ALLIANCE FOR EXCELLENT EDUCATION

Expanding Education and Workforce Opportunities Through Digital Badges: AN EXECUTIVE SUMMARY

AUGUST 2013

mozilla

In the twenty-first century, learning takes place almost everywhere, at all times, on all kinds of paths, and at all kinds of paces. Digital technology and media allow young people and adults to access a wealth of information, analyze it, and acquire knowledge and skills at any time. Learning opportunities such as these break down the traditional confines of school walls and school days, and provide more options for anywhere, anytime learning. The removal of these barriers allows individuals to develop the kinds of content knowledge and skills, such as critical thinking, communication, and collaboration, that are essential for productive employment and effective citizenship in the twenty-first century, and it allows students to build on their own interests.

These new learning opportunities also raise some important questions: How can young people and adults demonstrate the skills and competencies they have developed? How can teachers and school officials—as well as college admissions officers and employers—ascertain that individuals have developed the knowledge or abilities they consider necessary? How can learners forge their own pathways to further learning?

As digital technology evolves, so does a promising solution: digital "badges".

WHAT IS A BADGE?

Badges are digital credentials that represent skills, interests, and achievements earned by an individual through specific projects, programs, courses, or other activities. There is a learning ecosystem behind digital badges that makes them powerful, connected credentials. This ecosystem is made up of badge "issuers," badge "earners," and badge "consumers."

Badge issuers are individuals, schools, employers, institutions, communities, and groups that create credentials to demonstrate mastery of skills and achievements that are of particular value to the issuer. The badge issuer determines the criteria for earning the badge, including the required curriculum, competencies, and assessments to determine if the earner has acquired the necessary skills for the badge.

Badge earners are individuals who are learning and want to demonstrate a complete picture of their knowledge, skills, and accomplishments to various audiences.

Badge consumers are formal and informal education providers, individuals, employers, communities, or other groups that have a need for, or interest in, people with the skills and achievements represented by a particular badge.

Badges are "open," meaning that they are not proprietary and are created using free software and an open technical standard. Open badges allow a person to verify his or her skills, interests, and achievements through credible organizations.[1] Badges are also interoperable and portable, meaning that they can be combined with other badges or "stacked" to demonstrate multiple achievements and can be shared with a variety of audiences.[2] Attaining widespread acceptance requires developing an open badge standard that ensures that all badges contain the

same information, including the criteria for earning and evidence demonstrating achievement of the criteria. Each badge can also include custom information to reflect its meaning, so badges do not need to be the same across organizations or sectors.

Further, the system should allow individuals to earn badges from various issuers, manage them in a collection, and display them across the web. To this end, the Mozilla Foundation has created the "Open Badges" standard.[3] Badges aligning with this standard go beyond just digital badges, and can operate at an ecosystem level.

The Open Badges standard also offers some baseline validation of the badge, including verifying that the badge was, in fact, granted by the issuer to the earner, as well as allowing for easy access to information stored behind the badge wherever it is shared across the ecosystem. The validity of the badge increases based on the quality and detail of this information. For example, the information behind the badge may be linked to accepted education standards, competency frameworks for specific fields or communities of practice, or new standards that emerge from an institution of higher education, a business, or a community of practice.[4] This conveys that the badge aligns with these standards and frameworks. Badges may also be endorsed by third parties to indicate their support for a badge; this endorsement is added to the information behind the badge.

A Real-World Look at the Badge Ecosystem

A badge program created by the National Design Museum and the Smithsonian's Cooper-Hewitt provides one picture of a badge ecosystem. These organizations have embarked on an initiative to integrate badging into the successful DesignPrep program for underserved New York City high school students. Badges will be awarded at increasing levels for achievement in design disciplines, overall design thinking, and competencies gained through in-person and web-based learning. Some of the highest-level badges will be accredited by professional organizations such as the Council of Fashion Design in America (CFDA) and AIGA, the professional association for design—bolstering resumes and higher education applications.

In this example, the badge ecosystem includes

- **Badge Issuer:** Smithsonian's Cooper-Hewitt, National Design Museum
- **Badge Earners:** New York City high school students
- **Badge Consumers:** Colleges, universities, and companies
- **Value of the Credential:** The highest levels of badges will link to CFDA and AIGA standards
- **Portability/Stackability:** The badges are stored on an open infrastructure, so high school students can look for other learning opportunities related to design thinking and competencies that also issue badges. Students can display all of these badges to potential colleges, universities, or companies, demonstrating their mastery of skills that are valued by design disciplines.

HOW DO BADGES WORK?

Promising work is being done with badges at the state and local levels through schools, informal education providers, colleges, universities, and businesses. Teachers in the Adams 50 School District near Denver, Colorado, are using badges earned by students in after-school programs to better understand students and adapt curriculum to create learning opportunities that build on these interests. These same teachers could themselves earn badges for reimagining learning and receive recognition for innovation and new skills important for facilitation and teaching in the twenty-first century.

