



Micro-Credentials: A Critical Exposé

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Abstract

Micro-credentials, one of the non-traditional ways of learning, are gaining ground based on the opportunities inherent in them. However, confusion arises regarding its amorphous nature, particularly when one tries to understand the nature, components, and constituents of micro-credentials and their relationship with the Massive Open Online courses (MOOCs) and traditional education. Hence, the questions this paper addresses are: what are micro-credentials, and how are they like or different from MOOCs? How should we understand micro-credentials and traditional degrees? This paper, thus, attempts a conceptual clarification of micro-credentials, discusses the merits to include the ability to bridge skill gap, promote growth of employees and collaboration between employees, and the challenges to include the need for standardisation and quality assurance, knowledge fragmentation, and credential inflation, among others. The paper recommends that micro-credentials be conceived and deployed as a subset of conventional education, complementing traditional degrees; and a regulation of the micro-credentials landscape to ensure quality and help them deliver on their opportunities while dousing their challenges.

Keywords: Micro-credentials, Massive Open Online Courses, Traditional education, Quality assurance

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Introduction

Microcredentials are gaining widespread global acceptance (de Bruin et al., 2020; Gamage & Dehideniya, 2025; Pollard & Vincent, 2022). This paper thus offers a critical analysis of micro-credentials. It begins by deconstructing the term, micro-credentials, tracing its emergence from using badges to the early use of symbols in various contexts. It then discusses the opportunities and the challenges. The former includes bridging the skill divide, fostering employee growth and collaboration, recognition across sectors, and steady, flexible learning; and the latter includes the need for standardisation and quality assurance, the problem of definition and consensus, knowledge fragmentation, credential inflation, the commercialisation of learning, and access and inequity. The paper concludes that micro-credentials should be conceived as complementary to traditional degrees rather than as rivals or substitutes for them. It also recommends ethical standardisation and regulation of the enterprise to ensure quality and to help micro-credentials realise their potential while minimising their challenges.

Origin and Nature of Micro-credentials

The concept of digital, virtual or open badges is often used synonymously with micro-credentials, and sometimes digital badges are seen as physical portrayals of learned skills. Micro-credentials stress the small or progressive nature of competency acquisition, thus emphasising the prefix ‘micro’ relating to being ‘small’, and ‘tiny’ as against macro, which relates to being ‘big’, ‘extensive’, or ‘broad’. Sometimes, higher education uses the term, digital badges, while micro-credentials are related to professional and career development; there is no neat difference between the duo (Ellis et al., 2021). However, both concepts are used interchangeably. Micro-credentials acknowledge and authenticate small-scale groups of learning compared to traditional (macro) credentials like degrees and certificates, and the former are earnable through formal and informal learning experiences, signalling specific skill sets and knowledge to employers and other stakeholders.

The use of symbols provides a historical root to the emergence of badges and later digital badges. This can be seen in hieroglyphics and barcodes, and many organisations and groups, such as McDonald's, Mason's, and the Scouts, use various types of symbols called trademarks and logos to convey or denote different things (Ellis et al., 2016). A metaphorical way of indicating the emergence of micro-credentials is seen in the allusion to the merit-based badges from the Boy Scouts, because every visual badge indicates the skill obtained by a Boy Scout, such as wood carving or geocaching (Schoeneberger, 2021).

Beyond their connection with the Boy Scouts, badges are deeply tied to the military and pilgrimages to religious sites, where they serve as external symbols of accomplishments, signalling authority and association. Subsequently, video games started issuing digital badges with the same aim of conferring achievements (Gish-Lieberman et al, 2020). Symbols can take many forms, including badges, unique awards, trophies, certificates, credentials, plaques, pictures, clothing, and jewellery. Symbols can stand for or suggest something else by relationship, association, convention, or accidental resemblance, which can derive from an individual or group of individuals based on their perceptions and experiences. A symbol's value relies on how the individual perceives it, influencing whether the person desires to have it or not. The emergence of micro-credentials thus intersects with the above history in various areas, in addition to their application in games, metamorphosing to suit the needs of self-directed learners at different educational levels.

