Beyond Transcripts and GPAs: An NSF Workshop on Digital Micro-credentials for Use in College Admissions

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Abstract: The “Micro-Credentials as Evidence for College Readiness” NSF-supported workshop was held at the University of Michigan School of Information in May, 2017. The goal of the workshop was to explore the potential of digital micro-credentials—also known as digital badges—as a part of the college admissions process. To accomplish this, we convened college admissions personnel, youth-serving organizations that award digital badges, and assessment and learning researchers. This Rapid Community Report describes the attendees and structure of the workshop, and presents major findings and takeaways. This Rapid Community Report contains excerpts and summaries of material that can be found in the full workshop report, available from http://hdl.handle.net/2027.42/14385.

Introduction
The college admissions process in the United States is under increasing stress. It faces legal challenges to attempts to address equity and inclusion, charges of unfairness and manipulation by wealthy alumni and parents, and stress based on rapidly increasing numbers of applications—especially at selective colleges—due to the relative ease of applying to multiple colleges through portals like the Common Application. Amid this stress, college admissions officials continue to strive towards the goal of recruiting, admitting, and enrolling a class of students that is able to thrive and succeed at their institutions (or ready to do so with appropriate supports). Over the past several years, digital micro-credentials—also known as digital badges—have entered this conversation as a means of recognizing, displaying, and transmitting information about an applicant’s dispositions, skills, abilities, and knowledge. For the most part, the conversation on digital badges has been focused on their potential for documenting career-focused “job skills” or credentials, or as part of portfolios to help document students’ informal learning engagements… but to what end? How might digital micro-credentials help students make a case about their readiness for college admission, and help college admissions officers address the many challenges they face? Imagine, for instance, a micro-credential that documents a student’s mastery of 3D design skills and tools that includes links to example work, instructor testimonials, and information describing the time and process involved in earning the badge. Would such a badge serve as evidence of readiness for a college-level program on design? Of general academic ability? Of non-cognitive skills? Of readiness for a liberal arts program? This is a real example from Mouse, an informal learning organization that partnered with an undergraduate design college to develop this particular badge, in part for the purpose of college admission. Micro-credentials like this were a focus of the workshop we describe in this Rapid Community Report.

The National Science Foundation-funded “Micro-Credentials as Evidence for College Readiness” workshop was held in May, 2017 at the University of Michigan School of Information in Ann Arbor. We gathered a range of actors with a stake in questions about how micro-credentials may figure into college admission, representing the worlds of both practice and research. The assembled group was constructed to represent relevant expertise with respect to the problem-solving space required for discussions of digital micro-credentials in college admissions. Specifically, the workshop addressed three questions:

- Can micro-credentials serve as valid and reliable evidence of prior learning and future potential?
- What “gap” in current admissions practices can be filled by micro-credentials?
- What is required for micro-credentials to be useful for college admission?

Workshop Attendees
The workshop included 41 participants representing three main groups: college admissions officers, providers of informal learning experiences for youth, and experts in the assessment of learning and digital badges. In this
context, the informal youth-serving organizations are “badge issuers,” the youth they serve are “badge earners,” and college admissions officers are “badge consumers.”

The college admissions officers were selected to represent institutions (or components of institutions) with different foci and recruitment goals/needs. These included representatives from the Office of Undergraduate Admissions at the University of Michigan, which in 2016 considered over 55,000 applications for an enrolled class of fewer than 6,700 students. We included representatives of the Penny W. Stamps School of Art and Design, a first-year admitting college within the larger University of Michigan that conducts its own admissions process focused on reviews of student art portfolios in addition to their academic qualifications. Kalamazoo College is a small, private, liberal arts college in Michigan with only 1,400 students total. It is part of a growing number of “test optional” colleges that admit students without regard to standardized test scores. We also had representatives from the Parsons School of Design, who are working with one of the informal youth-serving organizations to design a badge-driven credential for use in their college admissions process.

