Enhancement Themes

Resilient Learning Communities

Exploring the Potential of Micro-credentials and Digital Badging: The Rise of the Micro-credential - What's in it for Students?

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Dr Pete Evans, University of Edinburgh

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Overview

Micro-credentials are a potentially significant development in higher education globally (Pelletier et al., 2021). Their significance comes from the flexible and on-demand forms of education that they claim to promote. This potential value of micro-credentials is being recognised in the education policy landscape of the UK through, for example, England's Skills White Paper[1] and Scotland's 'upskilling' funding[2] (Kernohan, 2021). But broad questions remain on what micro-credentials are, how are they being implemented and what are the wider implications for higher education?

Despite these uncertainties the latest Educause Horizon Report on Teaching and Learning (Pelletier et al., 2021) identifies over 700,000 micro-credentials on offer globally. The EdTech market intelligence firm, HolonIQ calculated a 2019 spend of $9.9bn on a spectrum of micro-credentials that includes: (a) short courses & badges; (b) boot camps; (c) professional certificates and licenses; (d) non-university issued non-degree certificates; and (e) university issued non-degree certificates (HolonIQ, 2020). But this spectrum of micro-credentials is not simple nor linear. Short courses may not involve a micro-credential, or a micro-credential may be presented as a digital badge or as part of a wider digital badge system. As Morgan (2020) notes, digital badges may refer to a technical standard or as a part of a wider micro-credential. Some micro-credentials in this spectrum are awarded for participation in a course rather than the attainment of particular skills or competencies.

Additionally, the micro-credential market is becoming more crowded with non-education providers. These include Google Career Development Certificates, Udacity's nano-degrees, and Microsoft's technical certifications along with more traditional professional certificates. MOOC platforms may also rebundle individual courses from higher education institutions into non-credit certificates such as EdX MicroMasters or Coursera Specializations. Furthermore, non-formal learning from providers such as Udemy, General Assembly, LinkedIn Learning and others, claim workplace credibility for their courses.

Defining micro-credentials

Micro-credentials cover a wide range of approaches to validating learning. A range of definitions is of particular interest in the context of higher education. The European Commission (2020) define micro-credentials as providing proof of achieving a learning outcome assessed using transparent and agreed standards. For the Commission, micro-credentials point towards a link to the attainment of academic credits via these agreed and transparent standards. By offering academic credits, micro-credentials must work within common bureaucratic and regulatory frameworks. The awarding of credits requires the provision of a robust method of student identification, assessment process, statements of learning outcomes, required study hours, and credit framework levels.

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[1] See: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/957856/Skills_for_jobs_lifelong_learning_for_opportunity_and_growth__web_version_.pdf

[2] See http://www.sfc.ac.uk/web/FILES/announcements_sfcan062021/SFC_AN_06_2021_HE_Upskilling_funding_2020_21.pdf

Such constraints may mean that credit-bearing micro-credentials only make sense at a particular credit volume. This may be a factor for the European MOOC Consortium's (EMC) Common Micro-credential Framework (CMF)[3] that defines micro-credentials as consisting of a total learner workload of 100-150 hours at levels 4 - 7 of the European Qualifications Framework (SCQF levels 6-11). Such credit awarding micro-credentials are not so micro and reflect a significant commitment in time and effort from learners.

The CMF definition of micro-credentials excludes a whole range of learning provision included in the European Commission's definition such as most MOOCs, one-week intensive professional development courses, hackathons and so forth. In contrast, higher education micro-credentials in the USA avoid this issue by referring to something that is more than a single course and less than a full degree - hence the use of terms like "nano-degree" or "Micro-masters" (Kato, Galan-Muros and Weko, 2020).

The idea of aggregating or 'stacking' is a key component of micro-credentials. This is where micro-credentials can be combined to create a larger predefined credential such as the Nano-degree, Micro-masters or Specialization. Alternatively, micro-credentials can be combined by the individual student to reflect their own personal combination of interests, competencies and career goals.