Micro-credentials refer to one of the alternative credentials acknowledged as detached or single formal educational accomplishment or competence by suitable national education authorities (Kato et al. 2020). Alternative credentials come in various shades and hues, including micro-credentials, digital badges, massive open online courses (MOOCs), and, in recent times, credentials provided by UNESCO and Microsoft. The rationale behind these credentials is a response to the rapid demands of the labour market, promoting inclusivity by providing alternative means of accessing university education and new pathways for skill acquisition with lower

economic implications, while also expanding the range of university operations.

The relatively new term, "micro-credentials", describes educational activities that are, by no means, novel, but rather long-standing. Stemming from its name, it centres on modular learning that is smaller than that found in traditional education. The former thus allows the learners to learn in small portions over a period. Micro-credentials, nonetheless, are not a replacement for traditional qualifications; they rather complement the latter, presenting learners with lifelong learning opportunities (Pouliou, 2024).

Several studies and surveys report a lack of consensus on the meaning of micro-credentials (UNESCO, 2022; Flynn et al, 2023); consequently, there are various definitions and taxonomies. Scholars are also not agreed on what micro-credentials encompass, which could be certificates issued by educational institutions, professional or industrial certificates issued by professional organisations, digital badges, or other means of certification. Phraseology could also differ between countries and sectors. These nuanced usages have prompted the development of a glossary of terms on micro-credentials to achieve consensus (UNESCO, 2022).

There is no consensus regarding the difference between MOOCs and micro-credentials. They seem to share more similarities than differences. Kato et al. (2020:24) practically used both terms interchangeably, distinguishing between micro-credentials that are MOOC-based and those that are not. In Kato et al's words, in a "study on two types of MOOC-based micro-credentials, nearly one-third of the completers were based in the United States, 8% in India and 5% in Canada." UNESCO (2022) also notes that micro-credentials incorporate educational experiences that have been in existence for several years, and the emergence of the term micro-credentials is heavily linked to MOOC and the idea of lifelong learning.

Micro-credentials are often contrasted with macro-credentials, which refer to degrees, diplomas, certificates, and licenses usually granted by accredited educational or academic institutions or organisations. Macro

credentials indicate learning accomplishments in a broad range of knowledge, transferable skills, or proficiency, which typically takes several years to complete (UNESCO, 2022). On the one hand, it is sometimes undertaken for personal or general advancement in education; on the other hand, some undertake it for certification or to qualify to practice in certain professions or to pursue a career path.

Different from the macro are the micro-credentials, which are usually centred on specified learning outcomes in a small area of learning completed over a shorter time. They are advanced by different providers, including commercial entities, professional bodies, conventional educational providers and trainers, as well as community and other forms of organisations. Some micro-credentials represent the results of more traditional learning records; others confirm and demonstrate accomplishments gained outside of formal education, such as in the workplace, through volunteering, or self-directed learning. Often, micro-credentials are touted as efficient in building the capacity of workers across the work life cycle.

Opportunities in Micro-credentials

While within higher education, insights from practice-based use of micro-credentials are small, with its probable positive influence, and the influence it could exert on learners and institutions is empirically unclear; some of its potential benefits include the possibility to bring about an improvement from thoughts regarding degree to that of skill, with the perspective to upskill and reskill. The reason for this is that certain employers of labour place more premium on the skills an employee brings rather than on the degree(s) they have acquired. Thus, due to rapid job market developments, there is increasing demand for the workforce to reskill and upskill (Pirkkalainen et al., 2022). An example is that, over the years, human resources leaders have increasingly preferred skills over degrees, and awareness of micro-credentials has grown rapidly among companies in recent years (Gallagher, 2018).