The two youth-serving organizations at the workshop were the Chicago City of Learning (CCoL), and Mouse, non-profit organizations with a well-developed range of programs aimed at diversifying youth agency and learning. CCoL describes itself as a “Connected Learning infrastructure that helps break down the barriers between the learning that takes place across spaces” (Chicago City of Learning, 2016, pp. 2-3). CCoL helps learners navigate the large and growing number of informal learning opportunities across the City of Chicago, and has been exploring the use of digital badges to note student accomplishments and to guide the selection of future learning opportunities. The work of CCoL is as an example of a way to promote learner agency by making connections across various domains of a learner’s life. Mouse has a 20-year history of working with youth in under-resourced schools and neighborhoods to create connections to STEM learning, especially with respect to computing. Mouse began in New York City, but now operates programs nationwide. At our workshop, Mouse focused on one particular program, called the Design League, which is the focus of a collaboration with the Parsons School of Design (Parsons) in which they endorse Mouse-awarded micro-credentials.

The assessment experts in the workshop represented a range of areas of focus, from game-based learning and “stealth assessment” to traditional forms of measuring and representing learning and accomplishment. Other attendees included a university registrar, representatives of a group at the University of Michigan focused on developing a pipeline for college access for students from underserved communities, and a number of graduate and undergraduate students with an interest in this problem area. A full list of workshop attendees can be found in Appendix B of the full report, available from http://hdl.handle.net/2027.42/143851.

Workshop Structure
The workshop was conducted over two days. On the first day, we set the stage for discussion by having Professor Dan Hickey of Indiana University present an overview of the current state of digital micro-credentials. Dr. Hickey had previously conducted an evaluation of projects using digital badges for the MacArthur Foundation’s Digital Media and Learning initiative, and is an active participant in the formulation of standards and specifications for digital badges and digital badge portfolios. (The full report contains an overview of digital micro-credential use in education.) Following this orientation talk, each of the college admissions officers shared their current practices in admissions, as well as discussing the biggest challenges they face in their work to broaden participation in college. Finally, each college admissions officer shared their view of innovations on the horizon. Next, each of the youth-serving organizations provided an overview of their work. This included case studies of learners and digital micro-credentials. Finally, we ended the day by breaking into cross-functional groups to engage in initial design thinking about systems to support the use of digital micro-credentials in college admissions.

Day two opened with further design work by small groups consisting of a mix of admissions officers, experts in the assessment of learning, and leaders from STEM and micro-credential organizations, followed by a share-out to discuss the main challenges that emerged from this process. The remainder of the workshop was spent in using these challenges to generate a list of key issues that need to be addressed in order to make progress. We concluded the workshop with a discussion of observations and recommendations for moving forward. The key issues and recommendations are summarized below.
Key Issues Identified
The following sections are excerpted from the full workshop report. In exploring the main framing questions, workshop participants identified six key issues that require attention in order to make micro-credentials or badges a useful part of the college admissions process. These issues can be thought of as design tensions, in that solving for one issue might pose challenges to others. These issues include:

Equity
From the presentations by admissions teams, it became clear that an obstacle many students—especially those from underserved communities—face in the college admissions process is access to resources needed to build a competitive application. This issue of equity remained a primary concern throughout the workshop. In the ongoing work to increase access to and success in higher education, what role can/will digital badges play? Will badges provide new opportunities for learners to represent “non-traditional” accomplishments? Will badges provide less-resourced applicants opportunities to demonstrate accomplishments that are treated favorably by admissions officers and policies? Conversely, might the use of badges stigmatize learners in comparison to those who excel at more traditional measures of college readiness? Will micro-credentials become part of a new “arms race” with well-resourced families becoming more savvy users of badges than under-resourced families?

Validity and Endorsement
If badges are to be useful in the college admissions process, the admissions officers reported that they need to know that badges reliably represent what they claim to represent. Standardized tests are nationally normed and their validity as evidence of academic potential is verified via conventional measurement principles. This was particularly important for the admissions officers at large institutions who have thousands of applicants to review. Smaller institutions, like Kalamazoo College are moving away from requiring standardized tests scores, but still face issues determining the validity of the other factors considered in their admissions process. Badges contain evidence, information about how that evidence was obtained, and can contain links to additional evidence and information. As such, their validity as evidence of academic potential is verified according to the perceived credibility of the information they contain. Will admissions officers be able to make these judgements? Will certain valued badges or badge issuers accrue credibility the way that traditional credentials have gained (or lost) credibility over time?

Agency and Authenticity
College admissions officers from both large and small institutions value authenticity in learners’ pre-college activities, which can be hard to determine. They reported viewing sustained focus and agency as important proxies for authenticity, as opposed to a collection of activities meant to enhance one’s résumé. How can digital micro-credentials both promote student agency along more authentic paths, and communicate agency and authenticity as part of a learner’s college application?

