

Digital Badges in Formal Education: Are Teachers Ready?

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Abstract

Digital badges – a novel validator of accomplishments launched by Mozilla Foundation in 2011 – are revolutionizing the world of certification systems. One of the sectors that is most likely to be deeply affected is formal education. The paper analyses Italian teachers' hopes and fears about badges to acknowledge their own achievements as well as the students' achievements, through the analysis of a large-scale survey (to 195 teachers on the job) with closed as well as open-ended questions. Results show the “shy” ripeness of the Italian scenario, where teachers seem keen on the adoption of this certification system. They would appreciate badges to acknowledge their own achievements; they are not much confident, though, on the fact that their “environment” (the principal, colleagues and the school system) would take them into full account. As regards badges for students, they are less enthusiast but show willingness to consider them, provided that the “issuer” is trustworthy. Overall, the Italian school “ecosystem” seems ready for an experimentation, especially at high-school level.

Keywords

Open Digital Badges, Certification System, Credentials, Education, Assessment of learning.

Introduzione

Digital badges are a validated indicator of accomplishment, skill, quality or interest that can be earned in various learning environments (Wikipedia). Envisioned in 2007, fully launched in 2011, they can be described as “digital image files that contain metadata”. How do they work? “By clicking the image file, viewers can access relevant information about the badge: criteria to earn it; evidence, such as a portfolio or testimonials; and other kinds of information that describe who issued the badge, to whom, and when” (Grant, 2016, p. 3). Like Grant (2016) correctly points out, “their [of badges] origins are inseparable from the ethos of open source code and software protocols. No central authority controls them – they can be created by anyone with access to badge-issuing platform or technical skills”. Freedom, breaking of rules and official certifications stand at the cornerstone of the badges’ philosophy, which claims that anyone can acknowledge anyone else’s achievements, leaving to the “user” of the badge (an employer, a teacher, an agency...) to decide whether the badge is worth being taken into consideration or not. Another element of the ecosystem that favor badges’ appearance is the culture of “reputation” connected to how we build our identities online; badges are seen as a way to ensure that reputation is grounded on verified and quality judgments (see Grant, 2016 and also Halavais, 2012).

This “far-west” of certification may seem quite dangerous, especially in a country like Italy where the culture of the value of the so-called “piece of paper” is well established. As we witness the growth, world-wide, of the phenomenon and therefore start wondering about its potential adoption in our country, questions like “who may want to earn badges?”, “who would issue badges?” and “who may be willing to acknowledge badges’ value?” spontaneously surface. This last question is the crucial one: if it’s quite likely for people to be happy about “earning” badges and for agencies of various kinds to start “issuing” them, it is less obvious to imagine who may “use” them, i.e. consider them as relevant indicators of skills, qualities, interest and accomplishments and thus worth taking into account.

In this paper, we focus on the emergence badges in formal education (Muilenburg, Berge, 2016), more precisely on K-12 education (leaving aside higher education). A large-scale survey to teachers on the job on their acceptance of badges to acknowledge teachers’ achievements and badges to acknowledge students’ achievements will be presented. The results show that the time is – shyly – ripe. Teachers are “intrigued” by the idea, although with some predictable concerns.

The paper is organized as follows: first of all, the state of art about badges in education is presented; then, the methodology of the study is introduced as well as its results. Eventually, a final discussion highlights the main requirements for a successful introduction of a badge system within formal education. But before moving on, a short clarification on the main terms used within the badges realm is mandatory (Parker, 2014).

- Digital Badges: online records of achievements.
- Open Badges: a type of badge that allows to verify the skills, interests and achievements via information (metadata) attached to the badge image file that anyone can check.
- Issuer: the entity creating the badge (e.g., educational institutions, government agencies, employers).
- Earner: the learner, the person receiving the badge.
- Displayer: place where the badge is displayed (e.g. Mozilla Backpack, Facebook, LinkedIn, ...).
- Viewer/user: the person viewing/reviewing the earned badges.
- Badge ecosystem: also called ecosphere or badgeosphere, contains all of the relevant components mentioned above (Foster, 2014).