The University of California, Davis, provides a good example of the use of badges to demonstrate the varying skill sets of students. In 2011, the John D. and Catherine T. MacArthur Foundation and Mozilla sponsored a competition for the development of digital open badges.[5] The UC Davis sustainable agriculture program was one of the winners. Instead of being built around requirements, majors, or grades in standard three-credit courses, the Davis badge system is based on the sustainable agriculture program's core competencies[6] and is designed to measure both formal and informal learning. One example of a core competency is "systems-thinking." A student can get a badge in systems-thinking, and when an employer is considering an applicant with this badge, it can link to the student's portfolio, where it will be possible to see traditional course work and grades as well as evidence of specific skills, such as in integrated pest management, which the individual may have learned by working on a farm.[7]

In addition, TopCoder, a platform for a community of software developers, algorithmists, and digital designers, holds online programming competitions that offer digital badges. Competition winners' products are often picked up by the commercial market, but winning the competition and acquiring a badge also is helpful information to companies looking for skilled employees.[8]

THE FUTURE OF BADGES

Federal policy is beginning to show support for badges. Within the U.S. Department of Education (ED), the Office of Vocational and Adult Education has commissioned a study to "investigate the feasibility of a badging system for the adult education ecosystem—learners, teachers, tutors, administrators, content developers, professional developers, transition specialists to training and postsecondary institutions, and employers—and make recommendations."[9] This study could open additional doors and lead to possible federal support of badges. ED also recently endorsed competency-based learning at institutions of higher education. In addition, various executive branch and congressional proposals open the door for badges through more competency-based solutions to education and training.

The private sector is also embracing the use of badges. This year at the Clinton Global Initiative America event, corporations and institutions gathered to concentrate on key industry and sector issues, and many made commitments that encourage the development of digital badges. Initiatives include working to define criteria for educational, professional, and industry credentialing; incorporating new methods of recognition into university admittance and credentialing and employer hiring and promotion; developing replicable platforms for creating secure digital badges to award, display, and confirm credentials; and establishing third-party endorsement for credible assessment tools.

CONCLUSION

Great potential exists for badges to have an enormous impact on the education, training, and workforce sectors. For policymakers committed to innovation, badges could be the next crucial step in education reform and economic empowerment. As momentum builds, policymakers must continue exploring the many possibilities that badges afford and break down federal barriers to implementation. Fidelity in implementation will be critical, especially stressing that badge issuers are using the open standard to ensure that the learners stay in control and badges remain interoperable. Additional information on efforts to ensure quality badge implementation can be found here:

http://openbadges.org

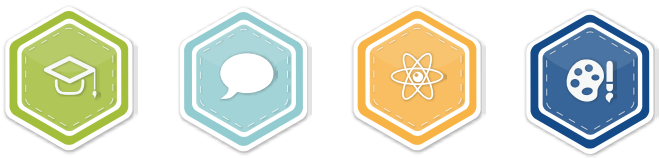
http://bit.ly/badgevalidation

https://wiki.mozilla.org/images/5/59/OpenBadges-Working-Paper_012312.pdf

http://hastac.org/digital-badges-bibliography

http://hastac.org/collections/digital-badges

This executive summary and the full report were produced by the Alliance for Excellent Education and Mozilla Foundation. Support for these publications was provided in part by the John D. and Catherine T. MacArthur Foundation. Opinions expressed are those of the authors and do not necessarily reflect the views of the MacArthur Foundation. To access the complete report, visit http://all4ed.org/wp-content/uploads/2013/09/DigitalBadges.pdf.



The **Alliance for Excellent Education** is a Washington, DC–based national policy and advocacy organization dedicated to ensuring that all students, particularly those underserved, graduate from high school ready for success in college, work, and citizenship. For more information, visit www.all4ed.org.

Mozilla, www.mozilla.org, has been a pioneer and advocate for the web and the core principles of the web—agency, openness, transparency, and privacy—for more than a decade. Mozilla creates and promotes open standards that enable innovation, access, and opportunity for all. Today, hundreds of millions of people worldwide use Mozilla Firefox to discover, experience, and connect to the web on computers, tablets, and mobile phones. **Mozilla's Open Badges** is a technical standard that makes it possible for learners everywhere to get recognition for lifelong learning of all kinds through digital badges, and then collect and share those badges across the web for real results like jobs. For more information, visit www.openbadges.org.

ENDNOTES

[1] See http://www.openbadges.org/about/ (accessed November 21, 2013).

[2] Mozilla Foundation and Peer 2 Peer University, in collaboration with the MacArthur Foundation, "Open Badges for Lifelong Learning," 2012, https://wiki.mozilla.org/images/b/b1/OpenBadges-Working-Paper_092011.pdf (accessed June 10, 2013).

[3] See https://github.com/mozilla/openbadges/wiki/Assertions (accessed June 10, 2013).

[4] Mozilla Foundation, "An Open, Distributed System for Badge Validation," https://docs.google.com/file/d/0BwJ_PQhV0lJTSnYtQzV5Q0FxNDA/edit?usp=sharing (accessed June 10, 2013).

[5] Digital badges aligning with the Open Badges standard.

[6] K. Carey, "A Future Full of Badges," *Chronicle of Higher Education*, 2012, http://chronicle.com/article/A-Future-Full-of-Badges/131455/ (accessed June 10, 2013).

[7] Ibid.

[8] TopCoder, "The Right and Wrong Way to Issue Digital Badges," http://www.topcoder.com/blog/the-right-and-wrong-way-to-issuedigital-badges/ (accessed June 10, 2013).

[9] U.S. Department of Education, Office of Vocational and Adult Education, Division of Adult Education and Literacy, "Open Education Resources to Support Adult STEM Teaching and Learning," http://www2.ed.gov/about/offices/list/ovae/pi/AdultEd/factsh/open-education-resources-stem-teaching.pdf (accessed June 10, 2013).

ALLIANCE FOR
EXCELLENT EDUCATION

mozilla