Are open badges the solution to a lack of student engagement with vital co-curricular learning material?

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Open badges are icons linked to digital artifacts that provide evidence of achievement. They are common in a number of online gaming and review contexts, and are emerging in U.S. and U.K. tertiary education sectors as motivators and rewards for learning. We investigated Australian student perceptions of badges linked to an online co-curricular activity in a first-year allied health unit. Students completed an academic integrity tutorial, with the option to complete an additional task to claim a digital badge, and were surveyed regarding their perceptions of online badges. Five key themes emerged: badges as motivation to achieve, badges linked to internal sense of achievement, ability to demonstrate achievement to others, learning while undertaking the badged activity and general positive reception of badges. This combination of tutorial and badged activities appears to promote student reflection, discussion and engagement with co-curricular materials that could ultimately enhance achievement.

The concept of awarding badges for an achievement is not new. Ribbons, badges or medals have historically been awarded for achievements in sport, education and professional services like the police force and the military. A digital or open badge is simply a virtual representation of this concept, with the unique advantage of an underlying URL displaying information on the credentials of the award (Ostashewski & Reid, 2015). Open badge platforms allow individuals to build an online profile of learning or achievement, "tracking the recipient's communities of interaction that issued the badge and the work completed to get it" (The Mozilla Foundation and P2PU, 2012). This record has the flexibility to be linked to an online professional profile, or downloaded into professional documentation (Jovanovic & Devedzic, 2014a; 2014b). As such, open badges effectively serve as useful evidence of skills acquisition for prospective educational institutions, employers and professional or community groups. This idea is particularly relevant to the higher education setting, where students prepare themselves for a future professional career. Several of the STARS themes are addressed directly by this paper, most pertinently achievement. In particular, proposing the adoption of open badges attached to academic integrity modules is an idea directly related to co-curricular reform and strategies that may promote and enhance student achievement.

Literature Review.

Open badges have been used successfully in the educational setting as a motivational tool for students' learning. In order to motivate, the requirements for awarding of a badge must seem attainable, yet the task needs to be challenging enough to develop a sense of satisfaction upon completion (Jovanovic & Devedzic, 2014b). Often the motivation to achieve a badge is driven by status earned within a learning community (Antin & Churchill, 2011). To this end, Buckingham (2014) proposes that the motivation is greater when badges are mapped to a set of well-recognised standards (for example, graduate attributes or employability skills), since these standards are valued within and beyond the learning community. The very mention of community demonstrates another value of open badges in education; peer interaction in learning. Through online badge systems, peers can build motivation for learning by

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displaying achievements, commenting on badges, endorsing others, and gaining status as 'experts' who can recommend others for accreditation (Jovanovic & Devedzic, 2014b). Because of these advantages, digital badges have been used extensively in open online learning environments, however there has been slow uptake by tertiary institutions.

Recently, some American and British universities have implemented digital badges. Purdue University was an early adopter (Purdue University, 2012; JISC, 2014), using online badges in their Passport program in 2012 as evidence for student development of employability skills via the Mozilla open badge backpack (Mozilla, n.d.a). Borders College in Scotland modified the Mozilla *BadgeKit* offering (Mozilla, n.d.b) to design badges for display on their learning management system for mastery of Moodle software and communication skills (Jovanovic & Devedzic, 2014a; JISC RSC, 2013). Whilst these institutions are using open badges as motivators for co-curricular development of soft skills, the University of California, has taken open badges one step further by adopting the concept within a curriculum (Jovanovic & Devedzic, 2014a; University of California, Davis [UCD], 2014). Their agriculture course has an experiential education approach which requires the development of a reflective learning portfolio, complemented by the award of digital badges. The program strongly emphasises reflective learning to avoid competition for badge acquisition which can distract from the learning process (UCD, 2014). Despite these examples, there is still little use of open badges in the tertiary sector.

Much hesitation may be due to known challenges in their implementation: technical complexity, issues of validity or credibility, and pedagogical concerns. Many educators believe badges will require excessive effort and time to learn, create and manage (Jovanovic & Devedzic, 2014a; JISC RSC, 2013). Further, Jovanovic & Devedzic (2014b) explain that badges can be considered "a disruptive innovation that challenges the credentialing authority of higher education, and its role" (p.57). Difficulties arise when determining who has the authority to create and award badges and what processes are required to ensure quality, rigour and sound pedagogy in development. Borders College certainly faced some of these issues when implementing their *Supporter2Reporter* initiative, for which approval by The Scottish Qualifications Authority took much longer than anticipated (JISC RSC, 2013). From a pedagogical perspective, the external motivation provided by badges can shift the focus from learning to the process of badge-collecting (Ostashewski & Reid, 2015). Clear communication of the purpose and importance of the learning goals can, to some extent, avoid this motivational displacement. Nonetheless, there remains a question over how accurately badges can represent the actual skills of the awardee (Jovanovic & Devedzic, 2014a; 2014b). Careful definitions, clear parameters and intelligent design of assessment or measurement of a skill are paramount to overcoming these concerns. As mentioned, these challenges have hindered the adoption of digital open badges in traditional higher education settings. To our knowledge, little is occurring with respect to the use of open digital badges at Australian universities.

