Transcript of The role of micro-credentials in VET. A talk between Bryan Palmer, Simon Walker and Steve Davis: Podcast: Voscational Voices, Seaso 6, Episode 3. Vocational Voices: Season 6, Episode 3. <a href="https://www.ncver.edu.au/news-and-events/podcasts/vocational-voices-podcast/transcripts/transcript-of-the-role-of-micro-credentials">https://www.ncver.edu.au/news-and-events/podcasts/vocational-voices-podcast/transcripts/transcript-of-the-role-of-micro-credentials</a>







On Target Work Skills. (2022). What are microcredentials? <a href="https://ontargetworkskills.com/2022/04/07/what-are-microcredentials/">https://ontargetworkskills.com/2022/04/07/what-are-microcredentials/</a>

Palmer, B. (2021). An analysis of "micro credentials" in VET (NCVER Research Report). Commonwealth of Australia. <a href="https://www.ncver.edu.au/">https://www.ncver.edu.au/</a> data/assets/pdf file/0041/9666257/An-analysis-of-micro-credentials-in-VET.pdf

Burningglas Technologies. (October 2017). The Narrow Ladder: The Value of Industry Certifications in the Job Market. <a href="https://www.burning-glass.com/wp-content/uploads/BurningGlass-certifications-2017.pdf">https://www.burning-glass.com/wp-content/uploads/BurningGlass-certifications-2017.pdf</a>

Chakroun, B., & Keevy, J. (2018). Digital credentialing: implications for the recognition of learning across borders. Paris. <a href="https://doi.org/10.54675/SAB08911">https://doi.org/10.54675/SAB08911</a>

#### Canada

Academia Group. Labour Education Applied Research North. (2021, March 5). *Micro-Credentialing in Northern Alberta. Final Report.* https://nadc.ca/media/17900/learn-micro-credentials-final-mar-5-21.pdf

Bigelow, A., Booth, C., Brockerhoff-MacDonald, B., Cormier, D., Dinsmore, C., Grey, S., Harrison, L., Hobbs, A., Lee, S., Maher, P., McArthur, F., Mitchell.Ashley, T., Mosley, J., Papple, J., Porter, J., Presant, D., Sommer, J., & Zahedi, E. *eCampus Ontario's Micro-credential Toolkit*. <a href="https://ecampusontario.pressbooks.pub/microcredentialtoolkit/front-matter/welcome-to-the-toolkit/">https://ecampusontario.pressbooks.pub/microcredentialtoolkit/front-matter/welcome-to-the-toolkit/</a>

Gooch, P. (Februar 20, 2020). Micro-certifications: Policy and Regulatory Context in Ontario. Reserach Report. eCampus Ontario. <a href="https://www.ecampusontario.ca/wp-content/uploads/2020/03/microcert-policy-regulatory-context-en-1.pdf">https://www.ecampusontario.ca/wp-content/uploads/2020/03/microcert-policy-regulatory-context-en-1.pdf</a>







Peppler-Beechey, L., & Weingarten, H. (2021). Micro-credentials in the Applied Health Sciences: A Cautionary Tale about Quality: A Report from the School of Applied Health Sciences at the Michener Institute of Education at UHN for eCampus Ontario. <a href="https://michener.ca/wp-content/uploads/2021/04/Micro-credentials-in-the-Applied-Health-Sciences.pdf">https://michener.ca/wp-content/uploads/2021/04/Micro-credentials-in-the-Applied-Health-Sciences.pdf</a>

Pichette, J., Brumwell, S., Rizk, J., & Han, S. (2021). Making Sense of Microcredentials. Toronto. <a href="https://heqco.ca/wp-content/uploads/2021/05/Formatted Microcredentials FINAL1.pdf">https://heqco.ca/wp-content/uploads/2021/05/Formatted Microcredentials FINAL1.pdf</a>

#### **New Zealand**

New Zealand Qualification Authority (2022, September). Improving relevance and responsiveness: Aotearoa New Zealand's early micro-credentials journey. NZQA (Insights paper). <a href="https://www2.nzqa.govt.nz/assets/About-us/Publications/Insights-papers/Micro-credentials/Aotearoa-New-Zealands-early-micro-credentials-journey.pdf">https://www2.nzqa.govt.nz/assets/About-us/Publications/Insights-papers/Micro-credentials/Aotearoa-New-Zealands-early-micro-credentials-journey.pdf</a>

