Talkative Objects in Need of Interpretation. Re-Thinking Digital Badges in Education

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Abstract

I examine current debates concerning digital badges in education, pointing to less remarked upon topics. By investigating badges as motivators, I conclude that a focus on badges as rewards has downplayed the importance of badge conditionalities ('tails') and entitlements ('antennae'), and their always situated effectiveness. Current discussions of badges as evidence-based credentials understate the interpretive work required to make sense of badge collections. I propose two heuristic definitions of badges as 'routes through an activity system' and as 'genres of hint-based multi-authored testimony of learning'. Alternative definitions are invited, as tools-for-thought.

Author Keywords

Digital badges; motivation; gamification; interpretation.

ACM Classification Keywords

H.1.2. Human factors.

General Terms

Human factors; Theory.

Introduction

There is increasing attention and enthusiasm for digital badges in learning contexts. This rise is partly driven by the massive wave of achievement systems in game platforms; the Mozilla Open Badges Infrastructure (MOBI) [1] has given additional impetus to this current, which many anticipate to sweep away or at least seriously restructure established learning credentials.

MOBI and the DML competition [2] have occasioned a lively plurilogue concerning merits and demerits of digital badges. I hope to contribute to this discussion, and I take my analytical starting point in it. I examine topics of motivation and evidence, and all in all I explore the idea of badge architectures as talkative systems in need of interpretation, proposing two alternative definitions-to-think-with. I focus on digital badges used in learning situations, wishfully expecting that this line of argumentation is also thought provoking for other contexts.

Badges as motivators

The distinction between **extrinsic** and **intrinsic** motivation looms large in assessing badges as new elements in learning contexts (see the left box for an illustration). Starting from the observation that the intrinsic / extrinsic distinction is a widespread tool for thought, it is worthwhile investigating what actual arguments (and further questions, comparisons, advice) it encourages, and what other motivational theories are put to use in discussing badges.

In its most cursory appearances, the intrinsic / extrinsic contrast serves just to highlight reasons for optimism or for pessimism. Authors worry about the damage of adding extrinsic motivation; or, they remark that badges can be extrinsic motivators, but they can also be intrinsic; or they may settle by pointing out that extrinsic is better than none. For example, Swark [25] addresses the claim that "Badges are just another form of grading, or -- worse -- extrinsic rewards" with the following considerations: "Badges can be extrinsic rewards, but they can also provide intrinsic motivation, especially for students who like clearly spelled out expectations. Provided they're optional, they shouldn't negatively impact any student's learning." The left-side webinar exchange also illustrates these argumentative functions of the contrast.

These passing assessments of badges as intrinsic or extrinsic motivators are better understandable in light of an underlying model of **economy of attention**. The assumption is that attention is in limited supply: if badges attract considerable attention, other aspects of the learning situation become blurred. From a self-declared skeptical perspective, Resnick [21] writes: "The problem, for me, lies in the role of badges as motivators. In many cases, educators are proposing badge systems in order to motivate students. It's easy to understand why educators are doing this: most students get excited and engaged by badges. But towards what end? And for how long? I worry that students will focus on accumulating badges rather than making connections with the ideas and material associated with the badges (…)."

If attention is at stake, this puts considerable weight on badge conditionalities, or on its '**tails**' (which metaphorically need to be grabbed in order to catch it): if learners focus on the precise literal instructions for getting a badge, then a lot is at stake in designing those instructions. If there are reasons to consider that

Badge 'tails' – conditionalities that mark a route

Figure 1. Badges with tails (conditionalities) and antennae (entitlements) in a learning world

conditionalities can be designed reasonably cheat-proof, and that following those steps would lead to valuable learning, then badges may work fine. If not, there is potential trouble. The ensuing advice is to design badge 'tails' as meaningful and secure learning paths, and to chain badges in longer, winding trajectories that cover the conceptual and experiential map of the learning field.

