Macrothink Institute™

Journal of Education and Training
ISSN 2330-9709
2026, Vol. 13, No. 1

The Role of Microcredentials in Promoting Lifelong Learning

Ejuchegahi Anthony Angwaomaodoko

Independent Researcher

ORCiD: 0009-0001-6300-2017

Email: ejuchegahi.angwaomaodoko@gmail.com

Received: July 21, 2025 Accepted: August 23, 2025 Published: September 26, 2025

doi:10.5296/jet.v13i1.23027 URL: https://doi.org/10.5296/jet.v13i1.23027

Abstract

In response to the growing demand for continuous learning which ensures that both young graduates and professionals are updated with relevant skills that guarantee their survival in a fast-paced changing world, microcredentials and digital badges have emerged as pivotal tools for promoting lifelong learning. This paper explores how these tools can contribute to bridging the growing gap between what formal education offers and what the job market demands. It draws on recent studies and international practices to show that microcredentials offer real opportunities for working professionals, recent graduates, and underrepresented groups, to reskill and upskill more efficiently. However, challenges remain as many people still do not know about microcredentials, and concerns about quality, access to technology, and the risk of fragmented learning slow down their wider adoption. By examining policies from countries like Australia, New Zealand, and France, this study highlights how stronger frameworks can build trust and boost uptake. In the end, microcredentials will probably not replace traditional degrees, but they can and in some countries already do offer a valuable path for people to stay relevant, grow professionally, and learn continuously in a world that never stops changing.

Keywords: microcredentials, digital badge, lifelong learning, skill gap, traditional education

1. Introduction

In today's rapidly evolving world, the demand for lifelong learning has become increasingly urgent to enable society to keep pace with skills and knowledge requirements which are ever-changing (Bideau & Kearns, 2022). Lifelong learning transcends the boundaries of formal education and age, encompassing the entire span of an individual's life. It is driven by both personal and professional development goals. The benefits of lifelong learning are significant,

including enhanced employability and continuous professional relevance. However, challenges such as time constraints, financial limitations, and limited access to traditional educational systems continue to hinder its widespread adoption (Gamage & Dehideniya, 2025).

Microcredentials and digital badges have emerged as powerful educational tools in the promotion of lifelong learning in the 21st century. Originating from the open education resources (OER) movement championed by UNESCO in 2002, microcredentials offer flexible, skill-oriented learning opportunities (Woods & Woods, 2023). These short courses complement traditional degree programs and are designed to upskill or reskill learners. Digital badges serve as verifiable proof of acquired competencies, enabling learners to showcase their achievements. Galindo et al. (2024) defines digital badges as digital tools for sharing and displaying learner accomplishments.

Despite their advantages, the adoption of microcredentials remains limited. This may be due to their relative novelty and low levels of global awareness and acceptance. The role of microcredentials in promoting lifelong learning has yet to be fully understood bearing in mind that the concept is relatively new. This study, therefore, explores the role of microcredentials and digital badges in promoting lifelong learning.

2. Lifelong Learning

Lifelong learning ensures individuals are not confined to a static skill set. It empowers them to pursue knowledge motivated by curiosity and the desire for continuous improvement. Although the concept dates back to centuries ago, it has gained renewed importance due to the fast-paced, digital nature of contemporary society. In the information age, continuous learning is essential for maintaining relevance, highlighting the need for consistent upskilling and reskilling.

The culture of lifelong learning is crucial in bridging the gap between traditional education and the demands of modern industry. "A robust culture of lifelong learning is crucial to ensure that individuals acquire the knowledge, skills, and competencies necessary to succeed in society, thrive in the job market, and excel in their personal lives" (Gamage & Dehideniya, 2025, p. 11). Lifelong learning provides professionals with a competitive edge and the opportunity to adapt or shift career paths in response to evolving market demands. According to Manyika et al (2017), between 75 million and 375 million workers globally could change occupational categories by 2030, representing 3% to 14% of the global workforce. Bideau and Kearns (2022) attribute this projection to the rapid evolution of job roles, many of which are yet to be created, thus reinforcing the need for continuous learning.