Based on their flexible nature when compared with traditional degrees, micro-credentials could be complementary to conventional degree

curricula and also be valuable to professionals with existing degrees (European Commission, 2020; Oliver, 2019). Ghasia, Machumu, & DeSmet (2019) in an empirical study with four universities in Tanzania involving students, lecturers, and educational technologists found out the benefits of micro credentials to include its ability to foster lifelong learning. To achieve this, however, there must be policies and infrastructure. Oliver (2019) corroborates the need for a policy for the successful implementation of micro-credentials. Miller et al (2020) support the possibility of micro-credentials encouraging lifelong learning as the credentials or badges they give, particularly when they give credit for higher education, can motivate the learners.

A few empirical studies from the available research indicate that students can be indirectly motivated by it; employers could be better recognised, and concerns relating to equity could be reduced (Miller, 2021). In a related study on MOOCs, it is suggested that micro-credentials could add significant value to learners (Calonge et al., 2019). Consortium (2019) notes that students hope micro-credentials will help them acquire in-demand labour market skills, provide more personalised training, and stay abreast of cutting-edge information, offering focused content. Athey & Palikot (2024) note the value of non-traditional credentials in the labour market in developing countries, including faster employment rates and a higher number of views of the badge earned on professional sites like LinkedIn.

Furthermore, Botha & Khoza (2025) argue in a study of micro-credentials in entrepreneurship education that they are pragmatic and time-efficient and serve as substitutes for conventional degree qualifications. The authors therefore encouraged higher education institutions to incorporate relevant micro-credentials into their curricula, thereby supporting the learning needs of entrepreneurs and contributing to the growth and sustainability of small to medium-sized enterprises.

From the learner's perspective, micro-credentials present the opportunity to acquire pertinent skills, such as digital literacy, communication, collaboration, critical thinking, problem-solving, decision-making, and creativity, which invariably increase the chances

of employability (Wheelahan, 2021). Micro-credentials make learners central to the learning process, thereby bolstering learner motivation for completing online courses, as well as promoting flexible and lifelong learning, which showcases acquired skills (Varadarajan et al., 2023). Employers also leverage micro-credentials to train and retrain employees, thereby increasing productivity, while learners utilise them to acquire new skills relevant to their work. Micro-credentials are a promising way to leverage the skills students have acquired after completing secondary education (MicroHE, 2019). Employers thus perceive micro-credentials as a means to foster sustainable capacity building, believing that they can help employees acquire specific skills and qualities. This could also help bridge the skill divide created by the evolving nature of work. This view is also echoed by Mahlasela & Steyn (2023), who note that as skills become outdated due to technological progress, skills and jobs become increasingly heterogeneous, with job silos collapsing. Achieving a badge in micro-credentials could potentially lure and motivate employees to become lifelong learners and thus accomplish their educational objectives (Oliver, 2019).

Challenges of Micro-credentials

One of the challenges inherent in micro-credentials is the problem of definition. There is a lack of agreement on its definition, as it varies widely, with additional definitions forthcoming based on perception, understanding or misunderstanding or regional needs and contexts (UNESCO, 2022; Pollard & Vincent, 2022). Another challenge is determining what constitutes a micro; the size of micro-credentials. This is a challenge because without adequate delineation of micro from macro, whole courses and degree programmes would continue to be referred to as micro credentials. (Wang et al., 2020). Various stakeholders like learners, employers, and even micro-credential providers tend to be confused and find the rapid increase in the number of micro-credentials chaotic, leading to various questions that beg for clarification. For instance, how do we compare and evaluate multiple micro-credentials that employees present as evidence of their capabilities? Providers are similarly confronted with these issues when a new learner requests that her prior learning be acknowledged for

micro-credentials. There is no clear-cut way learners organise and communicate their outcomes collectively. This challenge will be amplified when micro-credentials increase not just in name but in style and their outcomes (Oliver, 2019).