Promoting Lifelong Learning
The moment of college admission can represent a breakpoint in students’ curricular and extracurricular engagements. College transcripts, which are a primary way of communicating academic accomplishment to future employers or graduate schools, do not contain information from secondary schools. The learning experts and the representatives from the youth-serving organizations were hopeful that digital micro-credentials can offer an opportunity to build validated representations of learning that span pre-college and college life, and also lay the foundation for continued engagement post-college. Learning pathways within college might also shift to allow learners to continue to build on their pre-college engagements, valuing co-curricular learning in ways that are parallel to formal classroom learning.

The Need for Infrastructure
For digital micro-credentials to be useful, a technical infrastructure needs to be built with a focus on privacy control and data protection, openness, and interoperability. The IMS Global Learning Consortium, the leading organization in setting educational technology standards, is currently working with educational institutions and private-sector partners on this challenge. The recent merger of the two leading commercial badging platforms suggests that badges will endure as the primary manifestation of digital micro-credentials. Over-consolidation may present risks, and moving forward it is important to avoid over-reliance on either a single platform or commercial providers and preserve open access. For instance, since our workshop was held, Mozilla announced
that their badge platform was shutting down and all assets were being transferred to Badgr, an open-source platform hosted by a privately held organization.

**Scalability**

Finally, any successful use of badges in college admission requires systems that support the processing of micro-credentials *at large scale*. College admissions officers, from both large and small institutions, felt that badges had the potential to be an important part of a holistic review process, but only if issues revolving around equity, validity, and authenticity can be resolved in a way that enables badges to be integrated into an already-challenging admissions workflow.

**Recommendations for Future Work**

This workshop was an important first coming-together of different parties in the micro-credential and college admissions worlds. The representatives of youth-serving organizations—which have an explicit goal of college preparation—reported that they had never heard *first-hand* from college admissions officers about how admissions reviews are conducted. Additionally, while college admissions officers expressed a growing interest in “non-traditional” applications and the potential of micro-credentials to provide evidence of student potential, they acknowledged the significant challenge of incorporating new credentials into the admissions workflow.

College admissions officials reported that the workshop alerted them to the need to begin preparing for these new challenges. In the process of our discussions, many different ideas, issues, concerns, challenges, and opportunities were raised. Below, we summarize the main takeaways from the workshop, and discuss potential paths forward.

**Micro-credentials can facilitate student-institution match**

The workshop presentations by the admissions officers echoed each other; their primary goal is to admit students who will be successful within their own institutions. How can micro-credentials potentially shape and represent students’ interests and commitments to learning and provide strong signals about the likelihood of academic success within the context of a specific institution? Micro-credentials can both provide a tool for reflection and student discovery, and connect students to new educational opportunities. Through a self-curated learning profile, students could then articulate the arc of their learning over the course of their education, both prior to and throughout college. This type of reflection can promote the development of one’s identity as a learner and lead to deeper engagement in the learning process (Deakin Crick, 2012).

Similarly, how can a self-curated student learning profile be utilized by universities to inform their recruitment process and provide a more robust means for achieving diversity goals? All of the admissions officers in this workshop articulated their institutions’ deep commitment to creating diverse cohorts of students, as measured along many different dimensions. Beyond simply illuminating differences across students, access to students’ micro-credentials could provide admissions officers with relevant information for reaching out to the students who might not typically consider applying to a particular institution. Using badges that represent a broader set of skills and mindsets could help to alleviate problems such as under-matching, where students apply to a less competitive institution because they do not believe they could succeed at a more competitive one. Under-matching is a pressing challenge to increasing the diversity of applicants to selective institutions, particularly for underrepresented minority students (Hoxby & Turner, 2015). Note that careful consideration of student privacy, established guidelines for data sharing, and reliable data security should be key concerns in implementing systems that use badges to promote “discovery” of students by colleges.

**The double-edged sword of context and uniformity**

Application numbers are currently increasing at a rate that stresses institutions’ admissions capacity, leading to an increasingly competitive application process in which there is less time allocated to each application. Given this increased competition, there is great potential to exacerbate existing inequities, and college admissions officers work hard to prevent this. Furthermore, the college admissions process has become a magnet for litigation. The need for fair and legally defensible contextual information is therefore needed now more than ever.