Beyond professional advancement, lifelong learning contributes to personal development and cognitive well-being. Recognizing its value, many countries have started to align their education systems with lifelong learning principles. For instance, Malaysia's Education Blueprint (2015–2025) emphasizes lifelong learning and includes significant investments in upskilling and reskilling initiatives (Ahmat et al., 2021).

Lifelong learning is not merely a personal enrichment strategy, but is also a critical necessity in today's fast-paced and digitally driven world. It fosters adaptability, resilience, and continuous professional relevance by enabling individuals to respond effectively to evolving

societal and economic demands. As industries transform and new job roles emerge, the ability to learn, unlearn, and relearn becomes vital. Therefore, individuals are expected to cultivate a culture of lifelong learning to ensure they remained relevant in a changing world.

3. Microcredentials

Microcredentials and digital badges are increasingly recognized as flexible tools for upskilling, reskilling, and supporting lifelong learning. One of the biggest setbacks of Microcredentials is the lack of consensus on a universal definition of this concept, with several scholars and policy makers giving their own individual definitions of it, which when scrutinized align with their particular objectives (Beverley, 2022). The OECD (2024) defines microcredentials as the recognition of a specific skill through well-structured learning activities validated by assessment. Milligan and Kennedy (2017) also gave a similar definition of microcredentials as a "compact and flexible alternative to traditional diplomas or certificates. They validate specific skills or competencies through certifications, nanodegrees, micro-masters, digital badges, and professional memberships" (Gamage & Dehideniya, 2025, p. 3).

Microcredentials are short duration courses tailored to meet the demands of the modern workforce, and so are ideal for lifelong learning recorded by digital badges accorded to recipients upon completion of courses. The surge in microcredential use since 2020 can be attributed to shifts in education resulting from the global pandemic (Gamage & Dehideniya, 2025). Popular platforms include Coursera, Udacity Nanodegree, edX, IBM Skills Academy, and Google Career Certificates. These platforms offer cost-effective, accessible, and flexible learning opportunities (Horton, 2020).

When traditional universities have recognized the value of microcredentials, many have integrated them into their programs. Notable examples include Harvard University, Griffith University, and Universiti Teknologi Malaysia (McGreal & Olcott, 2022). Microcredentials then complement formal education by providing targeted learning opportunities that support lifelong learning and enhance workforce readiness in an increasingly dynamic and skills-driven global economy. Therefore, a better framework should be inculcated into microcredentials to ensure their effective and comprehensive delivery of worthwhile lifelong education.

3.1 Benefits of Microcredentials

The potential to improve lifelong learning has contributed to the rapid rise in the prominence of microcredentialing. The benefits of microcredentials and of digital badges may well be due to the fact that these courses are specifically designed with the aim of enhancing the skill or competence base of individuals' skills that are currently in demand in industries and the economic market; such courses are usually of short duration, and targeted purposefully towards augmenting particular skills. Thus, studying microcredentials increase the competitive edge of established employees, and reduce career mismatches, as well as further improving the employability of young graduates (Woods & Woods, 2023).

The flexible nature of these programs further ensures that workers can adequately

accommodate microcredential skill development within their congested time schedules, while also taking into consideration that working professionals who may not be able to commit to traditional degree programs due to their lengthy duration (minimum of two years for completion of most of the programs), are able to take advantages of microcredentials and digital badges which can be completed within a shorter duration. As such, they are relatively cheaper when compared to the traditional education (Gamage & Dehideniya, 2025). Moreover, the inclusive nature of microcredentials can accommodate the learning needs of diverse learners without their age or gender posing any restriction on them (Bideau & Kearns, 2022). For instance, women nursing children can acquire skills despite the constraints of taking care of their children.

