



# THE POTENTIAL AND LIMITATIONS OF MICROCREDENTIALS

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## Background

Microcredentials have emerged in response to one of the most frequently leveled criticisms of higher education: colleges and universities are simply too slow, too inflexible, and too inwardly focused to develop new programs that align with industry needs. A common result is that by the time the degree is made available, it is already out of date, especially in Information Technology (IT) programs. A related issue is that the “degree” is not necessarily the appropriate credential for satisfying learner and employer demands; not only does it take too long to develop, for many people it also takes too long to earn. And of course, earning a degree is expensive. In addition, people seeking skills may already have degrees or simply do not need them: what they need is a more targeted opportunity to develop, demonstrate, and share in-demand skills and competencies.

Enter the “microcredential,” which is rapidly evolving to include “MicroMasters” as well as other “microdegrees” at all levels, from pre-Associates through professional development. It’s worth noting that this first crop of microcredentials is being offered, not by colleges and universities, but rather non-traditional providers, some of which—like edX and Udacity—represent the newest incarnation of Massively Open Online Courses (MOOCs). And while they work closely with traditional providers—in fact, the most elite of higher education institutions—their appeal is squarely vocational. Udacity promises its nanodegrees constitute a “valued credential” that will make their graduates “in demand.” EdX’s MicroMasters are “a Pathway to Today’s Top Jobs”—even though the programs are simply “graduate-level courses from top universities designed to advance your career.” It should also be noted that students cannot use federal financial aid or Department of Defense (DoD) tuition assistance to earn credentials from “alternative,” i.e., non-accredited providers.

In other words, at one level “MicroMasters” are precisely what their name suggests: the repackaging of selected content for a targeted purpose (and for individuals in possession of bachelor’s degrees that have not provided “pathways to top jobs”).

However, this raises the question: Why should an individual bother to pursue a full master’s degree if five courses alone are enough to confer career success?

In this sense, the downsizing of the degree constitutes a rebuke to the higher education establishment, even if the establishment itself is creating them. There is a serious mismatch between degrees and what people actually need to launch or advance careers. So, while it is possible to get credit from The Georgia Institute of Technology for certain Udacity offerings, the industry logos splashed through the Udacity website make clear that these offerings (unlike traditional “megadeegrees”) are created in collaboration with industry and designed to serve industry needs. Smaller is not only better (i.e., less expensive and more relevant to employment), it is also quicker—both for students to complete and for providers to develop.

In other words, the “micro” phenomenon reveals the widespread recognition that conventional postsecondary education is limited both in its ability to prepare students for the workplace and to communicate the value that graduates can provide. The current situation is simply too confusing for students and prospective students—especially those who are first generation and underrepresented—to navigate. And employers are not faring much better.

Microcredentials also address our all-or-nothing approach to conferring postsecondary credentials. Students who are just one credit short of a bachelor’s degree, for example, have nothing to show for their



postsecondary experience but debt. Done well, stackable microdegrees provide small victories for students and motivation to keep going. They also represent a different way to capture and communicate the value of postsecondary learning, one that is based on skills and competencies in demand by employers rather than courses and credits. That's why microcredentials are such a good fit for professional development, especially for educators, as with [Digital Promise](#), which describes its credentials as “competency-based,” “research-backed,” “personalized,” and “on-demand.” Unlike many other microcredentials, these are driven by the educators themselves, not by institutions or even organizations.

Several questions remain: will the creation of microcredentials be left primarily to alternative providers? While some institutions are exploring micro-opportunities to recognize learning, they are keen to stress that these are intended to supplement, not supplant, grades and credits. Otherwise, they risk cannibalizing demand for their core offerings. The State University of New York (SUNY), which established a system-wide Micro-Credentialing Task Force (“Task Force”) looked in depth at opportunities to create microcredentials across the system. However, one of its recommendations is to ensure faculty governance in their development -- thus codifying one of the traditional barriers to speedy development and implementation by higher education.

Another important question is whether these alternative credentials, especially stackable microcredentials, actually promote career advancement and whether they provide career opportunities for Service members and veterans in particular.

## Discussion

### Current Microcredential landscape

Three different terms are often used interchangeably but actually describe different if related concepts: “digital credentials”; “microcredentials”; and “badging.” An older term, “certificate,” is closely related and important to distinguish.

