World Conference on Technology, Innovation and Entrepreneurship

Postgraduate Digital Badges in Higher Education: Transforming Advanced Programs Using Authentic Online Instruction and Assessment to Meet the Demands of a Global Marketplace

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Abstract

Post-secondary education is a massive industry undergoing significant growth. The demand for post-secondary education has never been higher, and it is increasing every year (British Council, 2012). Moreover, globalization and technology are transforming this marketplace in dramatic ways. In general, the higher education marketplace is becoming more open and dynamic as traditional geographic barriers are disappearing. These transformations are leading to increased levels of international outsourcing and partnerships to develop and deliver education. In addition, the global workplace itself is becoming more dynamic; specifically, the individual demand for ongoing high quality lifelong education is increasing as the nature of jobs and work skills continuously changes (Hanover Research Council, 2010).

This increasingly open global marketplace for post-secondary education requires new innovative educational programming through flexible and innovative delivery methods. This is especially true in professional and applied fields such as engineering, business, management, and health administration. Educational leadership, in particular, could greatly benefit from more innovative programming, since the next generation of educational leaders need training and direct experiences in new educational delivery models, particularly for the quickly globalizing nature of post-secondary education, but eventually for leadership in the primary and secondary education sectors as well.

Keywords: performance assessment, digital badges, education, innovation

1. Introduction

One powerful method of addressing this new marketplace is through a system of digital badges. Digital badges have emerged on the internet to recognize and communicate achievement in a variety of learning contexts, but
particularly within informal learning contexts. They are currently implemented as “micro-credentials” to convey skills acquisition and academic achievement with more transparency (Acclaim, 2013). Although initially dismissed by higher education practitioners and scholars as reducing learning to overly discrete skill sets and/or focusing on lower level skills, many higher education institutions are now beginning to re-examine the potential of digital badges in the context of digital portfolios (see below) to support high level knowledge and skill development in formal education settings. Badging has also attracted some powerful political advocates, including former U.S.A. President Bill Clinton and U.S.A Secretary of Education Arne Duncan. Organizations outside the field of higher education are also creating badge systems, including the National Oceanic and Atmospheric Administration, The U.S.A. departments of Veterans Affairs and Education, NASA, the Corporation for Public Broadcasting, and the movie studio Disney-Pixar (Tally, 2012).

2. Digital Badges

Digital badges are graphical representations of an accomplishment, but in particular, they typically reflect demonstrated skills through a performance of a complex task. They are created, awarded, displayed, and stored online. Their title comes from the felt patches that the Boy Scouts of America or Girl Scouts of America distribute for demonstrating certain skills, such as building a fire, or tying a set of knots. In many ways, the use of the online digital “images” associated with badges is more powerful than traditional grades or scores on a test for a variety of reasons:

1) Badges represent demonstrated performance of skills as opposed to traditional recitations of knowledge;
2) Badges are standards-based or criterion-based, not normative-based assessments; thus, they provide a more universal and consistent view of true accomplishment;
3) Badges are “open”: they encourage students to take ownership over their learning as a publicly-available process;
4) Open badges enable learning as a social process, where assessments from faculty members and peers, as well as self-assessments, can be part of a final review process for the awarding of badges;
5) Badges easily allow connections to “metadata”, such who issued the badge, how it was earned, when it was earned, and most importantly, which national/international standards it addresses and how;
6) The “metadata” in badges encourage meta-cognition as students focus on their intrapersonal and interpersonal development;
7) Badges, as visual symbols, are powerful vehicles for conveying shared meaning: if these symbols are combined into an integrated “dashboard”, they can create a comprehensive visual narrative of academic development and accomplishment.

In terms of the first of these characteristics, Bill Watson, one of the creators of a badge system at Purdue University, says: "Typically in courses, we have a number of very broad learning goals, and grades are given out on student assignments tied to these broad goals. But really, it is more a comparison of students rather than a focus on student learning and attainment of desired learning outcomes. Badges help instructors encourage students to demonstrate how they have met very specific learning objectives through actual performance" (Tally, 2012). U.S. Secretary of Education Arne Duncan has also linked badging to competency-based education, saying it “can help speed the shift from credentials that simply measure seat time, to ones that more accurately measure competency” (Kilb, 2011).

In terms of the final characteristic listed above, Michael V. Reilly, executive director of the American Association of Collegiate Registrars and Admissions Officers claims that: “The transcript is pretty limited in what it does,” he says. “Students want a broader representation of their experiences” (Fain, 2014). Joanna Normoyl, the experiential and digital media learning coordinator at the UC-Davis’ Agricultural Sustainability Institute, contends that: “Badges can tell a different story.” She argues that they allow students to “differentiate themselves and tell a narrative” (Fain, 2014).

