Badging the library: Are digital badges the next innovation for library skills and training?

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Abstract:
Libraries are frequently at the forefront of innovation and uniquely positioned to develop and deliver new technologies. This paper evaluates the benefits of one such innovation, digital badges. It will explore how badges can be applied in the library and higher education environment by examining the potential of badges to provide verified credentials to students for completing 'soft skills' programs, using a case study from the Australian National University. The paper will discuss the challenges involved in implementing a cohesive credential issuing system within a university and suggest areas for future investigation on digital credentials will be explored.

Introduction

The library sector is facing increasing demands to offer digital literacy training and is innovating its processes utilising technology. Adapting to the needs of clients in the library has accounted for significant changes to the library environment in terms of responsiveness and flexibility to digital innovations (Johnson, Adams Becker, Estrada, & Freeman, 2014b; Beetham, McGill, & Littlejohn, 2009; Secker & Coonan, 2011). As libraries are often the nexus between communities and access to digital resources, they have had to respond to the challenges of rapid technology change and the need for digital literacy skills of the community (Aabø, 2005; Kinney, 2010; Scott, 2011; Warburton & Macauley, 2014). This has led to the need for training to include a more diverse multimedia content (Scales, 2014). In addition to delivering key training on digital skills, the training itself is increasingly offered online (Anderson, 2008; Mackenzie & Martin, 2014).

These changes are also increasing demands for library training to adapt to the needs of digital teaching and learning environments. This includes updating the digital skills of academic and library staff, as well as students, in order to meet their changing client needs (Johnson et al., 2014b).

The Australian National University (ANU) Library recognised a growing need to deliver information literacy training in online and blended modes to support off-campus research students and to provide flexibility for on-campus students. For research students in higher education, library skills training has been an important link to student outcomes in relation to early research skills training, such as conducting literature reviews (Warburton & Macauley, 2014). Additionally, international students indicated a need for verified evidence of their research skills that could be shown to employers overseas. It is advantageous to students and future employers for students to be able to provide verified evidence of their specific skills, gathered as part of their co-curricular training in addition research degree (Group of Eight, 2013).

To address this need, a collaborative project was developed by the ANU Library, the Research Skills and Training team, and the Digital Learning Project (located in the College of Asia and the Pacific) to explore the use of open badges in research education. The project was granted funding as a seed project by the Office of Learning and Teaching.

The 'INSIGNIA' Project
The INSIGNIA project was created to evaluate ways of providing higher degree research students with a digital verification of their co-curricular achievements, using open badges.

Open badges are an innovation, supported by the Mozilla Foundation, to provide students with digital evidence of their skills, experiences, and achievements. A type of 'micro-credential', badges include metadata detailing the requirements or criteria in order to receive the credential, and can be shared in portfolios or social media profiles to demonstrate verified achievements. While badges can be used as part of curriculum recognition, they are most commonly applied to professional development and co-curricular skills at this stage in their development (Bull, 2014). Co-curricular badges can provide students with rich evidence to employers of their participation in university programs, which is verified by the institution, and help communicate transferable skills outside of academia (Johnson, Adams Becker, Estrada, & Freeman, 2014a). For example, successful completion of a library training course could earn a badge for students to display as part of a professional portfolio or on a social network such as LinkedIn. With the future creation of a micro-skill learning ecosystem, university alumni could be provided with official badge transcripts detailing evidence of their achievements.

Figure 1: INSIGNIA's badge for library research skills.

The INSIGNIA project was designed to support research candidates in the development of key transferable skills around digital literacy and research integrity, evidenced by digital badges. Unlike other digital badging projects, this project was not primarily interested in the potential of digital badges as alternative curriculum delivery modes, but as a way of enhancing the learning experience by making research degree study easier to navigate. Research candidates in Australia do not often have significant amounts of coursework; most work on acquiring the skills they need to complete a single, defined project. This approach has drawbacks. It can be difficult for them to identify skills deficits (in other words, for them to know what they don't know), especially in areas like library database use. Students looking for ways to merely complete a project tend to find expedient ways of working with library resources, rather than taking the time to engage in deep learning with long-term benefits. Given the increasing complexity of the digital environment, badges could provide 'anchor points' or markers in this complex learning landscape.