3.2 Challenges of Microcredentials

Microcredentials in lifelong learning has been shown over the years to have several benefits; however, some challenges hamper their success; these include:

3.2.1 Reputation and Credibility of Microcredential Programs

One of the major challenges of microcredentials is the natural lack of trust from both employers and learners, which has limited the recognition of these programs. These issues of trust have led to an increased demand for quality assurance of the credentials, and the providers of these credentials, stemming from the fact that majority of these credentials fall within the premise of informal education. As such, they are not adequately regulated to ensure that they meet up with established minimum requirements or standards, with different microcredential providers operating on a range of different standards (Beirne et al., 2020; Oliver, 2020).

Addressing the need for national or international quality assurance of microcredential programs does not only protect learners from the possibility of accessing poor services from below-standard microcredential bodies but also goes a long way establishing the trust of employers for these programs. However, only a few European countries have regulatory mechanism put in place for microcredential bodies, and even the effectiveness of some of the mechanisms put in place might not be sufficient enough to instil a higher level of confidence (OECD, 2024). Cedefop (2022) asserted that accredited programs attract a high level of trust from employers, which could also be one of the reasons that a professional who emerged from the traditional educational system might have better opportunities for career progression than a skilled worker who merely holds one or more microcredential badge. Therefore, microcredential programs need to be regularly monitored to ensure that they better meet both the demands and accredited quality needed in the labour market.

3.2.2 Insufficient Awareness of Microcredential Programs

The enhanced adoption of microcredentials has been limited by insufficient awareness. A survey conducted by Cedefob (2022) reveals that almost 60% of respondent claimed to be unfamiliar with microcredentials, while the number of unemployed that were not aware of microcredentials stood at 70%. OECD (2024) noted the lack of familiarity for microcredentials could be due to the fragmented advertisement of microcredentials on

different platforms, with several countries unable to centralise microcredential market places, thus limiting the options available. However, countries such as Australia, Ireland and Canada all have a centralised system to access microcredential programs, with majority of these programs offered online; consequently, there is high accessibility to microcredentials within these countries (Peters et al., 2025).

3.2.3 Technological Limitations

Microcredential programs are mostly undertaken online. As such, to effectively learn on a microcredential platform, the individual should have adequate digital or technological literacy for easy navigation within the online space (OECD, 2024). The issue of technological literacy has had profound impact on lifelong learning, as the use of technology may complicate the integration of microcredentials into adult education (OECD, 2024). Moreover, implementing microcredentials often requires a significant investment in both acquiring and maintaining the necessary technology (Chung et al., 2020), while also taking into consideration that the use and sharing of digital badges are dependent on having a functioning network and database.

3.2.4 Fragmented Learning

Despite microcredentials offering modular learning through short-duration courses, their benefit also comes with challenges. When not properly managed, microcredentials can leave learners at a disadvantage due to the fragmented knowledge of courses learned in isolation. Mitchell et al. (2025) expressed a similar concern, noting that accumulating microcredentials in isolation can lead to disjointed understanding, without a cohesive grasp of broader concepts.

3.3 Role of Microcredentials in Lifelong Learning

As already stated, the skills gap between academic qualifications and workplace demands is a growing concern, as the skill possessed by some graduates are not adequately meeting the demands in workplaces. To amplify the issues presented by skills gaps, Gauthier (2020) carried out a study to obtain feedback from 22 professional and industrial head of diverse sectors. The result of his study indicates that these professionals are increasingly dissatisfied with the skills possessed by their employees, which is a pointer to the widening skill gap. One of the strategies that employers are beginning to consider, in an attempt to reduce this gap, is promoting employment based on competence, which also known as a skill-first approach to hiring (OECD, 2024). The use of this appointment strategy by employers was evident in a report by LinkedIn in the United State, which stated that only one in four job postings on their platform in 2022 did not require a degree (LinkedIn, 2023). Although the percentage (25%) might not seem very high, it represents 15% increase from the percentage recorded in 2022 which suggests that more employers are putting skills on the forefront of engagement of workers.