This study seeks to determine whether open badges might motivate students to complete vital co-curricular learning at an Australian institution. Monash University launched an open access online Academic Integrity resource in 2014 to raise student awareness of knowledge and skills required to work with integrity in their studies and future careers. The tutorial is prominent in an orientation unit into which all commencing students are enrolled. However, completion is not compulsory, and it is likely that few students complete all of the fourteen short modules. The design team believes open badges may provide suitable motivation or

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reward to increase student participation in the online tutorial, and increase tutorial completion rates. In doing so, students will have more opportunity to understand academic integrity and achieve the university's expectations. The modular design of the tutorial coupled with its open access makes it well suited to the development of open badges, for display in a platform such as the Mozilla Backpack or P2PU (The Mozilla Foundation and P2PU, 2012). Linking modules with open badges will also allow students and faculties the ability to demonstrate evidence of completion. Further, as an open source, potential students could obtain academic integrity badges and in the process understand what is required of them upon enrolment into a course. However, before investing in such a system it is vital to ascertain whether Australian students perceive the badges as expected. Perception refers to "the recognition and understanding of events, objects, and stimuli through the use of senses" (Richards & Schmidt, 2002, p. 391). It is impossible for one to perceive an object in isolation of its contexts (Lowe, 2000, p. 138). Since different social and cultural contexts may alter perception, this study aims to investigate how Australian undergraduate students perceive online badges for co-curricular learning.

Methodology.

265 first year students from an undergraduate course were required to undertake one of the online academic integrity modules as part of their orientation program. All students were then invited to participate in an activity related to the tutorial to earn a mock online badge, followed by a survey to ascertain their perception of the tutorial content and the badge. The badge activity consisted of two scenario questions: one, a body of writing requiring students to analyse and determine what is at fault with the writing; the other provided two original excerpts and four alternative texts, requiring students to choose the best synthesis of the original information. All answers produced immediate explanatory feedback, and students could re-attempt the question if their answer was incorrect. The anonymous survey consisted of 12 statements about the online learning activity or the badge activity, forcing a 'yes', 'no' or 'unsure' response, followed by two semi-structured open ended questions about badges: 1) What do you think about gaining badges to demonstrate your understanding of the online module? and 2) Will you recommend other students to do Academic Integrity modules and why? These questions allowed students to reflect on their experience and previous responses to independently articulate their perception of the online tutorial and badge activity.

Responses to statements were transformed into descriptive statistics for analysis of trends, and a phenomenological research approach was applied to assess perceptions from open questions as per Ford et al. (2014). All investigators acknowledged and bracketed their preconceptions about online badges for learning prior to reading responses. Concepts arising from student responses were then read and classified into themes via collective decisions from all authors, clustered and analysed on this basis.

Results and discussion.

All 265 students attempted the badge activity, with 257 students completing both quiz questions to obtain a mock online badge. Of these, 250 students (94%) also attempted the survey, and whilst all responded to the statements, 98% also provided answers to both open-ended questions.

From the activities undertaken, 64% of respondents wanted to learn more about academic integrity and believed it was important while only 3% were uninterested or did not recognise

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the importance of academic integrity. This affirmed that the online tutorials raised awareness of the importance of academic integrity as intended. Survey data indicated that only 20% of students had previously collected online badges for other activities, and 57% of respondents had never encountered online badges before. Nonetheless, the majority of all respondents (62%) agreed with the statement "I see badges as a way of acknowledging my effort" whilst only a small percentage (2%) did not agree. Further, over 60% of students indicated that they would not be inclined to seek badges for the sake of the reward, without paying attention to the tutorial content. This indicated that the e-learning design of the academic integrity tutorial was pedagogically sound for the application of online badges. The importance of academic integrity had been successfully communicated in the online module, and the content was more important to students than the acquisition of badges. Whilst most of the cohort were not familiar with online badges, the students still perceived them as useful to provide evidence of achievement, but not as the main objective of the endeavour.

The most telling information about student perceptions of the online badges came from the two open-ended questions. When students were asked what they thought about gaining badges to demonstrate their understanding of the tutorial content, responses affirmed that student perceptions in Australia reflect those reported in the literature. Five major themes emerged about the concept of badges: motivation or encouragement to learn (21%); an internal sense of satisfaction or achievement (10%); general satisfaction indicated by use of terms such as 'helpful', 'good' or 'like' (17%); the promotion learning or understanding (14%); and evidence of learning or achievement (6%). These perceptions represented 70% of all responses, and confirm that open badges linked to a co-curricular activity such as this academic integrity tutorial may successfully motivate students to engage with the content.

An even more encouraging result, was that after pondering the tutorial, quiz and reflective statements, 74% of students said they would definitely recommend the academic integrity activity to other students. An additional 13% indicated that they may, depending on the person or circumstance. Reasons were varied, though the most frequent themes in response to this question were that the activities were helpful, the content was important, the badges encouraged students to learn and badges indicated their achievement. This was an overwhelmingly positive response to the badge concept. Further, it indicated that this reflective survey may be a powerful tool to incorporate into badge acquisition to promote knowledge and peer discussion about the tutorial content.

Conclusion

This pilot study indicates that Australian student perceptions of online badges, despite limited experience of them, are generally positive and reflect results in the current literature. Students cited motivation and a sense of achievement, promotion of learning and evidence of completion as some of the main benefits of online badges. Their reference to achievement, whether as internal satisfaction after undertaking the activity, or the badge as a display of accomplishment further highlight that open badges may be a viable strategy to promote engagement with vital co-curricular material, and ultimately to promote student achievement.

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Discussion questions for the audience:

1. If this academic integrity tutorial was 'open badged', would your institution be more likely to use it?
2. To what criteria should the online badge be linked in order to establish validity?
3. What other activities might lend themselves to online badging?

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