To this end, the project had the following aims:

1.   evaluate digital badging systems,
2.   liaise with Marketing and Legal teams to create badges,
3.   set up a system for students to receive badges,
4.   design online versions of digital library skills training and research integrity training for research students,
5.   attach badges to these training courses and evaluate the student uptake and response.

Badging the Library

Badges seem a natural fit for libraries, as they allow clients to receive official recognition for their engagement in library programs and training without the attendant coursework apparatus. As libraries often stand outside of the core curriculum, they would seem a natural place to test a micro-credentialing system without interfering with existing course and credit requirements.

Public libraries and library associations, particularly in the United States, have been the earliest adopters of badges, and have led innovation in this area. The Chicago Summer of Learning (http://www.chicagosummeroflearning.org/earn) demonstrated how badges could be released on a large scale. These library courses provide activities appropriate for their youth audience on subjects ranging from chemistry to effective teamwork to web design (see below).

Figure 2: The "Web Designer" badge from the Chicago Summer of Learning initiative.

These badges can be "stacked" together to demonstrate a suite of skills and achievements when displayed together in a student's' portfolio, for the benefit of teachers, employers, and librarians. Analytics are available which show that badges have been issued and in what combinations, these are a useful reporting feature.

Encouraging Engagement with the Library

In addition to providing evidence of achievement, badges are often included as a motivational strategy for students to complete courses, or complete additional components in order to receive recognition. There is some early evidence that

granting badges to MOOC participants may increase engagement and completion rates (Lokuge & Gregory, 2014). There is growing research on the use of play in education to motivate and encourage students to participate (Abramovich, Schunn, & Higashi, 2013; Ahn, Pellicone, & Butler, 2014; Jones & Altadonna, 2012). Offering different levels of difficulty can further expand this. Badges with difficult requirements or assessment can add a level of prestige if they are only rarely granted. For example, the 'LEGENDARY' programmers' badge from Stack Overflow have released 102 badges amongst 1.4 million users and requires either hundreds of hours posting answers for colleagues or provided outstanding expert technical responses (OnlineCollege.org, 2013). Different skill levels for badges can be useful since these can 'gamify' training: badges from beginner to expert in difficulty can be stacked towards a higher level of achievement. When designed effectively and appropriately, education games can provide an alternative to traditional skills training.

The INSIGNIA project provided an opportunity to design library modules using gamification mechanics and multimedia tools: using badges, videos, and quizzes. The new modules provide a rich alternative to text-based support documentation and were selected from feedback data our INSIGNIA group. Data from our research students' focus group supported including multiple library services and resources and a new training module would need to include these options. As a result, training would need to include both searching skills, targeting research skills, library services as well as other relevant research sites such as the National Library of Australia, Trove. Other feedback included requests for training in research use of reference management software like EndNote, as well as other software packages that support researchers. Lastly, they requested that the promotion of these courses be linked to stages in research, particularly in regard to the first two years of PhD training (INSIGNA Focus Group Data, 2014).

To address these needs, introductory learning modules were developed on the topics of Library search skills and strategies, using EndNote, and increasing research impact. The library modules were developed for new graduate students enrolled in early 2015. It is too early, at this stage, to evaluate the results regarding the success of gamification for these courses.