State of Art

In her Presidential Address for the American Educational Research Association in 2007, president Eva Baker faced unresolved conceptual and practical issues in the use of assessment in the schools. She passionately promoted the use of “merit-badge-like Qualifications” to certify accomplishments, a system that would apply to learning both in and out of school, supporting youth to develop their own interests. She envisioned youth assembling “their unique Qualifications to show to their families, to adults in university and workforce, and to themselves.” Ultimately, Baker believed that “the path of Qualifications” could shift attention from schoolwork to usable and compelling skills (Baker, 2007; Wikipedia). This speech kicked the conversation about badges until the white paper “An Open Badge System Framework,” by Peer 2 Peer University and The Mozilla Foundation, was released in 2011 (Mozilla et al., 2011). The “Badges for Lifelong Learning Competition” and Mozilla’s Open Badges initiative, which served as triggers for the global conversation about badges, were officially launched on September 15, 2011, with the participation of the U.S. Secretary of Education (Duncan, 2011).

Interest quickly grew, in various fields: formal education (especially, though not exclusively, at higher education level), informal education, crowds-sourced settings (Chow et al., 2016) and eventually adult learning, even for faculty professional development (Derryberry, 2016). One of the very first experiences of use of badges in education was the “Chicago Summer of learning” initiative (www.chicagosummeroflearning.org/), in which a number of cultural and educational institutions in the city of Chicago offered educational initiatives for kids, issuing badges as rewards for their completion. Also the Peer to Peer University (a university where anyone can create courses and put them online) was an early adopter of the Mozilla badges’ system (<https://courses.p2pu.org/en/badges/>). In Europe, the initiative “Badge the UK” followed the launch of American badges almost immediately, in 2012. The focus is on young learners and the emphasis is

on education: they see badges as “a new way to recognize all of young people’s talents, not just the narrow measure of exam results” (www.digitalme.co.uk).

In Italy, a very significant experience is represented by Bestr, a digital platform matching employers’ requirements with learning opportunities and learners’ aspirations, entirely based on Open Badges (www.openbadges.eu/initiatives/bestr). Bestr is managed by CINECA, an Italian inter-universities consortium. Another Italian example is offered by HOC-LAB of Politecnico di Milano, which started issuing badges in 2013 to all the teachers who were taking part in its educational programs (digital storytelling competition, MOOCs, participation into online communities of teachers...). So far, HOC-LAB has issued more than 6,000 badges, to teachers of all school grades. In addition, 300 students’ badges were also issued as an experimentation during a digital storytelling initiative: the badges were issued “through” the teachers, i.e. after their approval.

Few experimentations have – so far – taken place at K-12 levels (the focus of this paper): the aforementioned Chicago initiative allows kids to earn badges and “bring them at school”; the Providence, Rhode Island, school district and the Providence After School Alliance are piloting a badge program where students who engage in badge-earning learning experiences outside of school are awarded credits (Alliance for Excellence in Education, 2013; Fleming, 2013). Badges at K-12 are hailed in literature as a way to “help educators understand the wide range of skills, knowledge, and interests beyond those that are measured by traditional assessments” as well as “to improve the effectiveness of school-community partnerships” and eventually “as a bridge between informal and formal education settings, encouraging connections between in- and out-of-school learning” (Parker, 2014). In the view of Mozilla, badges for K-12 students have always been on the front line and many of their envisioned scenarios of use have kids with their out-of-school, unrecognized skills, at center stage. Let us see one example, which clarifies Mozilla’s view on the role of badges even for very young earners as a way to acknowledge the richness of their competencies that sometimes get unnoticed at school: “Kareem, a 16-year-old Chicago southsider, loves robots and movies [...]. He struggles in school because he does not understand how those things apply to his interests or to real life, so it’s easy to get bored and tune out. Luckily, he’s been able to pursue his interests through more informal learning opportunities with his peers through his local Learning Network after-school program: he’s made short films in a series of youth-oriented digital media workshops, mentored some younger kids at the local FabLab, and participated in a hands-on, sustainability-focused ‘hackfest’ competition, in which his team took second prize for designing and building a mechanism to sort recyclables. But these experiences are currently isolated and cannot be carried with him to other contexts, including his formal school environment. So instead, he gets negative feedback in school and has started to think of himself as unintelligent and below-average.” (Mozilla Foundation et al., 2011, p. 1).

High-school level in formal education is a critical environment for badges: on one side, the potential earners are still quite young, so badges could be meant as simple motivators (which they are, as some studies have already demonstrated; see Abramovich, 2013; Moore, Edwards, 2016); but at the same time, high-school students are young adults close to future academic careers of the job market and therefore their badges may start being taken seriously. It is natural thus for this sector to be “reluctant”, so to speak, though some significant experiments are taking place (see for example Davis, 2015). In what follows, the issue of badges in formal education, with a special focus on high-school level, will be dealt with by drawing on the results of a large-scale survey to teachers on the job, from all school levels.

