GAME CHANGERS

EDUCATION and INFORMATION TECHNOLOGIES

Edited by **DIANA G. OBLINGER**

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Game Changers: Education and Information Technologies

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FROM THE EDITOR

I would like to thank the many people who made this book possible, particularly Gregory Dobbin for managing the project and Karen Mateer for her research.

—Diana G. Oblinger

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CASE STUDY 6

Mozilla Open Badges

Erin Knight and Carla Casilli

MOZILLA OPEN BADGES is an initiative exploring alternative ways for learners to receive recognition for skills and achievements gained outside of the school environment, such as open credentialing and accreditation for all types of learning, including informal and interest driven. We are working to build an ecosystem wherein badges can be issued for this learning regardless of where or how it happens. These badges can be carried with the learner and combined to form living transcripts of skills and competencies that tell a more complete story about the user.

What Is a Badge?

A "badge" is a symbol or indicator of an accomplishment, skill, quality, or interest. From the Boy and Girl Scouts to PADI diving instruction, to the more recently popular geolocation game Foursquare, badges have been successfully used to set goals, motivate behaviors, represent achievements, and communicate success in many contexts. We are exploring the use of digital badges—online representations and records of achievements and skills—for learning contexts.

Need for New Kinds of Learning

In today's world, learning can look very different from how it was traditionally imagined. Learning has evolved from simple "seat time" within schools to extend across multiple contexts, experiences, and interactions. It is no longer just an isolated or individual concept, but is instead inclusive, social, informal, participatory, creative, and lifelong. It's no longer sufficient to think

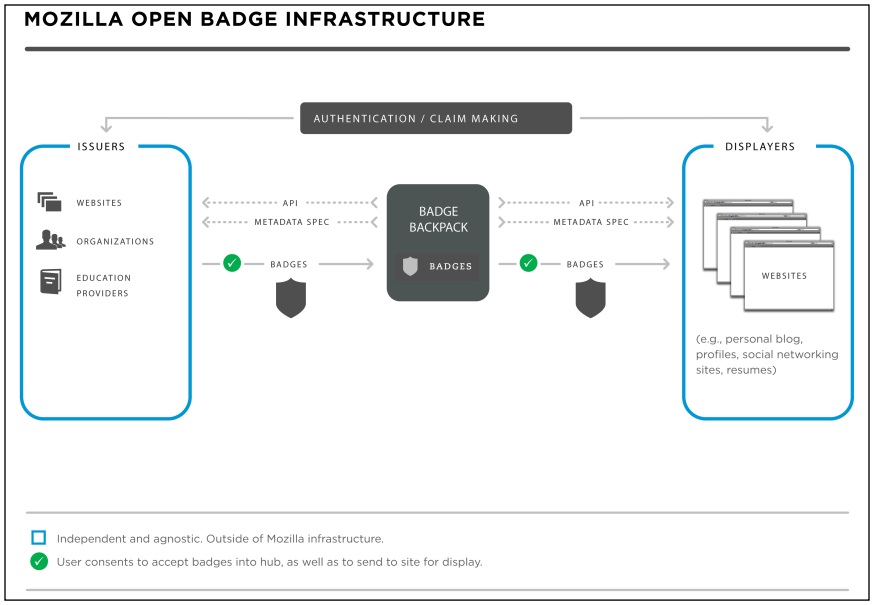
of learners simply as consumers—now they are active participants and producers in an interest-driven learning process. A "learning environment" no longer means just a single classroom or online space, but instead encompasses many spaces in broader, networked, distributed, and extensible environments that span time and space. And across these learning environments, learners are offered multiple pathways to gain competencies and refine skills through open, remixable, and transparent tools, resources, and processes. In this connected learning ecology,[1] the boundaries and walls are broken down, expanding the potential learning landscape for each learner.

Much of this shift is due to the fact that our world is very different than the one in which the current education system was developed and standardized. With the advent of the web and its core principles of openness, universality, and transparency, the ways that knowledge is made, shared, and valued have been transformed, and the opportunities for deeper and richer learning have been vastly expanded. By enabling increased access to information and each other, the open web has provided an effective platform for new ways to learn and new skills to achieve.

And yet in the current formal education and accreditation systems, much of this learning goes undetected and unrecognized. Institutions still decide what narrow types of learning "count," as well as who has access to that learning. We know that lecture-based learning and multiple-choice exams represent a tiny fraction of what we learn during our lives, and yet these are the types of learning that are formally recognized and overwhelmingly required for advancement. Without a dependable, recognized way to capture, promote, and transfer all of the learning that occurs within this new, more broadly connected learning ecology, we limit that ecology by discouraging self-driven engaged learning, isolating or ignoring quality efforts and interactions and ultimately preventing learners from reaching their full potential.

Badges can play a crucial role in the connected learning ecology by acting as a bridge between contexts, making these alternative learning channels and types of learning more viable, portable, and impactful. Badges can be awarded for a potentially limitless set of individual skills—regardless of where each skill is developed—and a collection of badges can begin to serve as a virtual résumé of competencies and qualities for key stakeholders, including peers, schools, or potential employers. Specifically, badges support capturing and communicating learning paths, signaling achievement, motivating learning, and driving innovation and flexibility, as well as building identity, reputation, and kinship. Thus, badges can provide a way to translate all types of learning into a powerful tool for getting jobs, finding communities of practice, demonstrating skills, and seeking out further learning.

