

## Open concepts that move forward learning conversations: *badging*, a case study of innovation and application

Open concepts about shared and web-based practices (such as a badge system for peer review) can encourage productive educational conversations about possible classroom applications. The author addresses the multiple levels on which a badging system can be considered within a teacher education program and reflects on the larger process of learning about and evaluating open education concepts as they may apply to current courses and programs.

Beyond the definitions and debates about open—from open education and open resources (considering MIT’s model of sharing their educational resources, Wasserman 2004; <http://ocw.mit.edu/index.htm>) to the open tools, ideas, and innovations surrounding global, shared knowledge (such as Greenburg, et al, 2000 with their global horticultural repository), there are the emerging tools, techniques, repositories and ideas that can bridge disciplines, institutions and even cultures. How do these open concepts come into being and how are they used, shared, implemented, and improved? Moving into the nebulous waters of “open and innovation” within the now global reach of networked communications, this paper will consider how one instructor is working with and integrating the concept of “badging,” with her work serving as a case study of innovation and application.

Badging is an open concept that is still under development. It is intended to be a peer review of web-based artifacts that would develop a distribution and storage process that allows for the aggregation and display of such kudos that might come forward from peer reviewers. Upon learning of this emerging, open concept, the instructor realized the potential that such an award and peer-review system could have in advancing her own instructional goals. She began to consider how a badge: (a.) could align with the course objectives that required collaboration and peer review and (b.) could provide ways that web-based resource-development, as required within her courses, might be valued and validated by a larger audience. The achievement of a badge from class peers could applaud the students’ accomplishments in the eyes of colleagues. And, badges could serve as evidence of accomplishment that went beyond the information provided simply by a course grade on a transcript. A badge system might give her students external *credit* and prominence for the websites, YouTubes tutorials, resources, and materials that they had created and shared within her courses. Thus, the very concept of a peer-reviewed, badge-system began to inspire instructional thinking and planning that could potentially provide the instructor’s students with expanded opportunities for demonstrating their skills and abilities and with networked, professional learning that could move beyond the confines of a single course. In addition, after having received significant peer-validation via a high-level badge, a project or artifact could serve as part of the growing repository of open resources.

This paper uses a case study of this instructor's work to demonstrate an application of an open concept in an innovative manner to teaching and learning—that is, it considers the emerging idea and process of a student-vetted badging system as a legitimate form for developing open education content and for accelerating pro-active yet reflective 21<sup>st</sup> century thinking and technology skills. First though, this report considers how *open* ideas can surface, percolate, and flower.

***In general, how can one learn about, and later incorporate, new open concepts?***

However, when considering any new venture into integrating an *open* approach within learning environment, two question surface: how do you learn about new and open features and how do you come to see their application to your own work?

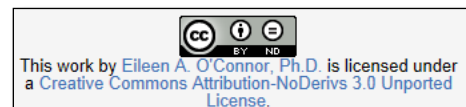
- ***Learning about open innovations and tools:*** Instructional designers may be available to help with new ideas and approaches, but instructors can move forward independently too by listening to the whispering in faculty discussions, professional organizations, media, and conversations with the young. As noted by Velentanios (2010), many of the e-communications tools that can create “open” opportunities for educators start from applications in other venues. For instance, can YouTube launch a field trip? can a social network be a collaborative project location? can shared photographs (Picasa by Google, for instance) of a Gettysburg re-enactment give a new perspective on history? or can a virtual visit to a Renaissance Island help your students understand Shakespeare's culture and time?

<http://maps.secondlife.com/secondlife/Renaissance%20Island/213/195/27>

- ***Getting the “itch” for educational expansion:*** Then ask, what areas within your discipline need improvement? Are there areas and investigations that now might be possible given global communication and new ways of connecting and sharing? Can you network your students with your discipline's professional organizations before they graduate? Look outside the box of “the course.” Given the speed at which communication and interactions are being enhanced, the methods by which content is being inculcated within the next generation may be changing (Lapp, et al. 2012); the media of exchange may be broadening (Liukkunen, 2009); and new structures of knowledge and knowledge hierarchy may be opening for examination (Norris, et al. 2003).

***What value can the concept of badging have within a course?***

Teacher education has long required that its students (new teachers or soon-to-be teachers) create projects and assignments. Too often though assignments that generate good materials that could possibly be used by other students get “lost” by the end of the semester when the class closes. Wouldn't it be useful to share these resources, particularly since often today students will have created the work within web-based formats? However, not all materials produced are of the highest quality and, conversely, at times materials are useful to other students but do not meet the requirements of the assignment. (Thus may not be deemed appropriate for an assignment but could still convey useful information.) Could the emerging ideas of badge systems as an open and peer-reviewed method for



having students review and evaluate each others' work serve to enhance learning within a teacher education course?

Although the actual “mechanics” of creating a badging system is still under development, the approach under current discussion by Mozilla, a leading open-source foundation that is one of several institutions investigating a badge system (<https://wiki.mozilla.org/Badges>), warrants attention:

Learning today happens everywhere, not just in the classroom. But it's often difficult to get recognition for skills and achievements that happen outside of school. Mozilla's Open Badges project is working to solve that problem, making it easy for anyone to issue, earn and display badges across the web -- through a shared infrastructure that's free and open to all. The result: helping people of all ages learn and display 21st century skills, unlock career and educational opportunities, and find new life pathways.

However, given that saving and sharing resources beyond a course could be meritorious, is there sufficient educational value to the concept badging to warrant these exercises as credible within a graduate course, considering that process itself still being developed? Over the educational landscape since that last half of the 20<sup>th</sup> century, the approaches embedded in constructivist theories (Savery & Duffy, 2001) indicate that when students construct their own knowledge, such as creating an original project (within course guidelines), they are more likely to learn and remember the content area. Furthermore, the *disequilibrium* created by the need to assemble ideas into a cohesive, comprehensible format to be presented to others can also support learning and growth (Piaget, 1972). Furthermore, students can benefit from a sharing an environment with other learners. As Vygotsky noted in 1978, peer interactions and explanations can provide the extra support needed when someone is struggling with a new understanding—the struggler is in his or her “zone of proximal development,” a ripe opportunity for learning. Furthermore, if a course is designed with peers reviewing each others' work, these peer-review efforts can extend learning by requiring the application of assignment criteria in different contexts (the work of other students) and by broadening the reviewer's perspectives on a topic since the examination opens more possible assignment interpretations. Students also can take more pride in the work when it has the potential for a wider audience, as found when students were peer reviewers of a wiki that was under consideration for release to the public (O'Connor, 2010). Another recent study by O'Connor, found merit in students serving as peer reviewers of course mates' poster presentations within a shared virtual space where, at the end of the session, students used an e-survey tool to evaluate the work of their peers (as explained within a YouTube <http://www.youtube.com/watch?v=pvgXca-xf00>). In both those courses, the concept of determining the relative merit of web-based work created by students within a course appears to have raised the learning expectations among students using a process not unlike the badge-determination process that is under development. Therefore, educational theory and practical experience appear to support the value of peer review in increasing learning and collaboration.

***Extending badging to the students of the students***

The concept of a peer reviewed assessment system that could be raised to the height of a badge though was not to be simply a higher education exercise. Teacher education by design helps its students find more effective ways to communicate with and instruct *K12 students*. The instructor could see the value in her students not only become recipients of badges from their peers, but she wanted these teachers to consider the role of badges in their present or soon-to-be classrooms. Thus, she required that her students develop and plan lessons and projects for their students that would include the concept of badging, that is, peer review by K12 students themselves. In launching this concept of badging with her students, she brought in a expert from within her own institution. This staff expert had been researching the concept of using badges and had worked within listservs designed to bring together those interested in developing, designing, and articulating the development of the badging concept. She presented the approach that was under development by Mozilla, reviewing the overall concept of peer-reviews and badges in the process. (Interestingly this presentation occurred within a virtual location, Second Life. It could have been presented via webinar or face-to-face as well, given the appropriate circumstances.)

Although badging is initially intended to be limited to adult populations, to circumvent concerns about youth and privacy, the approach of having K12 students become peer reviewers had merit for these teachers who acknowledged the many skills that as of yet were not measured or supported adequately in their present or future classrooms. As one team of teachers noted in their application of badges to a K12 science project: “Awarding of badges is a unique way to motivate students with respect to the development of skills. This concept allows teachers to recognize students for techniques and achievements that are not necessarily linked to content.” So, although the Mozilla solicitation focuses on adult populations, the needs in the K12 population suggests that applications in K12 environments will soon be forthcoming. Observing that the teachers embraced the overall idea of badging—with both useful reflective observations and practical reservations—suggests that the concept of documented, reference-able peer review will continue to move forward in the public arena as well.

***Using an open concept, even before it is fully implemented***

As with most new approaches, the posited initial idea seldom maps completely to the actual practice. And, since little time exists in today’s rapidly changing technological environment (Yatim & Ibrahim, 2007) to expend great effort and study in advance of employing the approach or technique, a practical way to determine the efficacy of an emerging instructional approach, such as badging, is to create a comparable situation that can be tested and that can serve as a model for possible implementation. Thus, the author developed several badging scenarios that could serve to further an interdisciplinary and complex project and that could be embedded within a course. As evident in this presentation <http://www.slideshare.net/MathSciCrystal/citizen-scientist-open-w-badges> based upon a badge-like project a K12 teacher could develop, a K12 student might join a study of birds, possibly receiving a peer-reviewed badge-level for his/her data gathering. And, although having a fully-developed badge system with an easy way to view, evaluate, and post comments about a peer’s work will further the open concept of badging, the practical efforts in implementing the concept of documented, preserved peer

review can begin before a turnkey badging system is available. Within her courses, the instructor was able to begin rich discussions surrounding the concept of badging, K12 peer reviews, distributed knowledge, and motivating K12 student participation before the actual advent of a formal badging process.

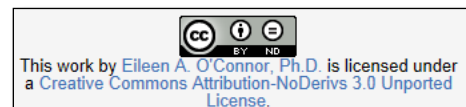
***Badging: an example and a model; telescoping innovations***

Thus, when an open concept – such as a documentable, accessible peer review system – moves into educational consideration, the conversations that are brokered and the applications that begin to arise can serve the advancement of teaching and learning. Emerging *open* ideas and approaches foster discussions often centered around tools and communications that were never before feasible or scalable but can now gain traction through communication technologies (Fischer, 2000). Using a telescoping approach, where the instructor begins working with an expansive concept of learning on multiple levels, the instructor can begin evaluating ideas that can be projected forward into future times when additional support will be available. Teaching and learning no longer has to be solely about “what has been done in the past,” it can move into plans for “what can be done in the future.” The owners of knowledge are no longer only the academicians but the students and their students who would participate in open concepts and ideas.

As exemplified by the considerations above, the type of learning conversations that can be brokered through emerging tools and ideas often require the instructor to think beyond the discipline borders and embrace teaching and learning itself as a collaborative venture; view the 21<sup>st</sup> century student as capable of empowerment and responsibility, given the requisite scaffolding, guidance, and assessment; and be able to embrace complexity, uncertainty, risk, challenge, and the possible exhilaration when evaluating new perspectives or even new paradigms (O’Connor, *in press*). *Open* can open doors that have yet to be envisioned as more individuals become part of the learning equation.

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