One solution to the issue of skill gap is lifelong learning is the increasing concentration on the need for creativity and critical thinking skills (Bughin et al., 2018). Jobs are becoming more flexible and the need for flexibility in the labour market is more frequently transferred to the

employees rather than the employers (Clarke & Patrickson, 2008). The consequence is the stirring up of an increase in the prevalence of casual-contracts or temporary positions and as without a safety net for employees. Thus any employee with a static skill set could be easily disposed of (Bohle, 2016; Harteis, 2018). Therefore, to survive the competitive nature of the labour market, individuals must always continue to learn new skills, gain mastery and ensure that they are always updated on contemporary work skills.

Lifelong learning does not only ensure that employees obtain the skills that guarantee their survival within the labour market but also supports the employability of new graduates (Nimmi et al., 2021). Tran (2018) suggests that many graduates from higher education are failing to meet the demand of the skill set required by their employers, hence placing the need for continuous learning to augment skill deficit. Graduates require a shift to skill first or lifelong learning mind-set to increase their employment opportunities (OECD, 2024). In response to the need for continuous learning, microcredentials offer a platform for lifelong skill acquisition.

Microcredentials are gaining prominence due to the fact that they represent an active option to bridge skills gaps and offers an avenue for lifelong learning. “Microcredentials are short, targeted learning activities that offer a way for learners to retrain and up-skill quickly and efficiently” (OECD, 2024, p. 28). Microcredentials have not yet come to replacing the traditional education but serve as a compliment to it (Gamage & Dehideniya, 2025), ensuring that skill gap within the labour market is reduced, hence, granting both graduates and professionals a competitive edge to thrive in an evolving market.

The role of well-designed microcredentials is embedded in the effectiveness and efficiency with which they are able to carry out their role in lifelong learning. OECD (2024) noted that the breakdown of microcredentials into modules has ensured their flexibility towards meeting learners’ specific knowledge deficiencies, and further addresses skills gaps in a short duration which is an advantage that sets them apart from the traditional educational setting. More so, microcredentials have also helped to boost the employability of women, as they serve as a more viable and attractive option to continuous learning and re-skilling which would help improve workforce diversity (OECD, 2024).

Conclusively, microcredentials are beginning to take root in ensuring professional development and lifelong learning, with the courses broken down in a manner that makes them easily understandable. Thus they can ensure that individuals are equipped with information and skills that not only enhance their relevance at their place of work but also enables their transition to better job opportunities. More so, microcredentials transcend beyond the employment stage - which is the active stage of an individual’s life - to the retirement phase, as they can keep the mind active and are always updated with the relevant knowledge necessary to live a healthy lifestyle.

3.4 Policy on Microcredentials

Microcredential policies provide a reliable framework for the development, recognition, and the use of microcredentials across education and employment systems. These policies help

in standardizing microcredentials, enhancing their recognition and mode of operation, and enabling the alignment of an individual's skills with the needs of the labour market. Regulating the mode of operation of microcredential is vital towards the standardization of microcredentials, despite claims that microcredentials fall within non-formal education and as such should not be over-regulated (OECD, 2024). Table 1 below states a number of Microcredential policies that are operational across several nations.

Table 1. Microcredential Policies Operational in some Nations

Countries	Policies	Source
New Zealand	Micro credentials undergo the process of accreditation which is done strictly under the New Zealand Qualifications Authority (NZQA), so as to assure, the standard, recognition and quality of microcredentials to learners.	OECD, 2024
Slovak Republic	Microcredentials undergo strict accreditation to ensure that nationally set standards are met. In 2021, a bid of the Slovakian Authority set out to give microcredentials formal recognition, by developing a new strategy for lifelong learning and counselling which was aimed at including accredited qualifications into the National Qualifications Framework (NQF).	Cedefop, 2023
France	Quality labels are issued to microcredentials assuring that they meet up with national quality standards. These quality labels are issued for a duration of three years. Certified evaluators, accredited by the French Accreditation Committee, are tasked with awarding the quality labels through external quality assurance processes.	OECD, 2024
Australia	Australia has developed a National Microcredentials Framework outlining minimum standards, including both essential and recommended criteria, to guide providers in program design.	Department of Education, Skills and Employment, 2021
Poland	A pilot project known as Odznaka+ (Badge+), was led by the Educational Research Institute (IBE). The project is aimed at checking and verifying the quality of microcredentials and the providers who issue them, before they are added to the register. The platform also allows the sharing of digital portfolios.	Cedefop, 2023