Methodology

In order to investigate teachers’ acceptance of badges, both for themselves and for their students, a survey with 15 questions was administered to 195 teachers. They were all participants to educational initiatives by HOC-LAB at Politecnico di Milano (<http://hoc.elet.polimi.it>). Questions were multiple choice, but all had space for free comments: thus, both quantitative and qualitative data were gathered. All school grades were represented: 2.6% of the teachers were from pre-school; 28.2% from primary school; 20.5% from middle school and 47.7% from high-school (1% undefined level).

Question 1 and 2 (Table 1) discuss the acceptance of badges by the teachers themselves and how they think badges for teachers could be received and perceived by their school “environment”.

Table 1 – Questions on the acceptance of badges for teachers. 1=not at all; 5=a lot

	1	2	3	4	5	Aver
Do you think a system of badges for acknowledging the teachers’ “special activities” (courses, projects...) would be useful, in Italy?	1%	1%	11%	49%	39%	4.24
Do you think that your local/regional branch of the ministry, principal, board of colleagues... would be willing to acknowledge badges earned by teachers?	5%	37%	42%	11%	5%	2.73

As the table shows, teachers would be very keen on receiving badges but poorly confident that they would be acknowledged by their “environment” at large.

Here are some comments by the teachers, on the first question: “it could be a way to valorize the competences of temporary workers”; “I’d love it: for example, I created the Facebook group of my district, where teachers, families and students cooperate”; “it could be a way to acknowledge some activities that currently teachers do for free”; “in my opinion, they would act as motivators for teachers to gain new competences and skills”; “they could be a motivator for teachers to train themselves and keep up-to-date in their subjects”.

As regards the second question, most of the comments highlight the potential jealousy by less proficient colleagues: “there might be some form of opposition by the older colleagues, who are less keen on undergoing initiatives of life-long learning”; “colleagues don’t like those who want to do more”; “colleagues would be jealous, they would hint that those who do special activities must indeed have a lot of free time...”. Other teachers wonder about the official school system’s acceptance: “I think badges would be great, but provided that the ministry really takes them into account”; “I have more than 300 certificates, and they are never taken into account!”

Question 3 and 4 investigated the teachers’ perception about the potential of badges: strength and weaknesses. As table 2 shows, “Introduction to a life-long learning attitude” is seen as the most relevant strength, followed by a significant 67.6% for the breaking of the school’s boundaries. On the other hand, the potential proliferation of low-quality issuing agencies is seen as the strongest weakness.

Table 2 –Strengths of badges for teachers. More than one option was possible

What elements of strength would you see in the use of badges for teachers?	
Teachers would be pushed to be more “proactive”	25.7%
The school’s boundaries would be blurred	67.6%
Upgrade to the requirements of the current – much more fluid – job market (digital CV)	44.7%
Introduction to the life-long learning approach	73.7%

Teachers comment: “a life-long learning attitude would help teachers keep updated and better prepared to meet the students’ needs”; “the school must have the courage to go beyond its closed and protected environment”.

Table 3 –Weaknesses of badges for teachers. More than one option was possible

What elements of weakness would you see in the use of badges for teachers?
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Dispersion	18.4%
Proliferation of low-quality issuing agencies	87.7%
Potential bureaucratization	50.8%

Teachers are mostly “afraid” that – were badges officially introduced in the school system – then a number of low-quality issuing agencies would proliferate. Here are some of their comments: “the badges system should not turn into a market-place for accreditation, especially if badges were used for increasing salaries”; “sadly, it has already happened: we would witness to a commercialization of badges”.

In expressing their opinion about badges for students, teachers are positive, though less positive with respect to badges for themselves (Table 4).

Table 4 – Questions on the acceptance of badges for students. 1=not at all; 5=a lot

	1	2	3	4	5	Aver
Do you think a system of badges for acknowledging the students <u>extra-curricular but performed at school</u> “special activities” (courses, projects...) would be useful?	1%	3%	22%	47%	28%	3.98
Do you think a system of badges for acknowledging the students “special activities” NOT performed at school would be useful?	1%	5%	36%	42%	16%	3.67
Would YOU take into account badges earned by the students outside of the school? (provided that the issuer is authoritative)	5%	37%	42%	11%	5%	2.73

Let us see teachers’ comments on the question about extra-curricular activities performed at school. Teachers say “yes, it would only be fair; in my school, students who help during the open day currently just get a better score on their behavior”; “it would be a way to valorize ALL the students and motivate the laggards”.

Let us see teachers’ comments on the question about extra-curricular activities performed out of school. Teachers say “they would be useful to acknowledge things like courses on art, music, foreign languages...”; “it would

be more difficult at primary school, much more appropriate at high-school”; “useful, especially in the case of vocational schools, where a number of skills are gained outside the classroom”.