New Zealand Qualification Authority (2022). Aotearoa New Zealand's rationale for micro-credentials. NZQA(September) (Insights Paper). <a href="https://www2.nzqa.govt.nz/about-us/publications/insights-papers/improving-relevance-and-responsiveness-2/">https://www2.nzqa.govt.nz/about-us/publications/insights-papers/improving-relevance-and-responsiveness-2/</a>

NZQA. Guidelines for micro-credential listing, approval, and accreditation - interim draft for feedback - February 2023. https://www2.nzqa.govt.nz/assets/Tertiary/Micro-credentials/Guidelines-for-Micro-credentials-interim-draft-Feb-2023-v2.pdf

NZQA. (2023, July 21). Register of NZQA-approved Micro-Credentials.

https://www.nzqa.govt.nz/nzqf/search/microcredentials.do? gl=1\*vrny55\* ga\*MzcxMDk3NDM1LjE20Dk5NDEyMTc.\* ga TFQQ681L2E\*MTY40Tk0MTIxNy4xLjEuMTY40Tk0MTUzMC4wLjAuMA.







#### **USA**

Bailey, T., & Belfield, C. (November 2017). *Stackable Credentials: Do They Have Labor Market Value?* (CCRC Working Paper No. 97). New York. <a href="https://doi.org/10.7916/D8446038">https://doi.org/10.7916/D8446038</a>

Bailey, T., & Belfield, C. R. (April 2017). *Stackable Credentials: Awards for the Future?* (CCRC Working Paper No. 92). CCRC. https://doi.org/10.7916/D82N57KM

proctocy. (January 2018). Micro-Credentialing Task Force: Report and Recommendations. New York. SUNY. <a href="https://system.suny.edu/media/suny/content-assets/documents/academic-affairs/Micro-Credentialing-TaskForce-Report.pdf">https://system.suny.edu/media/suny/content-assets/documents/academic-affairs/Micro-Credentialing-TaskForce-Report.pdf</a>

#### **Europe**

Noack, M. (2020). Teilqualifikationen als deutscher Weg: Kompetenzorientierung in Europa und was Deutschland daraus macht. Weiter Bilden (2), 16–19. <a href="https://doi.org/10.3278/WBDIE2002W006">https://doi.org/10.3278/WBDIE2002W006</a>

Resei, C., Friedl, C., Staubitz, T., & Rohloff, T. (2019). Micro-Credentials in EU and Global: CORSHIP Result 1.1c. <a href="https://www.corship.eu/wp-content/uploads/2019/07/Corship-R1.1c micro-credentials.pdf">https://www.corship.eu/wp-content/uploads/2019/07/Corship-R1.1c micro-credentials.pdf</a>

Hedinger, F. (2023). Micro-Credentials: Aktuelle Entwicklungen in der Schweiz und auf internationaler Ebene: Grundlagenbericht. <a href="https://alice.ch/app/uploads/2023/02/Micro-Credentials-aktuelle-Entwicklungen.pdf">https://alice.ch/app/uploads/2023/02/Micro-Credentials-aktuelle-Entwicklungen.pdf</a>







#### Definitions, Examples, Guidelines, Podcasts, Websites on Micro-Credentials

Alias, A. K. (2023, July 20). *Designing a Micro-credential Program*. <a href="https://sites.google.com/view/designingamicro-credentialprog/home?authuser=0">https://sites.google.com/view/designingamicro-credentialprog/home?authuser=0</a>

Hudak, R., & Camilleri, A. (2018). The Micro-Credential Users' Guide. <a href="https://microcredentials.eu/wp-content/uploads/sites/20/2021/05/D3-3-MicroHE-Users-Guide.pdf">https://microcredentials.eu/wp-content/uploads/sites/20/2021/05/D3-3-MicroHE-Users-Guide.pdf</a>

Iniesto, F., Ferguson, R., Weller, M., Farrow, R., & Pitt, R. (2022). Introducing a reflective framework for the assessment and recognition of microcredentials. Open Technology in Education, Society and Scholarship Association (OTESSA) Journal, 1–22. <a href="https://doi.org/10.18357/otessaj.2022.2.2.37">https://doi.org/10.18357/otessaj.2022.2.2.37</a>

FutureLearn. (2023). What are microcredentials? Explore our professional qualifications. <a href="https://www.futurelearn.com/info/blog/what-are-microcredentials">https://www.futurelearn.com/info/blog/what-are-microcredentials</a>