Besides the economy of attention, a second way to use the intrinsic / extrinsic distinction for making sense of badges links to the argument of **motivation displacement**. A series of psychological experiments have concluded that introducing extrinsic motivations into a situation in which children or adults are engaged in some activity for its own sake may actually decline their interest and task performance, as well as their motivation on future occasions [8]. This degradation of engagement may also occur when the activity is simply labeled as 'means' for something else, without any additional reward (ibid.). Therefore, the argument goes, if participants consider their learning activities worthwhile, but then come to interpret them as a 'means' for getting a badge, they are exposed to the moral risk of devaluing those activities both in the here-and-now, and on the longer run. This line of thought leads to advice for designing badges with '**antennae**' – that is, badges that reach into the future, with entitlements for more advanced roles in that very same learning world. Both Resnick [21] and Hickey [14] rely, in argumentation, on distinguishing what we may term **status badges**, which only serve as endpoint through recognition of achievements, from **role badges**, which award earners privileges that are also responsibilities in that very learning activity (for example, by becoming moderators, facilitators, editors,

tutors, etc., or by 'unlocking' advanced learning opportunities). Status badges can only function as 'goals' in the learning context, but role badges become 'means' for further learning, thus turning the means→ends motivational heuristic on itself, and ultimately upholding the value of participating in that learning activity.

The self-determination theory of motivation [22] brings forward 'autonomy' as the engine of learning. Autonomy is not synonymous with intrinsic motivation. The concept of "autonomous extrinsic motivation" (ibid.) refers to the situation in which a person has internalized, to various degrees, the requirement to perform an activity in order to reach a valuable goal. If we start from the assumption that students often experience extrinsic motivations for their learning activities, the question becomes if and how badges may assist in promoting internalization.

At a minimum, badges may 'give a reason' to engage with a learning activity, and to persist in it, when faced with conflicting priorities. A badge may work as a hook in self-talk when pondering whether to go along with a learning project or switch to something else. A badge may also introduce humor and playfulness, inviting attention. Badges may thus function as invitations, bringing people into the learning situation and leaving them there to work it out somehow. This is where the issue of the **learning situation** becomes salient. As Deterding [8] observes, motivational affordances are always situated in the here-and-now of interaction with other people and artifacts. A 'playful badge' becomes experientially playful through use, and it may well end up as 'dull' in unaccommodating social arrangements. Instructors' enthusiasm or lack thereof may incline

students towards interpreting badges as 'meaningful goals' or as 'simplistic manipulation', respectively. A situated action perspective encourages designers to consider whether badge architectures are inviting and supportive throughout the here-and-now learning activity. The accent would be not so much on accurately mapping badge conditionalities with desired skills, but on giving learners reasons to persist in the learning situation. It then becomes a challenge for instructors how to convert presence into engagement. Badges are no longer seen as the overriding motivator, but rather as **nudging** [26] participants in activities that still have to prove their worth.

The situatedness of badges as motivational instruments is a key consideration for Hickey [15], who relies on sociocultural theories of motivation [13]. Hickey advocates an agnostic take on incentives, badges included, and a focus on the design of the learning activity. Extrinsic incentives are part of the situation in which learners and teachers make sense, through interaction, of what is valuable, thus creating motivation (or lack thereof) for knowledge creation. Badge architectures create a map that may be more or less inviting, but the map does not replace the territory. It follows that badges can sustain motivation for learning mainly through the interactions that they make possible, keeping in mind that these interactions are also shaped by the wider architecture of the learning situation.

A first heuristic definition of badges

Mozilla and P2PU [27] formulate a definition of badges that covers with reasonable comprehensiveness their main functions and their different contexts of use:

"A 'badge' is a symbol or indicator of an accomplishment, skill, quality or interest. From the Boy and Girl Scouts, to PADI diving instruction, to the more recently popular geo-location game, Foursquare, badges have been successfully used to set goals, motivate behaviors, represent achievements and communicate success in many contexts. A 'digital badge' is an online record of achievements, tracking the recipient's communities of interaction that issued the badge and the work completed to get it" (p. 3).

My exploration of current discussions concerning badges as motivation props directs attention to some less conspicuous issues: how badges represent the learning activity (their conditionalities, or 'tail'), their possible means-to-ends relationship with the learning activity through entitlements ('antennae'), and the need to reconsider badges as elements of a learning situation in which they acquire their meaning through interaction. In order to connect these dots into a tool for thinking with and about badges, I propose the following heuristic definition:

Definition n°. 1: A 'badge' is a signaled route through an activity system, with an endpoint symbolically marked as a noteworthy achievement through a graphic sign, textual descriptions, and, optionally, rewards and entitlements. The route consists of a description of required actions, an assessment of completion, and a decision on the identity of the earner. A 'digital badge' links to online displays of the route and the activity system provided by the issuer.