Eventually, let us see comments on whether the teachers would be willing to take students’ badges into account (i.e. in their evaluation). Teachers seem quite reluctant (score 2.73 out of 5). The comments show the teachers’ perplexities and mixed feelings: “I would take them into account, especially in the case of difficult students, for various reasons, where every positive element must be considered”; “I’m not sure... It would be difficult to evaluate something that we did not control”; “Yes I would: for example, a student who spends an year in the US has top score in English without question: he not only knows English better, he also have intercultural experience”; “I would, were the issuer trustworthy; I do hope there won’t be a day in which we would be compelled to accept badges value without questioning them”; “I might accept these badges but after a further test meant to check what the student has really learnt...”; “in absence of a legal definition of the badges’ values, I would not know how to evaluate them”.

Let us know see what high-school teachers (47.7% of the respondents) think about badges for students. High-school, as discussed in the introduction, is a critical level for the badges: “earners” are neither kids nor adults, therefore badges start becoming a serious issue. The most divergent answer regards whether teachers would take badges into account: surprisingly enough, the score dramatically increases (from 2.37 to 3.76), meaning that teachers at high-school level would be more willing to take badges into account. This can be considered a “declaration of trust” towards the students as well as the environment at large, with its other educational agencies, beyond the school’s boundaries.

Table 5 – Questions on the acceptance of badges for students by high-school teachers only. 1=not at all; 5=a lot (93 respondents)

	1	2	3	4	5	Aver
Do you think a system of badges for acknowledging the students <u>extra-curricular but performed at school</u> “special activities” (courses, projects...) would be useful?	1.2%	0%	23.8%	50%	25%	3.98
Do you think a system of badges for acknowledging the students “special activities” NOT performed at	1.2%	1.2%	41.7%	38.1%	17.9%	3.70

school would be useful?						
Would you take into account badges earned by the students outside of the school? (provided that the issuer is authoritative)	2.4%	4.8%	26.2%	47.6%	19%	3.76

Results and Discussion

We can summarize the results of the survey as follows:

- Teachers are very keen on receiving badges and quite confident on their potential to change the way life-long learning activities are acknowledged, even in a phase in which badges are not making a concrete difference in the way their job is recognized (and even less on their salary).
- Badges are perceived as powerful motivators for teachers to be engaged in life-long learning activities.
- Considering the whole sample, which represents all school levels, we see that teachers are a little more distrustful on the usefulness of badges for students, and less keen in taking them into account in their students' assessment (though not "against it"). They seem disoriented, feeling a lack of precise rules.
- Surprisingly enough, when scores from high-school teachers only are isolated, it appears that badges for acknowledging achievements gained "out of school" are considered much more acceptable. This could be because at high-school level educational agencies outside of school are acknowledged as authoritative (e.g. English schools, music courses...)

Conclusions

Badges in education could be seen as a powerful strategy to put together, in a single "innovation eco-system" (Cantoni et al., 2006), formal education, informal education, non-formal education, apprenticeship experiences, online education, project-based learning, etc. In Italy, where the school system is, generally speaking, not much flexible, badges could have a disrupting effect and "break the school's boundaries". The results from the survey show that teachers, though not much confident about an acknowledgement from their official "environment", would be ready for this revolution, especially at high-school level.

The survey's results (as well as the teachers' comments), help us draw some requirements for the creation of a badge-system at school:

- From a technical point of view, international standards should be adopted, to ensure dialogue and interoperability
- Something like a “board” of badge issuers, to guarantee validity and avoid low quality issuers to spread, should be created. In Italy, there are already a number of agencies potentially interested (including museums and other cultural organizations) and schools themselves promote activities that would go well with badges: a (light) monitoring of the quality of the issuers would be needed in order to ensure validity (for a thought-provoking discussion on the validity of badges, see Casilli, 2012).
- A set of quality guidelines for the badges should be drafted and shared, so that all badges are easily readable/interpretable and their value can be fully appreciated. They would be useful for the issuers, in order to have a clear idea about how to describe a badge, as well as for the viewers/users, to understand and be able to weigh the value of a badge at a glance.
- The school system should provide official acknowledgement to the badge system. Students are already engaged in a number of meaningful educational activities that are not curricular, it would be good for the school system to become more flexible, less “self-referring” and include these merits.
- (Ultimately) the job market should accept the value of badges as “currency” for describing people’s skills and competences. This last element would complete the whole eco-system, from education to employment.

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