"Serious" Badges

Despite the enthusiasm of the project team, consultation with ANU research revealed they had concerns around the authenticity and 'seriousness' of badges. While students were interested in receiving verified evidence of their engagement with the Library and other co-curricular programs, the students were adamant that any badges had to carry the weight and status of the university brand. When shown badges from the Chicago Summer of Learning (see Fig. 2), one student commented: "I think the graphic stuff is a little bit gimmicky… I think part of the way you can show that it's an institution is it doesn't have any fun images." Another student contributed, "We don't want it to look like it was fun being at ANU! We want it to look like it was hard work." (INSIGNIA Focus Group Data, 2014)

These comments reveal a key issue for the success of any badging project: the badges must have value within the context of the issuing institution, and they must represent the institutional brand and reputation in their design. As with anything, first impressions count: there was a strong feeling that the design of the badges should clearly display the university's logo and name to provide trust and verification on the skills learned.

Universities take their branding very seriously, and uses of the official logo and other branded elements is tightly controlled. A cooperative and understanding Marketing team at the ANU was vital to the success of this project. Despite legal limitations which meant the officially branded elements could not be used due to intellectual property concerns, the Marketing team worked to develop "Brandy-looking things while not using any elements of the 'official Brand' ", according to the Head of Marketing (Interview, 2014). (See below, Fig. 3.)

Figure 3: Sample badge designs provided by ANU Marketing.

With the assistance of a specialised designer, the Marketing team created a flexible badge taxonomy, using icons to represent the type of skill represented, stars to indicate the level of complexity, and a scroll feature that evokes the official ANU logo. As indicated above, further consultation with students will be required to evaluate how effective these designs for both students and external viewers of the badges.

Key Issues for this project

Despite the seemingly obvious gap that badges could fill, utilising badges at the ANU was not a straightforward process. In fact, badges have been acknowledged as a disruptive technology (Carlson & Blumenstyk, 2012). As badges are designed to

move across systems, from where they are achieved into a public portfolio, they are not an easy fit with closed, independent university systems.

Badges did not fit into the existing library training systems. Training needed to be altered to suit badges as they require verification that skills and training had been met. Future development of a strategic badges system would require investment in a badges system with learning modules with well-designed, flexible online assessment that meet the requirements for the badge. For our project, new courses needed to be created in the closed learning management system (LMS), Moodle. While this meant courses that could be completed relatively quickly compared to the technical requirements for other badging systems, there were some disadvantages.

The ANU Library has a strong preference of open access training, however this could not be achieved within the agreed project timeline. Given the expertise of the team and timeframe for the project, using the Moodle platform most viable option. Creating the courses in Moodle requires university verification and has meant that the course will be only accessible to ANU students and staff. Future development in badging would need to expand to include open access options in order to reach a broader audience. Further, the activities to earn badges have the potential to be engaging, interactive and use principles of authentic learning.

Another constraint identified by the project has been that the LMS has institutional, technical and legal constraints when using third party tools (Mewburn, Freund, & Rutherford, 2014). There are many barriers when requesting technical changes since these changes can destabilise the Moodle platform and have to be tested extensively before deployment. For example, any changes require complex committee approvals and can take several years before implementation. This raises question of how agile the system can be when innovation or trialling new tools is needed (Mewburn, Freund, & Rutherford, 2014).

Another significant concern was the importance of meeting legal requirements that arise when using resources that maintain the integrity of an international third party. Legal concerns such as privacy need to be addressed concerning the transferral of student data, particularly when the third party concerned is not based in Australia. Negotiating these requirements while meeting project deadlines was a primary concern for our pilot project (Mewburn, Freund, & Rutherford, 2014). There is an inherent tension between educators pushing for the adoption of new technology and innovations versus the legal constraints designed to safeguard privacy and closed, institutional systems. For new innovations such as badges to be embedded in university systems an organisational and cultural shift is required for more flexibility to respond to the increasing demand for a digital teaching and learning environment.