Olivier (2019: 14) notes that “there is little research on whether terms such as micro-credentials or their variants (alternative credentials) are well understood by learners, the prime consumers, or their employers. Few microcredentials have common standards or taxonomies related to required skills and competencies, and this can prevent credentials from being portable.” There are also concerns from sectoral agencies and regulators regarding the mushrooming of names, proprietary names and the academic standing of what is referred to as micro-credentials (Samson 2019; Zanville 2019). There is a need for some standards as a form of quality assurance beyond the subjective creation of definitions and standards by networks of providers. Employers have also expressed concerns about the integrity of micro-credentials and the risk of fraudulent credentials.

Ralston (2020) critiques micro-credentials as a “micro-credentialing craze” (83) and a “moral hazard” (96). The author argues that micro-credentials devalue knowledge, reducing it to a detached skill ‘morsel’, and placing a higher premium on technical skills instead of holistic learning. Based on a “post-digital Deweyan” viewpoint, Ralston refers to micro-credentialing as “dangerously reductivist”, emphasising limited positioning for the workforce in place of soft skills, critical thinking, and civic values. There is thus a concern that micro-credentials depreciate knowledge, encouraging mere pragmatism and instrumentalism over intellectual breadth, thereby reducing the depth of educational purpose.

Another challenge projected will bedevil micro-credentials is that of its inflation, whereby the higher the number of people who receive micro-credentials, the more it correlates with the decline in its value, thus appearing to have less importance to schools and employers alike, which could also reduce the sense of showcasing unique skills and knowledge (Daramola, 2024). This relates to Ralston’s (2020) position

that micro-credentials are “a fad, marketing hype, or another case of ‘learning innovation theater.’”

Thus, the concern is that micro-credentials fragment knowledge, promoting instrumentalism over intellectual breadth and diminishing the deeper educational purposes. Micro-credentials have also been criticised for their crassly capitalist, commercial nature, where organisations and platforms monetise modular learning, charting different revenue paths (Husain, 2025). Micro-credentials are thus not always provided by institutions and edtech companies not just to serve learners or improve pedagogy, but for profit at premium prices, a money-grabbing enterprise. For instance,

Take Coursera’s “Career Academy” product. The company now offers white-labeled course catalogs to universities that can be marketed as the institution’s own. On the surface, this looks like partnership. Underneath, it’s vertical integration. The platform owns the content, the delivery, the learner data, and increasingly, the employer channel. The university is renting relevance—and paying a premium to do so (Husain, 2025:3).

The long-term challenge is that if institutions do not take charge of credentials, they will be mere validators or validators in an alien environment, thereby amplifying some of the challenges already highlighted.

Micro-credentials have the potential to widen the digital divide despite their promise to democratise education (Gamage & Dehideniya, 2025), as up to 2.6 billion people worldwide lack internet access, especially in the Global South and rural settings, which invariably restricts access and participation in credentialing that is fundamentally internet-based (ITU, 2023). The digital divide transcends connectivity; it is a social justice issue which pertains to the ability to access quality devices, being digitally literate, and engaging in purposeful usage instances. The groups of people most marginalised often lack the necessary infrastructure, skills, and social support systems required to engage

effectively with micro-credentials. It is therefore essential to address the connectivity, device, skills, and affordability issues so that accessing it ceases to be an illusion for the underprivileged and becomes a reality for the privileged few.

Critical Intervention

From the foregoing, there is thus a need for action on the quality of micro-credentials, with possible alignment with various national and regional frameworks. This is important, as the large granting of badges without quality assurance is a threat to credibility. Similar to traditional qualifications, there is a critical need for trust, authentication and authorisation for sustained success.

Regarding the relationship between MOOCs and micro-credentials, while one can deduce that MOOCs preceded and, of course, birthed micro-credentials, some MOOCs could then be, for convenience, called micro-credentials. If micro-credentials, however, are true to their nature as bite-sized and flexible, they might not qualify as MOOCs but rather be hosted on MOOC platforms. Ralston's critique of micro-credentials is especially pertinent and warrants further attention. The way the field of micro-credentials is burgeoning despite the myriad issues already highlighted indeed makes it appear like a craze and a fad that will soon fizzle out. The reason for this can be seen in the financial rewards to institutions and platforms; this commercial implication in itself needs to be examined and addressed to ensure the quality and pedagogical quality.