Reflecting some of the challenges of unclear definitions of alternative and micro-credentials, a recent small-scale survey of tertiary level students in Scotland found limited awareness and understanding of key terms associated with micro-credentials. Over three-quarters of the small sample of students surveyed were familiar with terms such as "nano-degree", "micro-masters" or "open badges". The students that had familiarity with some of the terms used had only vague understandings of these credentials and what they offered. The students also expressed a preference for micro-credentials sitting within the wider tertiary education system with some element of cross-sector standardisation.

There is a tension between the need for a wider understanding of the micro-credential landscape and terminology and the diversity of possible credentials within that landscape, Both seem necessary for realising the potential benefits of micro-credentials.

Benefits of micro-credentials

Much of the literature on micro-credentials discusses their benefits as (a) from employer perspectives linking micro-credentials to skills and workforce development, and (b) providing alternative access routes and pathways into higher education.

Micro-credentials are often presented as alternatives to the traditional degree that is losing its perceived value in the labour market. In examining micro-credentials in Australia, Oliver (2019, p.1) claims that "around 30 per cent of graduates do not reach the literacy and numeracy proficiency skill level required to carry out moderately complex information processing tasks". The traditional three to four-year degree no longer holds its status as a reliable predictor of the workplace skills of graduates (Succi and Canovi, 2020) or future career success (Chamorro-Premuzic and Frankiewicz, 2019). This weakening of the traditional degree is reinforced by prominent employers such as Random House, Apple or Google no longer requiring degrees in recruitment and selection criteria (Ralston, 2021). Micro-credentials offer an explicit recognition and validation of student skills and abilities and so give employers reassurance that graduates have the skills they claim are developed through their degree studies.

[3] https://www.futurelearn.com/info/the-common-microcredential-framework

Micro-credentials enable education providers to develop and approve courses at a much swifter pace, offering flexibility in responding to industry, student and government demand (Ralston, 2021). The value of micro-credentials is often understood to be found in industry relevance and validation rather than through formal educational endorsement. The role of education providers is in offering the quality assurance that employers are seeking as can be seen in employer-university co-development of credentials at eCampusOntario[4] (Horton, 2020). The survey of students in Scotland found a preference for competence-based micro-credentials accredited by a university while also recognising the benefits for employers of offering micro-credentials in terms of employee engagement.

Employability is identified as a major benefit for the individual student of micro-credentials. These credentials provide a means of evidencing skills and competence for entry to better quality employment. As micro-credentials cannot provide similar benefits of socialisation and acculturation that traditional degrees do, they depend on their value being in immediate employment payback by responsiveness and direct linkages to labour market needs and demands (Ositelu, McCann and Laitinen, 2021; Ralston, 2021). Micro-credentials as a mechanism for higher education to more swiftly respond to changing industry needs and demands is highlighted in the recent Scottish Funding Council (SFC) review of tertiary education and research (Scottish Funding Council, 2021). The idea of more immediate employment payback is based on students differentiating themselves in a crowded graduate jobs market where first class and upper-second class degrees are common (Tash, 2021). A recent seminar on micro-credentials (Camilleri, 2019) gave an imaginary case example of someone deciding to change career from being a lab technician to becoming a sustainable energy investor. To do this, the individual identifies and completes courses on investing, wind power engineering, circular economy, solar power and climate modelling all from different universities and countries, to create a unique competence profile for themselves.

Through a rethinking of the core structures of higher education provision, micro-credentials enable the potential for more student-led flexible curricula. Such flexibility allows non-traditional students to gain credits towards a traditional degree in ways and timeframes that suit them and at a lower cost (Villalba-Garcia and Chakroun, 2019; Perea, 2020) while also enabling teaching and learning in the community or workplace[5]. Such flexibilities enable educational structures that are adaptive and sensitive to the changing material circumstances and capacities of individual students over time and that responds to student needs in dynamic, fluid, complex and precarious contexts (Veletsianos and Houlden, 2020).