Badge Ecosystem

One of the limitations of a small seed projects has been the inability to create a badges ecosystem that can be embedded in the university website and training systems. This would provide a more encompassing context and learning environment for the modules and badges as well as a trustworthy verification of badging achievements. There is a need for a badge ecosystem with coherent, structured training options in different categories with clear levels and skill levels (Ahn et al., 2014; Finkelstein, Knight, & Manning, 2013; The Mozilla Foundation, Peer 2 Peer University, & The MacArthur Foundation, 2012). A larger badge ecosystem across institutions, with transferable credentials across regional, national

and international borders would make badges more recognisable and effective. Given funding restriction in most universities and institutions, a recognised standard would be beneficial in sharing training and resources.

Badges as a single digital object have a limited benefit for students without an online environment for them to be shared, curated and displayed. Badges are made to move and not as useful in isolation. While the badges created during our pilot could be shared on social media and networking sites like Facebook or LinkedIn, a future priority for the expansion of badges would be a site for the display and long-term curation of badges such as ePorfolios or Mozilla Backpack. This would better support the principles of lifelong learning since the display and curation of badges can be refined over time to reflect new expertise. Training and guidance for students will need to be provided as there are limited examples of best practice.

Who are the badges designed for?

There is some tension in designing learning modules to cater to the different needs of both academic courses and employers (Hickey et al., 2014). Badges should be embedded into the learning context for students, but also need to be understood by future employers and members of the public. ANU students in our focus group identified the library as the appropriate place for badges to be delivered, due to the reputation and standing, but also its position outside of core curriculum.

Recommendations

Specialised skills, resources, systems
Designing new system takes time, expertise and resources. Given the funding pressure on educational institutions, a strategic and practical design and close collaboration with other badging institutions is strongly recommended.

Funding and support from senior management
Support from senior management was a critical to the success of the INSIGNIA project. When organisational, technical or legal barriers arose, support from senior management ensured the project met its requirements.

Feedback and consultation with students
Feedback from students highlighted the need to provide a variety of options for the credentialing and verification of course completion. The suggestions raised in our focus group determined the selection of course materials and will continue to inform our project. Other concerns raised by students highlight the diversity of opinions surrounding the digital and print world. For example, one student requested that the badges be printable as well as being available online (INSIGNIA Focus Group Data, 2014).

Privacy and Legal
It is important to design a teaching and learning ecosystem for badges to exist and be shared without breaching privacy legislation by, for example, including a student's email without their consent. Badges are designed to be transferable and sharable outside of the institution. If this is not possible for legal reasons, the effectiveness of digital badges will be limited.

Recognition of badge standards
Recognition of educational standards for badges is critical to their use across universities. This also needs to be extended to employers so that relevant micro-credentials can be recognised by employers and the general public. Transparent translation of skills, training and experience through badges has the potential to develop closer links between universities, employers, community groups and the general public. If badges are to leverage the prestige of the university brand they must be subject to the same kinds of quality measures as standard coursework. Since this is outside of the scope of most university libraries, existing institutional processes and procedures will need to be developed to accommodate these needs.

Conclusion
Libraries have an important role in developing training to provide greater access and fluency in digital research skills and training. In both academic libraries and libraries more broadly, developing innovations such as digital badges provides micro-skills that can translate into digital credentialing for training that supports study, future employment and acknowledges general experience not necessarily recognised in traditional educational systems. Libraries, as cultural institutions, lend badges a level of trust and verification.

Despite this, the development of a badges system for academic institutions may face significant barriers regarding resources, organisational and technical barriers as well as needing to address legal constraints. Limited resources, staffing and expertise may also provide additional barriers to developments. However, with a collaborative, open access approach to this type of training resource, there is a potential to share a rich source of expertise and knowledge within badge communities.

Acknowledgements

References

Aabø, S. (2005). The role and value of public libraries in the age of digital technologies. *Journal of Librarianship and Information Science, 37*(4), 205-211. doi: 10.1177/0961000605057855

Abramovich, S., Schunn, C., & Higashi, R. M. (2013). Are badges useful in education?: it depends upon the type of badge and expertise of learner. *Educational Technology Research and Development, 61*(2), 217-232. doi: 10.1007/s11423-013-9289-2

Ahn, J., Pellicone, A., & Butler, B. S. (2014). Open badges for education: what are the implications at the intersection of open systems and badging? *Research in Learning Technology, 22*(0). doi: 10.3402/rlt.v22.23563

Anderson, T. (2008). *The theory and practice of online learning*: Athabasca University Press.