4. Conclusion

In today's world, where industries are constantly evolving and new technologies keep emerging, it is no longer enough to rely solely on the education we received years ago. The way thar we learn is changing rapidly. Lifelong learning has become not just important, but essential in ensuring that the skill set possessed by individuals is still adequately enhanced to meet the demands of the labour market. Microcredentials and digital badges offer a practical and effective way forward. They are innovative solutions that address critical challenges associated with traditional education, such as rigidity, cost, and limited accessibility. Furthermore, they provide a platform enabling workers to learn new skills in focused, flexible ways that fit into their daily lives while they also juggling work, family, or other responsibilities.

Ultimately, microcredentials should not be seen as a replacement for traditional education but rather as a complementary tool that supports continuous personal and professional development. As more stakeholders (governments, educational institutions, and industries) embrace the potential of microcredentials, it is imperative to develop inclusive, scalable, and sustainable systems that ensure equitable access and lifelong learning opportunities of assured quality for all. The future of education lies in recognizing learning as a lifelong journey and microcredentials represent a key pathway on that road.

Acknowledgments

Not applicable.

Authors contributions

Not applicable.

Funding

Not applicable.

Competing interests

Not applicable.

Informed consent

Obtained.

Ethics approval

The Publication Ethics Committee of the Macrothink Institute.

The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

Not commissioned; externally double-blind peer reviewed.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

References

Ahmat, N. H. C., Bashir, M. A., Razali, A. R., & Kasolang, S. (2021). Microcredentials in Higher education institutions: Challenges and Opportunities. *Asian Journal of University Education, 17*(3), 281-290. https://doi.org/10.24191/ajue.v17i3.14505

Beirne, E., Nic Giolla Mhichíl, M., & Brown, M. (2020). Microcredentials: An Evolving Ecosystem: Insights paper, Dublin City University.

Beverley, O. (2022). Towards a common definition of microcredentials. UNESCO. Available online: https://unesdoc.unesco.org/ark:/ 48223/pf0000381668 (accessed on 21 April 2025).

Bideau, Y., & Kearns, T. (2022). A European approach to microcredentials for lifelong learning and employability. *Journal of European CME*, *11*(1). https://doi.org/10.1080/21614083.2022.2147288

Bohle, P. (2016). "Work-life conflict in 'flexible work': precariousness, variable hours and related forms of work organization", in Iskra-golec, I., Barnes-Farrell, J. and Bohle, P. (Eds), Social and Family Issues in Shift Work and Non Standard Working Hours, Springer. https://doi.org/10.1007/978-3-319-42286-2_5

Bughin, J., Hazan, E., Lund, S., Dahlstr€om, P., Wiesinger, A., & Subramaniam, A. (2018). Skill Shift: Automation and the Future of the Workforce, McKinsey Global Institute, New York. https://www.mckinsey.com/featured-insights/future-of-work/skill-shift-automation-and-the-future-of-the-workforce. Accessed 5th July 2025.

Cedefop (2022). Microcredentials for Labour Market Education and Training: First Look At Mapping Microcredentials In European Labour Market-Related Education, Training and learning. Publications Office of the European Union, Luxembourg, https://data.europa.eu/doi/10.2801/351271

Cedefop (2023). Microcredentials for Labour Market Education and training: Microcredentials and Evolving Qualifications Systems, Publications Office of the European Union, Luxembourg, https://doi.org/10.2801/566352

Chung, E., Subramaniam, G., & Dass, L. C. (2020). Online learning readiness among university students in Malaysia amidst Covid-19. *Asian Journal of University Education*, *16*(2), 45-48. https://doi.org/10.24191/ajue.v16i2.10294

Clarke, M., & Patrickson, M. (2008). The New Covenant of Employability. *Employee Relations*, *30*(2), 121-141. https://doi.org/10.1108/01425450810843320

Department of Education, Skills and Employment (2021). National Microcredentials Framework, Australian Government, Canberra. https://www.education.gov.au/higher-education-publications/resources/national-microcredentials-framework.

Galindo, M., Fennelly-Atkinson, R., Franklin, K., & Luna, C. (2024). The Role of Microcredentials in Lifelong Learning and Development: Empowering Learners, Empowering Organizations. Digital Promise. https://doi org/10 51388/20 500 12265/225

Gamage, K. A. A., & Dehideniya, S. C. P. (2025). Unlocking Career Potential: How Microcredentials Are Revolutionising Higher Education and Lifelong Learning. *Education Sciences*, *15*(5), 525. https://doi.org/10.3390/educsci15050525

Gauthier, T. (2020). The Value of Microcredentials: The Employer's Perspective. *The Journal of Competency-Based Education*, *5*(2). https://doi.org/10.1002/cbe2.1209

Harteis, C. (2018). "Machines, change and work: an educational view on the digitalization of work", in Harteis, C. (Ed.), The Impact of Digitalization in the Workplace, Springer. https://doi.org/10.1007/978-3-319-63257-5_1

Horton, A. P. (2020). Could microcredentials compete with traditional degrees? The Future of Work, BBC. Available online: https://www.bbc.co.uk/worklife/article/20200212-could-microcredentials-compete-with-traditional-degrees (accessed on 21 April 2025).

LinkedIn (2023). Skills-First: Reimagining the Labour Market and Breaking Down Barriers. https://economicgraph.linkedin.com/content/dam/me/economicgraph/en-us/PDF/skills-first-report-2023.pdf (accessed on 1st June, 2025).

Manyika, J., Lund, S., Chui, M., Bughin, J., Woetzel, L., Batra, P., … & Sanghvi, S. (2017). Jobs lost, jobs gained: what the future of work will mean for jobs, skills, and wages. Mckinsey Global Institute. https://www.mckinsey.com/featured-insights/future-of-work/jobs-lost-jobs-gained-what-the-future-of-work-will-mean-for-jobs-skills-and-wages Accessed 29th June 2025.

Milligan, S., & Kennedy, G. (2017). To what degree? Alternative microcredentialing in a digital age. In Visions for the future of Australian tertiary education (1st ed., pp. 41-54). Centre for the Study of Higher Education, University of Melbourne.

Nimmi, P., Zakkariya, K., & Rahul, P. (2021). Channelling employability perceptions through lifelong learning: an empirical investigation. *Education Training*, *63*(5), 763-776. https://doi.org/10.1108/et-10-2020-0295

OECD. (2024). Bridging talent shortages in tech: Skills-first hiring, microcredentials and inclusive outreach, getting skills right. OECD Publishing.

Oliver, B. (2020). Coursera Professional Certificates and Google Career Certificates: A snapshot analysis. Melbourne.

Peters, M., Beirne, E., & Brown, M. (2025). Microcredentials and its implications for lifelong learning–global insights and critical perspectives. *Distance Education*, *46*(1), 1-7. https://doi.org/10.1080/01587919.2025.2463137

Mitchell, S., Hart, J., Gharaibeh, M., McMahon, G. T., Rhoda, A., Fitzpatrick, S., Wuliji, T., & Janczukowicz, J. (2025). Principles to Award Learning Achievements for Lifelong Learning in Health Using Microcredentials: An International Delphi Study. *Human Resources for Health*, *23*(1). https://doi.org/10.1186/s12960-024-00969-y

Tran, L. H. N. (2018). Game of Blames: Higher Education Stakeholders' Perceptions of Causes of Vietnamese Graduates' Skills Gap. *International Journal of Educational Development*, *62*(1), 302-312. https://doi.org/10.1016/j.ijedudev.2018.07.005

Woods, K., & Woods, J. A. (2023). Less is more: Exploring the Value of Microcredentials within a Graduate Program. *The Journal of Continuing Higher Education*, *71*(1), 43-52. https://doi.org/10.1080/07377363.2021.1966923