Admissions representatives frequently expressed the role uniformity plays in the efficient evaluation of applications. “Sense-making” of application factors is facilitated when those factors are recognizable and easily weighted relative to other application factors such as GPA and test scores. Adding non-uniform factors to
applications would therefore increase the time needed to make sense of applications and complicate the review process. Groups like the Mastery Transcript Consortium (http://mastery.org) recognize this challenge explicitly in their design goals. This raises key design-based research questions: How to design micro-credentials that allow for uniformity, while also facilitating the discovery of unique contextual information about learners. This type of oppositional tension indicates a need for new tool sets that allow for institutions to focus on their own priorities in admissions.

Additional care should be taken to ensure that the inclusion of added context is not made at the expense of currently understood factors. A micro-credential system should support or even improve the process of evaluating the following factors: GPA and class rank; pattern of grade improvement; quality of school curriculum; strength of senior year courses; demonstrated interest in an academic area; educational environment - curriculum, rigor, and percentage of students going to college; character - personality, geographic, and adversity faced; and demonstrated interest in the college or university. Many of these factors can be viewed through the lens of data analytics, representing opportunities for learning analytics researchers to collaborate with admissions officers to inform design work on micro-credentials.

The need for agreed-upon standards of endorsement and validation
If learning outcomes are not validated, it will be difficult for universities to accept micro-credentials as evidence of college readiness. What mechanisms might support ongoing and consistent validation of the multitude of learning outcomes that could be recognized through an evolving micro-credentialing system? The potential for achieving validation through the credibility of endorsers presents a possible solution. Partnerships such as the one between Mouse and Parsons School of Design demonstrate how an issuer can gain credibility by association with an already-established endorser of academic achievement. Institutional peer networks or regional consortiums are another possible mechanism for addressing this issue. Building and supporting such networks may be a topic for implementation or partnership research.

The potential of micro-credentials to affect academic pathways
Finally, the type(s) of learning fostered by a micro-credentialing system would likely be informal and interest-driven, or at least more so than the current system of grades and GPAs. One important question to consider is how well students who thrive in less-formal contexts might perform in the more formal and traditional curriculum that is typical of the student experience in higher education today. Workshop participants considered how higher education might need to change once students begin to be accepted based on their success in programs that award micro-credentials. The study and design of informal and interest-driving learning programs at the post-secondary level could provide valuable insight into the design of such programs. Going beyond the study of learning, research should also consider how these atypical programs fit within the infrastructure of traditional post-secondary schooling.

Scholars have begun to explore frameworks for improving student retention through the incorporation of micro-credentials into existing first-year experience programming (e.g., Mah, 2016). These explorations could serve as a starting point for imagining the place of alternative credentialing of learning in postsecondary education. Indeed, though this workshop focused on the process of gaining admission to post-secondary education, the introduction of micro-credentials as a mechanism for marking and communicating learning has the potential to lead to much broader shifts in the assessment infrastructures that shape the ways we teach and learn.

Conclusion
A key motivation for this workshop was to explore avenues for broadening participation in higher education. Micro-credentials are one possible vehicle towards the goal of including more diverse populations in college. Workshop participants agreed that there is great potential for digital micro-credentials in the higher education admissions process, assuming that the issues raised in the workshop can be adequately addressed. As the numbers of applicants to colleges increase, it is important that micro-credentials add critical and persuasive information without creating either bottlenecks in the review process or new inequities. To address this challenge, an ecosystem for validation and endorsement of micro-credentials needs to be developed.

We ended the workshop by encouraging participants to “think big.” We could view badges as “one more” way to indicate student accomplishment or readiness, and retrofit them into our existing college application process. Or, we could use the emergence of digital micro-credentials as an opportunity to rethink not just college
admission, but the structures that currently shape learning both within and beyond formal education. Change involves identifying and questioning both the components of the system and how they relate to each other. New organizational arrangements, along with (and sometimes encouraged by) new technologies, are leading to new “cultures” of learning (Thomas & Brown, 2011) and new opportunities for authentic connections across many dimensions of learners’ lived experience (Ito et al., 2013). Digital micro-credentials provide a way to bridge these different learning opportunities, helping lay a foundation for both life-long and life-wide learning with more equitable opportunities for all.

References


Mouse Badges (n.d.) Retrieved from https://mouse.org/badges


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