#### Digital credentials

Digital credentialing grows out of technological advances as well as the increasing use of competency-based hiring and learning practices. In some sectors, employers are now able to wield increasingly sophisticated software to identify specific skill sets; this also reflects the increasing automation of the demand side of the labor market. [Soares] On the supply side, microcredentials and badges can signal that a graduate has in-demand skills, such as data analytics or coding, that might not be visible from the degree perspective (e.g., a Bachelors in English). In other words, badges have the potential to “augment the core offering of a college degree program and enhance a student’s employability.” [Soares] They do not, however, require a complete redesign of the college degree itself, making them attractive to colleges and universities; the badge functions essentially as an overlay that communicates the most salient aspect of the degree to prospective employers. This does again raise the question: what then is the value of the degree itself and the component parts which may not have immediate applicability in the job market?

#### Microcredentials

Microcredentials have emerged as the most commonly used way to describe credentials that do not constitute a full degree or even a certificate, but that describe a meaningful collection of courses or related learning/training. At the most basic level, microcredentials verify, validate, and attest that specific skills and/or competencies have been achieved. They differ from traditional degrees and certificates in that they are generally offered in shorter or more flexible time spans and tend to be more narrowly focused. Microcredentials can be offered online, on-campus, or via a hybrid of both. [SUNY]



Despite national efforts by Lumina and others to establish universal definitions around microcredentialing, there remain inconsistencies. For example, a badge may be a microcredential but not every microcredential is a badge. What distinguishes the current approach to microcredentials from certificates, for example, is that they are typically smaller and more focused in scope as well as digital, enabling them to be supported by metadata; many are also stackable into larger degrees.

## Badging

Badges use digital technologies to represent competencies and various learning achievements and are generally web-based and “clickable,” linking viewers to extensive meta-data that provides detail on requirements for earning the badge. The most effective badges link to actual student work or portfolios of work as well as the assessments used to verify competencies. Badges should always be verifiable, including a link to the relevant web pages on the issuer’s website. Electronic badges should also include metadata on the evidence of learning and link back to sponsoring institution and evaluation criteria.  
[SUNY]

One of the reasons badges have gained popularity is that they can be displayed online in personal pages on LinkedIn, Twitter, Facebook, etc. There are a number of companies who host badges such as Credly, Mozilla Backpack, Accredible, and GlobalSign.

But badging also raises a host of technological challenges. In response, organizations such as Credly have emerged to provide a mechanism for “empower[ing] organizations to officially recognize individuals for demonstrated competencies and skills.” Credly describes itself as “building the currency for the global marketplace of knowledge and skills.” In other words, they see themselves as providing not only a mechanism for communicating information to stakeholders but also as helping to solve the underlying problem: the lack of a common currency – or even economy – based on competencies and skills rather than on proxies for learning. The need for this currency has been repeatedly noted but not yet solved. [Credential Engine](#) is playing an important role in attempting to establish a digital registry that will enable “job seekers, students, workers, and employers to search for and compare credentials.” The organization is also using labor market data to show the value of earned badges: that is, what career path a badge-holder might pursue and what real jobs are available.

## Certificate

A certificate is a credential issued by an institution in recognition of the completion of a curriculum that usually represents a smaller domain of knowledge than established degrees. While shorter-term certificates have been available in the market for a long time, the “certificate” is not well-defined as a credential, and is often associated with lower-level, sub-collegiate skills. In addition, there is no agreement across institutions and systems as to the meaning and even length of the “certificate,” nor is there consistency as to their quality, rigor, and usefulness. While SUNY and other institutions and systems have begun to require that the certificates they award be applicable to larger credentials, this is not always the case; in addition, many certificates are not-credit bearing. A related problem is that certificates often lack transparency, in part because they are not necessarily digital.

## Frameworks

One concern that is often raised about microcredentials is the lack of an “ecosystem” that enables both students and stakeholders to understand the purpose, use and quality of different credentials and to make informed decisions. Frameworks play an essential role in enabling microcredentials to be widely



understood and used. One important emerging framework is the Connecting Credentials framework, funded by Lumina, which “identifies the competencies underpinning credentials, educational programs and work, establishing common language and delineating levels of proficiency to describe what people who have mastered these competencies.” Other training providers, such as Degreed, are using the framework to assess and label skill levels. The work of Connecting Credentials is striving to clarify what postsecondary credentials mean. While they have included college degrees, along with industry certifications and certificates, this can obscure key differences among them.

In IT and in the trades, especially, employers and industry groups have played an essential role in establishing frameworks that help users recognize the quality of the credentials and trust that they are aligned with employer needs. Industry-recognized frameworks and component credentials are a well-recognized form of microcredential, both in the trades (e.g., welding, automotive) and in technology (e.g., Salesforce, CISCO, Microsoft, CompTIA). These microcredentials are valuable to employers because they attest that students have attained skills and knowledge that are verified by an assessment created by professionals in the designated field. Students who attain these credentials can demonstrate that they have mastered professional competencies, and colleges with high pass rates are viewed favorably by industry. In some cases, faculty who have worked in industry bring these opportunities to students because they recognize that attainment of these certifications gives students an advantage in the job search. [SUNY] Ironically, as a recent [report](#) by Burning Glass indicated, many high-paying “middle skills jobs” that require certifications go unfilled, even in periods of high unemployment. It is worth noting that while many schools, especially community colleges, prepare students for these credentials, the authority ultimately comes from the bestower of the credential or certification, e.g., the American Welding Society or CompTIA.

## Impact on Military Education

Army University is establishing partnerships with such groups and working on a project to create its own tailored solutions. In 2017, the Army began prototype testing of [MIL-CRED](#) (Military Credentials), a microcredentialing ecosystem that offers the capability of capturing soldiers’ learning outcomes at the granular level in a way that is meaningful to Army leaders, talent managers and soldiers themselves -- both while they serve and as they transition out of the Army. The system is designed to record soldiers’ learning outcomes as microcredentials (badges, credentials and certificates that contain the specific learning outcomes of a training event, school course or experience) and populate them onto a soldier’s learner profile, or portfolio. The profile can then serve as a comprehensive digital résumé of the soldier’s assessed and validated knowledge, skills, abilities, competencies and other learning outcomes, which colleges and universities could then use to award credit to soldiers and properly place them in their academic programs. [Delvaux] Ideally, the profile will also be available to employers.

Unlike academic transcripts, which have limited value outside of academic settings, the learner profile has the added benefit of being able to serve as a living document to which academic, military and industry learning achievements from training, education and experience alike can be added continuously throughout the learner’s lifetime.

## Recommendations

One concern is that microcredentials may not be reaching the individuals who need them most. For this to happen -- and for microcredentials to fulfill their potential -- the following will need to be in place:



- Transparency
- Portability
- Stackability
- Non-credit to credit pathways
- Alignment and currency

These are addressed below in terms of need and current versus desired state, followed by a brief discussion of the issue.

### **Transparency**

**Current State:** Lack of transparency and clarity as to meaning, purpose, and applicability of specific credentials

**Desired State:** Instead of grades and conventional transcripts, credentials embed digital information in terms that can be read and understood easily by all stakeholders

**Discussion:**

For learners as well as employers and other stakeholders, a lack of transparency into what specific credentials represent and how they translate into capabilities limits opportunities to match individuals with skills to employers with talent shortages. This situation leaves learners vulnerable to out-of-date or misaligned training and learning and encourages employers and other stakeholders to rely on unreliable proxies, such as reputation of institution. Lack of transparency and a common language also complicates transitions from military experiences and training to civilian employment or educational contexts.

### **Portability**

**Current State:** Inability to apply and/or use credentials earned in one context or setting to other settings

**Desired State:** Trustworthy individual competency-based learning records that go beyond conventional transcripts, supported by an easily accessed, easily used credential registry based on a common taxonomy of component competencies

**Discussion:**

Individual learners are often hampered in their efforts to “carry” their skills and experience from one setting to another. This situation has numerous factors: reliance on the limited information conveyed by conventional transcripts, distrust by employers and other stakeholders regarding unfamiliar or out-of-region institutions; lack of a fully developed, national credential registry. Technology (such as Blockchain) has an important role to play in helping solve the portability problem, but this technology is still unfamiliar to and/or underutilized by most employers and educational providers. Similar to transparency, portability presents special challenges to Service members and veterans.

### **Stackability**

**Current state:** Inability to count one credential (e.g., short-term certificate or training course) towards another, larger credential (e.g., degree), requiring many students to start over and waste time, money, and motivation.

**Desired state:** Individuals can either roll up a smaller credential into a larger one or add credentials to progress along a defined career pathway.