Figure 1. **Mozilla Open Badge Infrastructure**



The Open Badges Approach

To contribute to and support this important and still-incipient ecosystem, the Mozilla Open Badges initiative is both developing badge systems for Mozilla and affiliate programs, as well as building the core infrastructure to support the ecosystem (see Figure 1).

The initial badge system developed was for the School of Webcraft, a partnership between Mozilla and Peer 2 Peer University (P2PU), offering free peer-learning courses and study groups on web-developer training. We designed a pilot that consisted of fourteen badges, including hard-skill badges such as *JavaScript*, value badges such as Accessibility, social or peer badges such as Good Collaborator, and participation badges such as Active Responder and Peer Editor.[2] The goal was to use badges to capture hard and soft skills that are important for web developers, as well as to guide community-beneficial behavior. We also implemented various approaches to assessment that reflected the nature of the community and learning experiences that were occurring. All hard skills were assessed through authentic challenges that immersed learners in the technology or allowed them to use existing work, and submitted work was either peer assessed for basic-level skills, or "guru" or "has-the-badge" assessed for expert level. Peer assessment was a critical part of the

pilot since P2PU is built around peer learning and because web development is such a social discipline. Peer badges were also built around the peer-to-peer interactions and were awarded directly from one peer to another. Finally, participation badges were based on stealth assessment and data-tracking logic built into the learning environment. While the sample size was small due to constraints of the course cycles, the pilot resulted in a solid proof-of-concept of the potential for badges and these approaches to assessment. Learners liked the experience and reported seeking out specific learning opportunities in order to earn badges, as well as learning through the peer-assessment process (their only main complaint was that they wanted more badges). They also used badges to find mentors and to better understand their role in the community. We are currently building on this pilot to include more badges and expand the notion of challenge-based assessments. We are also working to build a Mozilla core set of web-literacy badges that will be rolled out through School of Webcraft as well as other learning platforms.

The other piece of the Open Badges initiative is the ecosystem infrastructure. The Open Badge Infrastructure (OBI) will provide the underlying open technology and standardization to support badge issuers and badge displayers, while also providing a repository for badge collection and management for each learner. The OBI includes a badge metadata specification, which defines what information must be included with a badge when issuers push badges in and displayers pull badges out. This specification ensures that each badge will carry with it all the information needed to understand that badge throughout the ecosystem. Information such as issuer, issue date, expiration date, and badge criteria are embedded within each badge—each badge thus becomes not just an image, but instead is a gateway to the evidence and value information behind the badge. The OBI also includes the Badge Backpacks, which are personal badge repositories for each learner. As learners earn badges from an array of issuers and across skill types, those badges are then collected into their Badge Backpack, where the learner can combine and manage the badges, set privacy controls, and share badges with displayer sites and organizations. OBI, then, supports learning across a multitude of issuers in the ecosystem and allows learners to translate the value of that learning into real results such as jobs, credits, or other kinds of advancement.

For more on the Open Badges initiative, see http://openbadges.org.

Evidence of Effectiveness

From our work with a broad set of other organizations, educators, developers, and researchers to test this brand-new experiment, it has become clear to us that learning is happening everywhere—not just within formal accreditation systems—and that a great deal of this learning is currently unrecognized. Our conversations with employers have revealed that they are looking for a new, more granular evidence-based system to help them better vet employees and understand their skill sets, particularly their social skills. Our pilot efforts have demonstrated that badges can motivate learning and build reputation within communities. And, the combination of overwhelming demand and positive feedback we have received tells us that there is interest in exploring this initiative further. Still, while there is a great deal of evidence pointing toward the potential success of these efforts, we are still very much in the early building stages. This is ultimately not a Mozilla-only project, but a much wider community project, and it will rely heavily on this wider community for success.

There are many unanswered questions and challenges to be confronted. Most of these will have to be tackled through the exploration process—by being as open and transparent as we can about our own work, assumptions, research and findings, and so forth.

This effort is about building an ecosystem. We are providing the infrastructure and one example of a badge system. Ideally, many learning institutions and providers will become part of this ecosystem by building their own badge systems. Because our aim is to support learners wherever and however they are learning, we believe that the more organizations, groups, and individuals that participate in the ecosystem, the better.

Notes

1. Our approach to badges aligns with the principles of "connected learning" being defined by the MacArthur Foundation's Digital Media and Learning Initiative. "Connected learning" is (1) participatory, demanding active social engagement and contribution in knowledge communities and collectives; (2) learner centered, empowering individuals of all ages to take ownership of their learning linked across a wide range of settings—in school, at home, and informally with friends and peers; (3) interest driven, propelled by the energies of learners pursuing their unique passions and specialties; and (4) inclusive, drawing in people from diverse backgrounds and walks of life across generational, socioeconomic, and cultural boundaries.
2. The pilot environment can be accessed through http://badges.p2pu.org.

Erin Knight *currently spearheads the learning and badge work at Mozilla, overseeing the building of learning pathways for webmaker skills, as well as the development of the Open Badge Infrastructure. She lives in Portland, Maine, with her husband, new baby son, and two chocolate labs.* **Carla Casilli** *leads Mozilla's Open Badge Infrastructure project and acts as the liaison to Mozilla's Learning Group. She oversees communication outreach efforts and strategizes on badge assessment, implementation, and application. Casilli has an M.A. in media psychology and social change and a B.F.A. in graphic design and writing.*