The Mozilla Foundation, a pioneer in open-source technology, has tried to create a platform for creating these narratives with its open badges project, the “Mozilla Open Badge Infrastructure” (see, for example, http://openbadges.org) . The foundation has created a “backpack” that learners can use to display badges on a résumé or via social networks. One of the most well-known uses of the Mozilla Backpack in higher education is
Purdue University's “Passport” platform (http://www.itap.purdue.edu/studio/passport/). Yet, this is only one example of how badges are being implemented in higher education.

3. Digital Badges in Higher Education

Badges are currently in use and/or in development at institutions such as MIT, Carnegie Mellon, the University of California-Davis and Seton Hall, as well as Purdue University (Fain, 2014). The University of California at Davis and Purdue University in particular have been pioneers in developing extensive systems of digital badges in higher education. The badge systems at these institutions have typically complemented, not replaced, traditional degree programs. For example, at UC-Davis, the badges are part of the undergraduate major in sustainable agriculture and food systems. These programs are competency-based and hands-on, with extensive experiential learning that occurs outside the classroom, through internships and fieldwork. The badges provide an excellent vehicle for these types of learning modalities because they are assessments of performance-based and authentic activities.

These existing badge programs share many qualities with almost all higher education programs. They address universal core competencies: experimentation/inquiry, systems thinking, ethical behavior, interpersonal communications, strategic management, civic engagement and professional development. In order to expand the use of these badge programs, educators need to create flexible systems that allow students to describe their learning, and integrate all of these competencies, in ways that make sense to faculty, employers and themselves. The key to this challenge is to create rigorous badging systems grounded in national standards, as well as to provide the flexibility to tailor the badge structures to the values of each institution, its faculty, its students and a wide range of employers.

To do this, badges should be integrated into digital portfolios. Digital Portfolios are a key bridging strategy for integrating digital badges into existing higher education degrees. Also known as electronic portfolios, e-portfolios, or online portfolios, digital portfolios are well established in many higher education programs.

4. Digital Portfolios as Authentic Learning in Higher Education

In general, the digital portfolio is a linked collection of student work that allows students to organize, archive, and display their work in multimedia and hyperlinked forms. The key concept here is “linked”. Portfolios are not just collections of discrete items. They are integrated “narratives” that convey the depth and breadth of learning as a holistic and ongoing process. There are three principal types of digital portfolios: developmental/working portfolios, assessment portfolios, and showcase/career portfolios. However, these are not mutually exclusive categories. Carefully designed digital portfolios can address all three of these purposes.

There has been a significant amount of research establishing the value of digital portfolios. For example, comparative analysis of paper-based portfolios and digital portfolios in the same setting has indicated that the use of a digital portfolio leads to significantly better learning outcomes for students (Van Wesel and Prop, 2008). Digital portfolios have been shown to enhance the following: efficiency of work, effectiveness of instruction, and transformation of learning environments (Joyes, et al., 2010). Digital portfolios have also been shown to support higher order skill development in postsecondary education environments (Drury, 2006).

One of the earliest and well-known examples of a holistic digital portfolio is the “Diagnostic Digital Portfolio” (DDP) at Alverno College (http://ddp.alverno.edu). This web-based system was first implemented in 1999. It “enables Alverno students to follow – at any time or at any place - their learning progress throughout their years of study. It helps students process the feedback they receive from faculty, external assessors and peers. It also enables them to look for patterns in their academic work so they can take more control of their own development and become more autonomous learners.” Another common use of digital portfolios is in teacher-training courses. Many preservice teachers are asked to compile a digital portfolio to demonstrate competencies needed to gain teaching
certification or licensure. However, digital portfolios are increasingly being used in many other disciplines such as communications, business, nursing, engineering, mathematics, art, and architecture. There are many other examples of digital portfolios in higher education at such institutions as Johns Hopkins, University of British Columbia, Virginia Tech University, Louisiana State University, University of Washington, Illinois State University, Portland State University, Kalamazoo College, St. Olaf College, and many others (CCCCC, 2015).

Clearly, digital badges can enhance the framework of digital portfolios because they can act as top-level visual organizers for the portfolio through a “learner dashboard”. The badges provide a quick and powerful visual review of the student’s accomplishments, as well as a clear and organized set of access points into the portfolio. They add to the power of digital portfolios by allowing them to become even more media-rich and “tiled”.