This definition points to some of the less commented-upon features of badges that are of concern for design:

- The **route** (or the badge 'tail'): the issuer formulates conditionalities and instructions for learners, via the badge medium; learners and instructors make sense of these descriptions of steps-to-be-taken or results-to-be-achieved in order to orient through the learning landscape. The badge tails provide clues as to what is relevant and valuable in the learning world, and therefore the ensemble of conditionalities in a badge architecture functions as a map for that activity system. The route offers resources for two of the badge functions highlighted by Antin and Churchill (2011): goal setting and instruction;

- The possibility of formulating the badge as 'means' for further learning through its associated **entitlements** in the learning world (the badge 'antennae');

- The badge as a talkative object, involving multiple **descriptions**: of the route to completion, of itself, of the experiences, achievements, skills or other personal traits that it claims to indicate, as well as the issuer's more detailed descriptions of the same. Some of these texts use various tonalities: they may be injunctive, they may be evaluative, or they may be joking (which also leads to further nuances, such as 'a little joking', or 'just joking'). That being said, a badge is a **plurivocal object that invites further talk** from its issuers, earners, and observers.

Badges as conversation topics and boundary objects

The conversational appeal of badges has been repeatedly noted in the lively online exchanges that surround them. For example, the EDUCAUSE introduction to badges mentions that in the short term, until they gain more procedural validity and public recognition as credentials, "badges offer talking points for a job interview, opening a friendly dialogue between a manager and an interviewee and allowing the latter to speak about accomplishments and interests that might not otherwise arise in conversation" [10].

At the same time, badges are introduced as densely informative and even self-sufficient for understanding what they stand for. There are two contrasts that are invoked to substantiate these claims: formulating badges as 'nuanced', and as including 'all information':

a) On the one hand, badges are contrasted with grades, which are posited as relatively meaningless. For example, unlike the traditional "clumps of numbers", badges offer a "perhaps more meaningful" assessment [25]. Badges may replace grades or may accompany them to construct "a nuanced, flexible recognition system, inspired by peers and motivated by an institution's exercise in understanding its own values" [6].

b) On the other hand, badges are also contrasted with degrees, highlighting the comparative richness in information. Badges are presented as including 'all information' required to make sense of what they mean, unlike degrees that are arid lists of course names and GPAs. For

example, Davidson [6] writes that "you can click on a badge and **all the supporting information** is there, authored by another member of the community" (emphasis added). To the same point: "[i]n the Open Badges ecosystem, badges include an image and a set of metadata that explains the badge and the evidence behind it. The result is that each badge carries **all the information needed** to understand and value the badge with it as it is exchanged or shared across the ecosystem" [19] (emphasis added). This self-sufficiency is an argument for the ease of transferring badges across contexts, making them a boundary object [24] [12] in designing and evaluating learning: "A prime differentiator, and one that tends to get lost in cursory understandings of digital badges, is the idea that an Open Badge **carries with it its own credentials: it's evidence based documentation**. Additionally, an Open Badge is a sort of diplomat that can **freely cross disciplinary & institutional boundaries**" [3] (emphasis added).

The evidence incorporated into badges is relevant for the prominent issue of badge **validity**. As Casilli [4] notices, validity tends to be more questioned of badges than of established degrees. Still, this is no reason to dismiss the question – although it is a reason to extend the inquiry even more vigorously towards traditional assessment, as noted by Davidson [6]. Validity concerns refer, on the one side, to **authentication**: can a badge holder be credibly interpreted as a badge earner? There are many problems of cheating, in face-to-face classrooms and more so in online

instruction [10] [18]. People may also claim, in their CVs, embellished, exaggerated, or outright fake credentials; digital badges that link to their issuer defend against such misrepresentations. On the other side, there is the less noticed problem of **meaning**: what does a badge actually say about its earner? How are we, as observers, to interpret it?