Mewburn, I., Freund, K, & Rutherford, E. (2014). *Badge trouble: piloting open badges at the Australian National University*. Paper presented at the Rhetoric and Reality: Critical perspectives on educational technology, Dunedin

Beetham, H., McGill, L., & Littlejohn, A. (2009). Thriving in the 21st century: learning literacies for the digital age: The Caledonian Academy, Glasgow Caledonian University.

Bull, B. (2014). Digital Badges as Curricular Building Blocks. Retrieved from http://etale.org/main/2014/07/08/digital-badges-as-curricular-building-blocks/

Carlson, S., & Blumenstyk, G. (2012). For Whom Is College Being Reinvented? 'Disruptions' have the buzz but may put higher education out of reach for those students likely to benefit the most. *The Chronicle for Higher Education,* (17 December).

Finkelstein, J., Knight, E., & Manning, S. (2013). *The potential and value of using digital badges for adult learners*. Washington.

Group of Eight. (2013). The Changing PhD. Canberra.

Hickey, D., Travers, N. L., Gibson, D., Evans, M., Normoyle, J., Strivens, J., Krishnan, S. (2014). *Reflection, Panel discussion*. Paper presented at the Curate, Credential and Carry Forward Digital Learning Evidence National Forum, Deakin.

INSIGNIA Focus Group Data. (2014).

Interview. INSIGNIA Interview Data. (2014).

Johnson, L., Adams Becker, S., Estrada, V., & Freeman, A. (2014a). NMC Horizon report: 2014 Higher Education Edition. Austin, Texas. The New Media Consortium.

Johnson, L., Adams Becker, S., Estrada, V., & Freeman, A. (2014b). NMC Horizon Report: 2014 Library Edition. Austin, Texas. The New Media Consortium.

Jones, J., & Altadonna, N. (2012). *We don't need no stinkin' badges: examining the social role of badges in the Huffington Post*. Paper presented at the Session: Community and Classification Online, Seattle.

Kinney, B. (2010). The Internet, Public Libraries, and the Digital Divide. *Public Library Quarterly, 29*(2), 104-161. doi: 10.1080/01616841003779718

Lokuge, D. K., & Gregory, J. (2014). *Badges in the Carpe Diem MOOC*. Paper presented at the Rhetoric and Reality: Critical perspectives on educational technology, Dunedin.

Mackenzie, A., & Martin, L. (2014). *Mastering digital librarianship: strategy, networking and discovery in academic libraries*. London: Facet Publishing.

OnlineCollege.org. (2013). The Open Badges Resume: The Most Prestigious Badges You Can Earn. Retrieved from http://www.onlinecollege.org/2013/01/17/the-open-badges-resume-the-most-prestigious-badges-you-can-earn/

Scales, B. J. (2014). Redesigning comprehensive library tutorials: theoretical considerations for multimedia enhancements and student learning. *Reference & User Services Quarterly, 53*(3), 242-253.

Scott, R. (2011). The Role of Public Libraries in Community Building. *Public Library Quarterly, 30*(3), 191-227. doi: 10.1080/01616846.2011.599283

Secker, J., & Coonan, E. (2011). A new curriculum for information literacy: curriculum and supporting documents: Arcadia Project, Cambridge University Library.

The Mozilla Foundation, Peer 2 Peer University, & The MacArthur Foundation. (2012). *Open Badges for Lifelong Learning*.

Warburton, J., & Macauley, P. (2014). Wrangling the Literature: Quietly Contributing to HDR Completions. *Australian Academic and Research Libraries, 45*(3), 159-175. doi: 10.1108/ 00907320910957233.