5. Authentic (Performance-based) Learning in Higher Education

Of course, digital portfolios and digital badges are only as valuable as the learning that they represent. The goal of digital badges has always been to reflect mastery of “authentic” tasks. Similarly, the goal of digital portfolios has been to reflect learning as a holistic and developmental process. These approaches to authentic assessments focus on contextualized tasks, enabling students to demonstrate their competency in more authentic, “real world”, hands-on settings. Meg Ormiston argues that: "Authentic learning mirrors the tasks and problem solving that are required in the reality outside of school" (Ormiston, 2011). In order to have students demonstrate their learning in these authentic tasks (through digital badges embedded in digital portfolios), instructional online environments must also be more authentic.

So, what does an “authentic online instructional environment” look like? In education, “authentic” learning has a long history. In the early 20th century, William James emphasized that learning must be grounded in experience and practice: “(Knowledge) is verifiable to the extent that thoughts and statements correspond with actual things, as well as the extent to which they ‘hang together,’ or cohere, as pieces of a puzzle might fit together; these are in turn verified by the observed results of the application of an idea to actual practice” (James, 1907). John Dewey emphasized that education must be “student-centered”, “hands-on”, and ultimately, focused on social issues (Dewey, 1900; 1902). Building upon these perspectives, Vygotsky emphasized the social nature of learning (Vygotsky, 1978). Two seminal movements in education have extended these key ideas: experiential education (see, for example, Kolb & Fry, 1975) and action learning (Revans, 1982).

Experiential/action learning is at the core of all authentic learning. Unfortunately, for many educators, online learning brings to mind largely asynchronous online interactions through discussion boards and file sharing. However, authentic online instruction requires social and collaborative spaces for immediate and highly interactive online dialogue. This demands synchronous multimedia (including both audio and video) online classrooms with student-facilitated interactive “white boards”, “break-out” rooms, polling features, and continuous access to internet-based resources. Instruction must include cooperative learning activities organized around real-world service learning or internship-based case studies and complex simulations (the latter often modeled after online multiplayer gaming environments). These learning environments can now be quite easily created with existing learning platforms.

6. New Directions: Triple Helix Partnerships - the Entrepreneurial University

These new online learning environments allow educational institutions to meet the needs of the global marketplace, but to deliver these learning environments, educational organization must develop new innovative partnerships. As mentioned earlier in this analysis, the online international education market is exploding: “the online education service provider market alone – which includes Pearson, 2U, and countless others – is a sector now generating US$500 million in revenue. In international education, veterans such as Kaplan and Study Group compete alongside...
upstarts such as Shorelight Education to help universities tap into global growth opportunities” (Gallagher, 2015).

In order to be successful, new programs must not only be innovative and authentic, but they must be accessible, cost-efficient, and market-oriented. Thus, successful programs must combine expertise in instructional delivery and student assessment, with a market orientation and a public service component. To accomplish this, instructional programs must involve partnerships, but these partnerships must extend beyond the current array of “turn-key” collaborations, outsourcing arrangements, and privately funded joint ventures. The partnerships must consist of the triple helix of service providers: namely, traditional post-secondary institutions, government-based organizations, and the private sector (Etzkowitz, 2008). These more comprehensive partnerships will transform online education from being perceived as experimental and marginalized, to a core position within the post-secondary education sector.

An example: Educational Leadership Badges Leading to a Diploma

As an illustrative example, the authors, through an emerging partnership between Eastern Michigan University and the National Council for Professors of Educational Administration (NCPEA), are creating a set of modules leading to a postgraduate diploma in Educational Leadership. The goal of this diploma is to provide core training in educational leadership for an international context, and will lay the foundation for expanding educational leadership programs into various countries where the perceived demand and need is significant. Each module in the diploma will have an associated digital badge, reflecting educational leadership competencies as captured in the Interstate School Leaders Licensure Consortium (ISLLC) and Educational Leadership Constituent Council (ELCC) standards.

The three modules are: “Systems thinking”, “Collaboration, Conflict Resolution, & Shared Accountability”, and “Data Collection, Missioning, & Visioning”. These modules represent a tiered curriculum and are linked through an online digital portfolio, based upon real world tasks grounded in students’ work environments. These modules will be piloted in Fall, 2015.

7. Conclusion

Digital badges can be structured to help transform current degree programs to be more flexible, affordable, accessible, adaptive, and marketable in the global marketplace. These digital badges can be the foundation of more innovative and authentic instruction and assessment in advanced higher education programs, particularly if they are integrated into structured digital portfolios that support higher order skill development. Overall, when combined with the use of standards-based performance assessments and authentic instruction within traditional certificate and degree programs, digital badges have enormous potential for increasing the flexibility and relevance of higher education degree programs in order to address the challenges of the new global marketplace in education.

References:


