CONNECTING BADGES: EXPLORING THE UTILITY OF DIGITAL BADGES FOR LEARNING IN AFFINITY SPACES

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Introduction

In recent years, the "digital badge" has become both a cause for excitement within communities that promote digital tools for learning, as well as a cause of concern within critical communities troubled by the potentially overblown rhetoric of these systems' proponents (see Halavais, 2012, for a recent assessment). While some have advocated for the implementation of digital badges in order to better credentialize, assess, and promote informal learning practices online, there has been very little study of how current, non-educational badging (and other recognition systems) may impact activities within existing online spaces (if at all). In this paper, we present the results of several studies (the *Connecting Badges Project*), aimed at connecting interaction and digital badges in interest-driven (Ito, et al, 2008) affinity spaces (Gee, 2005; Author, 2012a). The goal of this work is to understand how digital badges may or may not relate to everyday practices "in the wilds" of existing online spaces, and how the activities found within multiple sites might relate to differential uses of badges and recognition systems.

Digital Badges in Affinity Spaces

One of the key motivations for the present work was the attempt to better understand digital badges *not* as tools designed for learning, but as features of existing online spaces that potentially shape participation in digital communities. We focused on the "online affinity space" (Gee, 2004; Gee, 2005; Author, 2010; Author, 2012a) — or online space dedicated to a common interest, around which *ad hoc* communities are able to form. While fan spaces around media have been a common site of study for internet research and vice versa (Baym, 2010; Jenkins, 2006) the study of them with respect to *learning* is still underdeveloped.

We adapted established methods for capturing interactional practices within multiple affinity spaces. These concerns have led to three, interrelated research questions that formed the basis for this study. First, in what ways do badges and other recognition systems relate to *how participants share information* within affinity spaces? Next, in what ways do badges and other recognition systems relate to how participants exhibit practices tied to *the specific content* of the affinity space? Finally, in what ways do badges and other recognition systems relate to *social participation* within affinity space?

In particular, how well do badges capture *credibility* of information and *trust* of participants within these informal spaces?

Method

We applied an established content coding developed by Author (2008) and further elaborated by Author (2012b), applying an *a priori* content coding scheme within which we might investigate *information sharing* (Gunawardena, et al, 1997; de Laat, 2002), the employment of *tacit epistemologies* (Kuhn, 1994), and *social interaction/discussion* (e.g., the discussion of badges, credibility/trust, and participation in offline communities relevant to the discussion). Each site would be assessed independently for relationships according to presence/absence of digital badges and other recognition systems on each site.

Sites were selected via a combined process of evaluating responses from an online survey sent to digital badge development and research communities, as well as through an assessment of variety of badge and recognition forms. This yielded three different kinds of discussions within three very different types of online spaces — *political discussion on Reddit's /r/politics subreddit*, *computational thinking practices on StackOverflow*, and *discussions of gaming practices on Steam's Dota 2 gaming-focused forums*. See Table 1, below, for hypothesized activities for each site, the size of each post sample, information on the number of coders, and interrater reliability achieved between them. Of the three sites, survey responses strongly influenced the selection of StackOverflow, while research team expertise pushed us to investigate Reddit and Steam forum discussions.

	Reddit; /r/politics	**StackOverflow**	**Steam; *Dota 2***
Hypothesized practices	Political discussion; negotiation of ideas, positions, terminology	Computational thinking; Discussion of programming tasks and problems	Gaming literacy; game systems, their structures, behaviors, and function
Number of Posts Sampled	647	652	681
Number of Coders	3	4	3
Interrater Reliability	93.42%	93.29%	92.58%

Table 1. Hypothesized practices, sample information, and coding information for the three sites under study.

Posts were randomly sampled by thread until a criterion number of posts was achieved, with coding taking place at the unit of analysis of individual post. We hypothesized that each space's unique topic of discussion (see Table 1) would be assessable within the affinity space, and created additional coding schemes to capture the suspected practices within /r/politics, StackOverflow, and the *Dota 2* discussions (Negotiation, Computational Thinking, and Gaming Literacy, respectively). For each site, correlational approaches (Kendall's *tau*, Spearman's rank correlation) were utilized to assess the relationships of acquired badges and aggregated codes, organized by poster. Supplementary interviews were conducted with members of each affinity space in order to capture first-person accounts of digital badge considerations, as well as the ways that individuals within affinity spaces conceived of the social practices within each space.

Results

Results indicated that badge use within affinity spaces were surprisingly *unrelated* to social expertise practices overall. In the case of /r/politics, only very small significant networks of correlations were found between badges (or "trophies" on Reddit) and social expertise codes, indicating a relative independence between the presence of digital badges and hypothesized interactional activities within the space. The strongest relationships were found on StackOverflow, between multiple badges and the social interaction code for "Credibility/Trust" (indicating overt discussion of the credibility of a poster's contributions or trust of a poster). See Table 2, below for relationships between multiple badges and Credibility/Trust.

Research Assistant = .707**	Synonymizer = .496**	Publicist = .707**	Beta = .496**	Booster = .345**	Marshal = .345**

Table 2. Selected significant correlations between *Credibility/Trust* and StackOverflow badges (** indicating p<.01).

Each of these badges represented participation within the knowledge-building task of the site. Across all three sites, StackOverflow featured the tightest relationship between badges and codes (these social interaction codes, specifically), with uniformly low discussion of badges on all of the three sites. Additionally, some evidence from /r/politics indicated that social norms within Reddit may have interfered with the discussion of trophies. Given that Reddit featured a Palahniukian "The first rule of trophies is you don't talk about trophies" statement barring overt discussions of trophies on the site, this indicated a problem with determining some uses of badges in this particular space.

Discussion and Implications

Implications of this work for the study of digital badges and learning involve considerations of how badges that connect to *skills* found outside affinity spaces — in this case, StackOverflow's computer programming focus — may have different value within an affinity space than badges earned within less skill-oriented spaces (political discussions and gaming, the other discussions under study). Additionally, we suspect that the display of badges and other evidence of participation in the social project of an affinity space may be seen as actually *counter-productive* to some discussions in online affinity spaces. That is, if "the first rule of trophies is you don't talk about trophies" is a prevailing attitude, we need to understand how this clashes with and impacts the assumptions of many badge proponents, who assume motivational potential. As Gee (2004) suggests, affinity spaces provide "multiple routes to participation," and this work provokes us to ask how participants in online spaces might see the display of digital badges as potentially *interfering* with some of these potential "routes to participation."

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