Knowledge Innovation Centre. (2022). *Guide to Design, Issue and Recognise Micro Credentials*. Torino. ETF. <a href="https://www.etf.europa.eu/sites/default/files/2023-05/Micro-Credential%20Guidelines%20Final%20Delivery.pdf">https://www.etf.europa.eu/sites/default/files/2023-05/Micro-Credential%20Guidelines%20Final%20Delivery.pdf</a>

Student Success. (2023, July 20). List of Micro-Credentials - University of Maine System. <a href="https://www.maine.edu/student-success/micro-credentials/list-of-micro-credentials/">https://www.maine.edu/student-success/micro-credentials/</a>

Student Success. (2023, July 20). Videos - University of Maine System. <a href="https://www.maine.edu/student-success/micro-credentials/videos/">https://www.maine.edu/student-success/micro-credentials/videos/</a>







Commonwealth of Learning. *Designing and Implementing Micro-Credentials: A Guide for Practitioners: A topical start up guide to distance education practice and delivery* (Knowledge Series). <a href="https://www.che.ac.ls/wp-content/uploads/2019/09/14-">https://www.che.ac.ls/wp-content/uploads/2019/09/14-</a>
<a href="Designing-and-Implementing-Micro-Credentials-A-Guide-for-Practitioners.pdf">https://www.che.ac.ls/wp-content/uploads/2019/09/14-</a>
<a href="Designing-and-Implementing-Micro-Credentials-A-Guide-for-Practitioners.pdf">Designing-and-Implementing-Micro-Credentials-A-Guide-for-Practitioners.pdf</a>

Digital Promise. (2022, October 12). *Micro-credentials – Digital Promise*. <a href="https://digitalpromise.org/initiative/educator-micro-credentials/">https://digitalpromise.org/initiative/educator-micro-credentials/</a>

Masterson, V. (April 2022). Micro-credentials – what they are and how they can help you. <a href="https://www.weforum.org/agenda/2022/04/get-ahead-with-micro-credentials/">https://www.weforum.org/agenda/2022/04/get-ahead-with-micro-credentials/</a>

Rossiter, D., & Tynan, B. (2019). Designing and Implementing Micro-Credentials: A Guide for Practitioners: A Topical Start-up Guide to Distance Education Practice and Delivery (Knowledge Series). <a href="https://oasis.col.org/colserver/api/core/bitstreams/770ff842-9a5e-424b-a253-0757fa539086/content">https://oasis.col.org/colserver/api/core/bitstreams/770ff842-9a5e-424b-a253-0757fa539086/content</a>

eCampus Ontario. Micro-Certification Principles and Framework. <a href="https://www.ecampusontario.ca/wp-content/uploads/2020/02/2020-02-03-microcertifications-en.pdf">https://www.ecampusontario.ca/wp-content/uploads/2020/02/2020-02-03-microcertifications-en.pdf</a>

Teachonline. (2020, November 30). Micro-Credentials and the Skills Agenda. <a href="https://teachonline.ca/tools-trends/micro-credentials-and-skills-agenda">https://teachonline.ca/tools-trends/micro-credentials-and-skills-agenda</a>

Thawesaengskulthai, N., Singh, B. P., Chemnasiri, W., & Borsano, P. (2022, March 7). Three steps to developing useful microcredentials: The key considerations for developing an effective microcredentials portfolio that meets the needs of diverse learners and employers. <a href="https://www.timeshighereducation.com/campus/three-steps-developing-useful-microcredentials">https://www.timeshighereducation.com/campus/three-steps-developing-useful-microcredentials</a>







JIPE (Ed.). (2021). Special Issue: Innovation in Micro-Certification [Special issue]. *Journal of Innovation in Polytechnic Education* (Volume 3A), 48. Toronto. Humber Press. <a href="https://jipe.ca/index.php/jipe/issue/view/4">https://jipe.ca/index.php/jipe/issue/view/4</a>

#### Some critical reflexions on Micro Credentials

Boud, D., & Jorre de St Jorre, Trina (2023). The move to micro-credentials exposes the deficiencies of existing credentials: Provocation. *The Journal of Teaching and Learning for Graduate Emloyability*, *12*(1), 18–20. https://doi.org/10.21153/jtlge2021vol12no1art1023

Brown, M., Mhichil, M. N. G., Beirne, E., & MacLochlainn, C. (2021). The Global Micro-Credential Landscape: Charting a New Credential Ecology for Lifelong Learning. *Journal of Learning for Development JL4D*, 8(2), 228–254. https://files.eric.ed.gov/fulltext/EJ1314205.pdf