A critic might retort that traditional credentials are not free, so there is no problem with learners paying to access badges for their credentials. While this may be true on the face of it, the scale or the magnitude at which courses are being modularised for micro-credentialing is concerning with the attendant profit margin. In addition, the fact that some institutions are now mere validators without concrete ownership of the courses for the financial benefit therein is equally concerning. This is not to mention the lack of transparency in the credentialing process and the perennial side-stepping of quality assurance and standardisation.

The reductivist charge of Ralston is also not to be glossed over. This is because learning and education transcend mere skill acquisition and employability. It rather equally pertains to staying informed and relevant, participation in society and above all, formation of the mind, which would then inform or translate to pecuniary benefits of employability. In fact, a well-formed mind is expected to engage in self-reflection and self-directed learning, which may involve micro-credentialing to address identified learning and knowledge gaps and may or may not include skill acquisition or development.

Inequity and access are major concerns, particularly in the resource-constrained context of the Global South. This raises the question of to what extent micro-credentials democratise knowledge when some individuals lack basic infrastructure for access. Despite these myriad challenges, the gospel is that they are not insurmountable with strategic regulation and standard procedures; there can be a balance between the opportunities inherent in micro-credentials and their downsides.

It is important to note that micro-credentials and traditional degrees both provide skills to learners; hence, they are mutually inclusive rather than exclusive and complementary rather than substitutes. Micro-credentials offer skills that are more targeted at specific employment-related roles, either entry-level or opportunities for upskilling and continuous professional development. Conventional degrees, however, offer breadth of knowledge, holistic education, and the formation of the mind, in addition to transferable, non-job-specific soft skills needed not only for employment or career progression but also for navigating life meaningfully, addressing existential issues, and participating in society.

Consequently, there is a need to have a clear policy on formal and informal education. Where there is such a policy, it is crucial to domesticate and contextualise to meet regional or institutional demands. Part of what the policy will address includes, but is not limited to, what constitutes micro-credentials in the sense of how bite-sized a course should be broken or modularised, which makes it micro, thus differentiating it from the macro traditional courses. Fundamentally, this will address issues related to regulation,

governance, and standardisation of what is meant by micro-credentials, criteria for badges, how credits should be earned, and whether learning has taken place and skills have been acquired.

It is also significant to ensure that institutions of learning remain true to their mandate of forming minds and promoting holistic learning in the pursuit of revenue from the commercial enterprise of micro-credentialing. To this end, micro-credentials could be conceived as a means of upskilling and complementary to macro learning rather than being seen as competing with traditional modes of learning. In this vein, it is advisable to acknowledge the skills acquired through micro-credentials and to make them count in appropriate quarters, whether in credits earned towards a degree or in career progression (Olojede & Modise, 2024). The importance of collaboration cannot be overemphasised. Educational institutions are encouraged to partner with industries and vice versa to develop relevant courses. Operating in silos leads nowhere. While such collaboration can bring about work-related learning, it is important not to reduce all of learning to work-readiness.

Conclusion

In conclusion, this paper begins with a conceptual clarification of micro-credentials and related concepts, such as massive open online courses. It tries to draw similarities and distinctions between the two concepts. The paper then examines the opportunities and challenges inherent in micro-credentials. Some of the affordances discussed include bridging the skill divide, fostering employee growth and collaboration, recognition across sectors, and steady, flexible learning. Some of the challenges are not limited to the need for standardisation and quality assurance, the problem of definition and consensus, knowledge fragmentation, credential inflation, the commercialisation of learning, access and inequity. Among other ideas, it fundamentally recommends ethical standardisation and regulation of the enterprise to ensure quality and to help micro-credentials deliver on their opportunities while minimising their challenges.

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