**Discussion:**

Three types of stacking have been defined: “vertical stacking,” which adds credentials in a hierarchy, with one level building on another, enabling the learner to progress toward a higher degree (e.g., certificate to associate degree to bachelor’s degree to master’s degree). “Horizontal stacking,” which is common in IT, describes related credentials rather than a hierarchy of credentials (e.g., CompTIA certificate, Microsoft Certified Solutions Expert certificate and Cisco Certified Network Associate certificate). This model



enables career pathways, especially in fields that rely on industry certifications or in which technology is changing rapidly. “Value-Added Stacking” combines the concepts of vertical and horizontal credential stacking and involves the stacking an area of expertise to an existing two- or four-year degree with shorter-term credentials to prepare for a specific type of job. For example, a learner could add patient care technician and phlebotomy certificates to an associate degree or supplement a bachelor’s degree in health management with an information services certificate -- all leading to a position as a medical office administrator. [Williamson and Pittinsky]

### **Non-credit to credit pathways**

**Current state:** For the most part, credits remain the currency of higher education. While non-credit courses and training abound, their lack of credit can leave learners with no way to parlay their skills and competencies into an academic credential. As a result, learners who have earned a non-credit certificate (e.g., as a dental assistant) are unable to parlay it toward a relevant academic credential (e.g., an associate degree in Dental Hygiene) that will lead to career advancement.

**Desired state:** There is an agreed-upon unit of recognition based on skills and competencies rather than credits that enables individuals to translate their relevant training and experience toward the service of a credential. This facilitates coherent career pathways that incorporate workforce training, academic courses, and on-the-job experience.

**Discussion:** The American Council on Education does offer the ACE College Credit Recommendation Service (ACE CREDIT® Registry and Transcript System), which makes recommendations to institutions as to the number of credits the training is “worth.” (It should be noted that institutions are under no obligation to accept these recommendations.) In any case, this is a workaround that shows the chasm between credit and non-credit learning and how differently they are perceived. Even within the same institution, there is often a lack of consistency as to which types of learning and credentials “deserve” credits. More seriously, it does not address the need for clear career pathways that depict a route to increasing career advancement based on increasing competencies and experience, however attained. However, some new models are emerging, such as [Northeastern University’s partnership with IBM](#) to turn digital badges into academic credentials.

### **Alignment and currency**

**Current state:** There are few mechanisms to guarantee that the microcredentials (or degrees) that are offered by educational institutions are aligned to current industry standards and needs and regularly updated.

**Desired state:** Continuously updated, easily used registry of credentials with relevant industry standards and/or description of employer input and process used to ensure alignment.

**Discussion:** The full potential of microcredentials is rooted in the promise that they are current and aligned with industry standards or, where such standards do not exist, aligned with stakeholder informed competency frameworks.

## **Conclusion**

Because of its size and the strength of its training and learning, the military is in a unique position to establish its own microcredentials and validate those of other providers. Such a process would require correlation with the competencies that employers are seeking. For many employers, the college degree is no longer sufficient and, for some very large corporations, it is not even necessary: a recent report by [Glassdoor](#) lists fifteen companies, including Apple, Google, Penguin Random House and even Costco that do not require a bachelor’s degree. This phenomenon opens the door for widespread adoption of high-quality microdegrees tied to a transparent and industry-informed framework. This could in turn make a





significant impact in creating career pathways and employment opportunities for well-trained service members and veterans.



## References

[Advanced Distributed Learning Initiative. \(April 2017\). \*Needs, Challenges, and Primary Gaps Impacting the Implementation of Distributed Learning in the DoD.\*](#)

[Berry, B., Airhart, K., Byrd, P. \(2016\). \*Microcredentials.\* Phi Delta Kappan. Vol 98, Issue 3, pp. 34 – 40.](#)

[Brown, J., Kurzweil, M. \(2017\). \*The Complex Universe of Alternative Postsecondary Credentials and Pathways.\* American Academy of Arts and Sciences.](#)

[Credly. “About Us.”](#)

[Delvaux, S. \(2017, June 16\). \*Measuring Learning Outcomes from Military Service.\* Inside Higher Ed.](#)

[Glassdoor. \(2018, June 14\). \*15 More Companies That No Longer Require a Degree—Apply Now.\*](#)

[Kazin, C. \(2017, August 15\). \*Microcredentials, MicroMasters, and Nanodegrees: What’s the Big Idea?\* EvoLLLution.](#)

[Northeastern News. \(2017, September 25\). \*Northeastern University and IBM Partnership First to Turn Digital Badges into Academic Credentials for Learners Worldwide.\* News@Northeastern.](#)

[Soares, L. \(2018, May 16\). \*How Digital Credentialing is Driving the Shift Towards a Learning Economy.\* EvoLLLution.](#)

[SUNY Micro-Credentialing Task Force Report and Recommendations. \(January 2018\).](#)