Brown, Mark, Mhixhil, Mairead Nic Giolla. *Unboxing Micro-credentials: An Inside, Upside and Downside View: Manuscript*. <a href="https://www.dcu.ie/sites/default/files/inline-files/unboxing-micro-credentials-2021.pdf">https://www.dcu.ie/sites/default/files/inline-files/unboxing-micro-credentials-2021.pdf</a>

Kato, S., & Galan-Muros. (2020). The Emergence of Alternative Credentials, *OECD Education Working Papers*. https://www.oecd-ilibrary.org/docserver/b741f39e-en.pdf?expires=1689847576&id=id&accname=guest&checksum=98E948EF75BC54BF64BBFEA08ED54C0A https://doi.org/10.1787/b741f39e-en

Ralston, S. J. (2021). Higher Education's Microcredentialing Craze: a Postdigital-Deweyan Critique. *Postdigital Science and Education*, *3*(1), 83–101. <a href="https://doi.org/10.1007/s42438-020-00121-8">https://doi.org/10.1007/s42438-020-00121-8</a>







Thi Ngoc Ha, N., Spittle, M., Watt, A., & van Dyke, N. (2022). A systematic literature review of micro-credentials in higher education: a non-zero-sum game. *Higher Education Research & Development*, 1–22. https://doi.org/10.1080/07294360.2022.2146061

Thomas Bailey and Clive R. Belfield. (November 2017). *Stackable Credentials: Do They Have Labor Market Value?* (CCRC Working Paper No. 97). <a href="https://ccrc.tc.columbia.edu/media/k2/attachments/stackable-credentials-do-they-have-labor-market-value.pdf">https://ccrc.tc.columbia.edu/media/k2/attachments/stackable-credentials-do-they-have-labor-market-value.pdf</a>

Varadarajan, S., Koh, J. H. L., & Daniel, B. K. (2023). A systematic review of the opportunities and challenges of microcredentials for multiple stakeholders: Learners, employers, higher education institutions and government. *International Journal of Educational Technology in Higher Education*, 20(1), 13. <a href="https://doi.org/10.1186/s41239-023-00381-x">https://doi.org/10.1186/s41239-023-00381-x</a>

Wheelahan, L., & Moodie, G. (2021). Analysing micro-credentials in higher education: a Bernsteinian analysis. *Journal of Curriculum Studies*, 53(2), 212–228. https://doi.org/10.1080/00220272.2021.1887358







#### Members of the BEM-Consortium

- 1. SÄCHSISCHE BILDUNGSGESELLSCHAFT FÜR UMWELTSCHUTZ UND CHEMIEBERUFE DRESDEN MBH SBG (SBG), Germany (coordinator)
- 2. BUNDESINSTITUT FÜR BERUFSBILDUNG (BIBB), Germany
- 3. EUROMASC AS (EUROMASC), Norway
- 4. NTI-MMM AS (NTIM), Norway
- 5. TRAINING AND METHODICAL CENTER OF VOCATIONAL EDUCATION ANDTRAINING IN THE DONETSK REGION OF UKRAINE (NMC), Ukraine,
- 6. SOCIETY FOR TRADE AND SERVICES PRODENT BP DOOEL SKOPJE (PRODENT), Republic of North Macedonia
- 7. SKILLS AGENCY (SAG), Georgia
- 8. NATIONAL QUALIFICATIONS AGENCY (NQA), Ukraine
- 9. DNIPRORUDNEN PROFESSIONAL LYCEUM STATE EDUCATIONAL INSTITUTION (DPL), Ukraine
- 10. ROKYTNE PROFESSIONAL LYCEUM (RPL), Ukraine
- 11. ELECTROTECHNICAL SCHOOL NIKOLA TESLA (ETS), Serbia
- 12. CENTAR ZA STRUCNO OBRAZOVANIE I OBUKA (VETC), Republic of North Macedonia
- 13. SOCIETY FOR INTERNET EDUCATION BRAINSTER CBC KOLEKTIV DOO Skopje (BCC), Republic of North Macedonia
- 14. JU STRUCNE SKOLE, VUKADIN VUKADINOVIC (JUSV), Montenegro
- 15. JU SREDNJA STRUCNA SKOLA SPASOJE RASPOPOVIC PODGORICA (SVS), Montenegro
- 16. LORI REGIONAL STATE COLLEGE STATE NON-PROFIT ORGANIZATION (LRS), Armenia
- 17. NATIONAL CENTRE FOR VOCATIONAL EDUCATION AND TRAINING DEVELOPMENT (NCVETD), Armenia