Implications

Student as navigator

While there are clear immediate and potential benefits for students in the promotion of micro-credentials, there are also several direct and indirect implications for higher education systems. In shifting away from traditional degree structures and durations, micro-credentials may reshape higher education structures to set up the student for a lifetime of self-directed learning (Ralston, 2021). Micro-credentials, therefore, provide an infrastructure for the individualisation and commodification of education. The policy problem of employment and economic growth are recast as problems of education (Simons and Masschelein, 2008). Employment policy is not an issue of job creation and industry growth but of providing opportunities for individuals to upskill and re-skill according to their career aspirations, knowledge and understanding of trends in the labour market. While enhancing student agency, the risks around developing and maintaining a status of being employable - for

[4] https://www.ecampusontario.ca
[5] Such a restructuring of higher education was explored in the Stanford 2025 project under the scenarios for the 'Open Loop University' and 'Paced Education'. See www.stanford2025.com

example, if the idea of an alternative energy investor matches market opportunities - rests with the individual employee (Herbert and Rothwell, 2016). In this way, micro-credentials embed a transactional and individualistic approach to tertiary education.

Educational and social imperative

Yet, as an alternative to the traditional degree, micro-credentials struggle in providing the broad general education and foundational disciplinary knowledge associated with longer programmes of study (Ralston, 2021). Micro-credentials face challenges in delivering the wider outcomes of socialisation into higher education or disciplinary and professional norms (Ositelu, McCann and Laitinen, 2021). As Ralston (2021) argues, micro-credentials fail to meet the needs of lifelong learners by not developing the attributes of the self-directed learner nor promoting learning for its own sake. Furthermore, the optimistic discourses of flexibility in higher education ignore the diversity of students where their capacities to exercise agency are ableist and gendered and will vary over time. Ositelu and colleagues (2021) found that micro and short-term credentials in the USA tended to reinforce existing privileges and ethnic and gender disadvantages in the labour market.

Infrastructures

The transfer and stacking of credentials from multiple providers is the dream of many credit transfer schemes. But credit transfer requires a significant and necessary bureaucracy of describing the learning outcomes and assessment activities completed to demonstrate the achievement of a credential. Within the UK, such credit unbundling, transfer and accumulations should be fairly straightforward given that degree programmes tend to be made up of particular combinations of modules where each module is discrete and separately identifiable (in HeCOS codes) (Kernohan, 2021). The recent Scottish Funding Council report on tertiary education in Scotland (Scottish Funding Council 2021, p.44) calls for a new national micro-credential framework to support “the development of micro-credentials that will respond to regional and national stakeholder needs and meets the lifelong learning aspirations for Scotland” potentially as part of a single quality framework for tertiary education. The ability for easy transfer of credits between institutions is valued highly in the survey of students in Scotland.

There are national and regional examples emerging of the infrastructure for transferring credentials such as the US-centric Comprehensive Learner Record[6], Singapore’s lifelong learning credit bank or Sweden’s national strategy on validation. Cross-national schemes are also emerging, such as the South East Asia Qualifications Reference Framework, Australia and New Zealand’s student-facing eQuals system[7], as well as schemes in West Africa and Southern Africa (Cedefop, 2019). Digitally enabled credit transfer schemes can also be entangled with discussions on the use of blockchain-like technologies such as Credentify[8], although e-certification systems already exist (Selvaratnam and Sankey, 2021). Going further still, a recent UNESCO report (Chakroun and Keevy, 2018) proposes a global infrastructure for the recognition and transfer of credits across digital systems. So, for all the potential for developing a more agile and responsive higher education, realising the wider benefits of micro-credits requires extensive bureaucratic machinery that is understandable to educators, students and employers.

Micro-credentials represent a potentially valuable opportunity for higher education in terms of expanding its economic and societal impacts. These opportunities are particularly prominent as we emerge from the current pandemic and concerns shift towards employment and skills

[6] https://www.imsglobal.org/activity/comprehensive-learner-record
[7] https://www.myequals.edu.au
[8] https://credentify.eu

development in stimulating the economy. In addition to priorities of graduate employability, micro-credentials offer opportunities for the development of new approaches to widening participation in higher education. Developing micro-credentials cannot be decoupled from broader issues of the investment in infrastructures and reshaping of practices required nor from the importance of protecting the shared vision and values of higher education.

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18 Bothwell Street, Glasgow G2 6NU
Registered charity numbers 1062746 and SC037786

Tel: 0141 572 3420
Web: www.enhancementthemes.ac.uk