Unlike conventional credentials, badges afford a nuanced language, and, more so, they speak in multiple voices about what they mean. There is the badge title, the badge succinct description of itself, the badge description of its route and assessment, and its links to issuer's further evidence. Badges invite conversation – and they therefore entreat a more delicate work of interpretation.

Firstly, badges propose a **radical commensurability** of heterogeneous forms of learning. Formal and informal, long-term or short-term, instructor- or peer-assessed, for skills and experiences in many walks of life – they may be all presented together to create a learner's profile. Observers who try to disentangle this juxtaposition and to understand what particular badges mean, what topics, types and intensity of learning they point to, must go past a first glance and even past a second glance when trying to figure it out. For example, now in the early beginnings of the MOBI, I have found two badges awarded for knowing about badges (see Figure 2): Mozilla's "Badges 101 – You really get badges!" and P2PU's "101 Badge – Learned the basics of open badges, engaged the community at large and developed a culminating project".
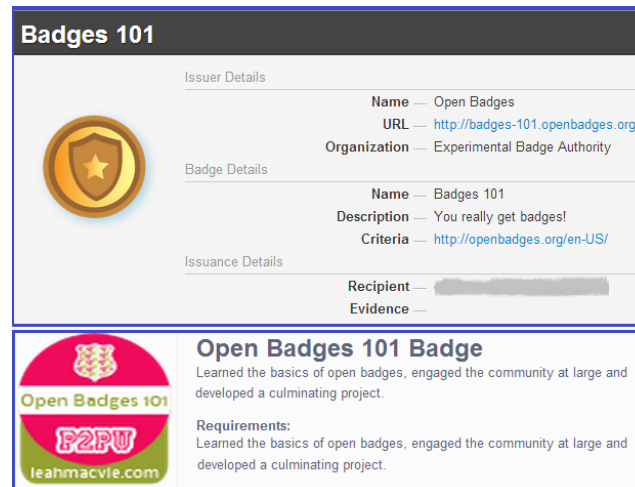
Figure 2. Mozilla's and P2PU Introductory Badges.

The first one takes about three minutes to earn, the second requires an estimated average of 6 hours (according to course instructions). There is little in the badge presentation to mark this difference, except maybe for the exclamation mark in Mozilla's description, which point to its 'come-and-play' style. Of course, anybody who cares about what these badges stand for can get a better understanding by examining issuers' links, and an even better one by checking out the process. Meaningful interpretation requires some familiarity with the learning route and with its landscape; for peer-awarded badges, it also depends on familiarity with the community.

Secondly, badges may indicate **partial**, intermediate performances. Maybe the learner has gone through some elements of a learning activity, and has earned a badge collection such as Tashawna's in [17]: not only

has she earned several of more available badges, but there is partiality also at badge level: some are complete, some have one or two out of three aspects covered. The question arises, 'What does this mean?' We can see such a discussion unfold among Stack Overflow contributors who try to make sense of when and how to include their SO profile in their CV. One question is, "How much Stack Overflow reputation makes it worth putting in CV?" [23], and, as expected, there is more than one answer to it. Incomplete achievements require context-sensitive interpretation.

Issuers take over some of this interpretive work by **classifying** badges, thus pointing to their type and relative importance. They propose different classification schemes. The HASTAC Initiative [11] overview distinguishes between "training badges or leveling systems", "dynamic dossier badges", "social system badges' and "ranking badge systems". Higashi et al. [16] distinguish between small, medium and large badges with different functions. The 'Design for America' DML Competition project [7] proposes "project completion badges", "tenet completion badges", "identity badges" and "role badges". The Digital Youth Network DML Competition application proposes an overarching classification of 'skill-based', 'community', 'automatic' and 'application' badges as conceptual basis for a badge development platform [9]. These classification systems offer valuable support for interpreting badges – but, at the same time, familiarity with their logic is a prerequisite.

Therefore, badges are talkative credentials that invite discerning interpretation. This work of sense-making is distributed across:

a) Builders of infrastructures, such as Mozilla, through definition of meta-information fields; for example, a requirement to specify the average number of hours needed for the typical learner to obtain the badge may introduce a useful hint for interpreting badges, while at the same time leveling their complexity in line with a simplifying metric;

b) Issuers, who design descriptions of badges that may be literal or playful, rich in detail or succinct, stratified on levels of information or horizontal, and linked to various traces of learning;

c) Displayers, who may propose systems for more or less finely-grained badge description, classification, and aggregation;

d) Earners, who are ultimately responsible for selecting badges, organizing them, and commenting on them, in online profiles and face-to-face conversations with members of different publics.

With a view to the interpretive work required for badges to successfully circulate across contexts, we propose the following heuristic definition of badges:

Definition n°. 2: A 'digital badge' is a genre of multi-authored testimony of learning concerning someone who has completed a mission in an activity system, who is cast as the badge 'earner'. Digital badges combine graphical symbols of experience and achievement with hypertext to provide their readers, from specified and / or unspecified contexts, hints as to their earners' capabilities and personality.

This second definition points to the **badge as a literary form** specialized in the formulation of person knowledge, upholding a promise to attract readers from multiple walks of life (disciplinary fields, institutional logics). Any particular badge and any ensemble of badges are taken over by readers as intimations of their earners' personality – in particular experiences, skills, and styles of action. The concept of '**hints**' draws attention to the interpretive openness of the descriptions linked with badges, which are not self-evident. Hints are always situated, deriving their inferential power from background knowledge, and their relation with other here-and-now elements of evidence.

Some concluding points: badge definitions as heuristics
In this article I examine current discussions concerning badges. I set out to explore the topic of badges as motivators, starting from the intrinsic / extrinsic contrast and its argumentative work, then moving to other theories brought forward in these exchanges. When examined in closer detail, issues of motivation direct attention to the conditionalities of badges (what I have termed their 'tails'), to a distinction between badges with and without entitlements ('antennae') for future activities, and to the situated learning contexts in which badges become a resource for (self)organization. I have materialized these observations in a heuristic definition of badges as **routes** through an activity system.

You've coined a
heuristic definition of
digital badges!

fa4ff7

http://badg.us/
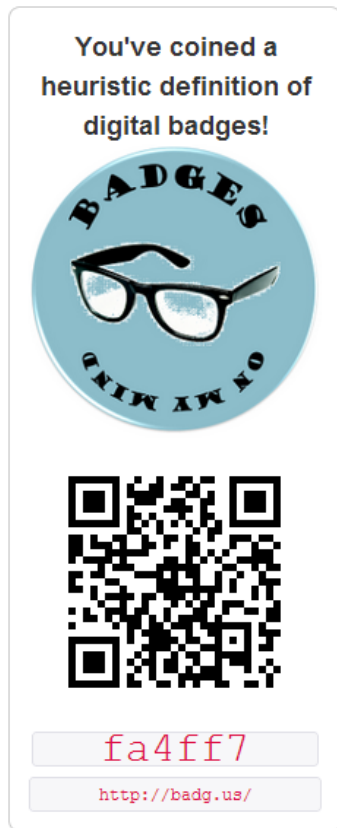
A consideration of badges outside of their original learning contexts brings up the question whether the evidence provided by badges can be taken to be self-evident. This is best formulated as an empirical question: how are specific badges interpreted by readers in specific contexts? Hypothesizing, I point out three features that may shape this sense-making work: the radical commensurability that badges propose between different learning trajectories, badges' affordance for credentialing partial achievements, and the diversity of classification schemes in complex badge architectures. I thus propose a second heuristic definition of digital badges as a **genre of multi-authored communication of hints** about earners' skills and personality.

I hope these definitions work as tools-for-thought in designing and studying badges. This is an open invitation to formulate other heuristic definitions, highlighting aspects of badge functioning that are relevant in a situation of use. The animated exchange surrounding badges and the Mozilla infrastructure is a fertile ground for reflection. The dominant definition formulates digital badges as "validated **indicator**[s] of accomplishment, skill, quality or interest" [11] (emphasis added). Still, we can take inspiration from definitions of badges as "**portals** that lead to large amounts of information about what their bearers know and can do" [2] (emphasis added), or as community-bound symbols of **membership** [5]. We can further explore badges as **intimate marks** of personal closeness, used to find peers-like-oneself, or as **boundary objects** bringing together stakeholders from worlds apart. Should any provocative definition come to mind, that's a good reason to earn the left bar badge-definition-badge in the challenge that I've been secretly up to, all along!

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