

The Use of Badges in The SAPO Campus Platform: Analysis And Reflection

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ABSTRACT

SAPO Campus is a platform for educational contexts based on the basic principles of Web 2.0 and social networks. The platform offers a badge feature that allows users (teachers or students) to engage in gamification dynamics by creating, supporting and assigning badges. From an analysis of the platform data it was possible to notice that, despite some cases of success in the use of badges, the great majority of users never used this feature, especially teachers.

A questionnaire administered to 61 administrators of communities in SAPO Campus allowed us to understand that this feature was not used because administrators thought this feature was hard to implement with their students. According to the answers, the badge feature in the platform was considered easy to use, but they did not know which was the better content to build badges. Planning and using badges in an engaging way were topics administrators did not know but were interested in learning.

We also intended to analyse the general preferences indicated throughout the questionnaire regarding this feature, in order to understand which changes should be implemented to improve its use. One of the issues that was mentioned as very important is related to the provision of badges' templates/ examples that teachers can edit and use immediately, jumpstarting its implementation. It is with practical and successful examples that it will be possible to help teachers to change their own practices.

Keywords: Badges; SAPO Campus; Gamification.

Introduction

The Internet enabled higher education institutions to adopt technologies in order to improve, in different but complementary dimensions, their educational offer. Learning Management Systems (LMS) emerged as one of the technological possibilities in this field and allowed the classroom to be spatial and temporally expanded, making it easier, for instance, for students to continue their educational activities at home. New challenges arose with Web 2.0 technologies. More than a technological breakthrough, the 2.0 movement extended the possibilities of using the Internet from a participation culture perspective, allowing users to adopt new behaviors of content consumption and creation. The proliferation of publications on websites and blogs, the creation and sharing of images and videos, and the rise of different social networks created new possibilities and challenges for educational institutions. Those new possibilities and challenges triggered the appearance of new trends such as MOOCs (Massive Open Online Courses), where learning activities break down the walls of the classroom, allowing anyone, anywhere in the world, to be able to learn without the need for a formal and permanent enrollment with the promoting educational institution.

SAPO Campus was created in this overarching context and was initially designed to be used in higher education scenarios before a more generic platform was made available for institutions of different levels of education (Santos, 2016).

However, these technological, educational and attitudinal evolutions also raised new questions. In the past decade, one of the most important questions was related to the certification of learning actions that may occur outside the formal and administrative umbrella of educational institutions. The Mozilla Open Badges initiative was created to answer this question, allowing to gather on the same platform badges assigned to each user in different learning contexts (Goligoski, 2012). From a technological standpoint, this feature was promptly supported by different LMS. SAPO Campus also implemented this feature, but not for the sole purpose of certifying skills. In SAPO Campus the main idea was always to explore the motivational and social potential of this feature (Santos, 2016).

Badges are expected to work by themselves as a motivational factor, however this is not usually a simple task. In a longitudinal study, Hanus and Fox (2015) concluded that the use of badges as a reward in compulsory activities inversely

influenced the learner's motivation. On the other hand, Hamari (2017) stresses that clear goals and immediate feedback, like it is possible to find in badges, have positive effects on the implementation of the tasks. Another important point is the role that badges can play after being issued, such as the role of social marker within a community. By being visible, members see their work recognised and may influence their peers to work in order to receive the same badge (Gee, 2003; Hamari, 2017).

However, its effectiveness in terms of motivation is not consensual and many authors warn that, when focusing only on extrinsic motivation, the use of rewards such as badges may have quick effects in short term periods but that dissipate in the long term (Burke, 2014; Chou, 2015; Kapp, 2012; Zichermann & Linder, 2013).

Whichever is our position in this matter, trying to improve learners' motivation through the use of badges or other social recognition marker is an important issue in today's education. It is also important to understand the reasons that prevent teachers from using this tool, which is often available on platforms they regularly use (Moodle, Edmodo and SAPO Campus).

This paper presents the results of a study carried out with the users of SAPO Campus platform where it was intended to understand the reasons for the adoption of gamification strategies and, very specifically, the reasons that lead to use/not use the badge feature in the platform.

The SAPO Campus Platform

Overview

Since its initial design and launch in 2009, SAPO Campus aimed to facilitate the creation of an online space where students could develop their PLE (Personal Learning Environment) by interacting directly with their formal educational institution but also with other members from other learning communities (Santos, Pedro, Ramos, & Moreira, 2011). In the end of the 2000 decade this was a fresh perspective on how higher education institutions could interact with their students and provide them technology and was also significantly different from the one that was followed at the time.

“Being an institutionally supported Social Media platform – in order to promote content sharing among the academic community – it also gives privileges to its users to build their own personal learning environment without any limitations or constraints” (Santos, 2016, p. 84).

At the same time, this perspective required a more flexible role for higher education institutions by diluting the hierarchy and privileges among all its members, creating conditions for the community to continuously adapt itself to the needs and interests of the overall community, because each member has control over the choices made within the platform. One of the other recognised advantages that the SAPO Campus platform tries to promote is to bring together formal and informal learning communities in the same service (Santos, 2016).

The platform also pretends to facilitate a Lifelong Learning relationship between the institution and its members, since membership does not depend on the official relationship with the institution and can be maintained indefinitely. This hopefully leads to a continuous relationship between educational institutions and its former students, maximizing the possibilities of joint partnerships between the market and the academy. Currently, SAPO Campus has several infocommunicational features such as: sharing features (files, links, images and videos), blog posting, chat service, task scheduling and the issuing of badges. All these features were implemented as SAPO Campus was evolving through the years. A new version of the platform is currently under development aiming to renew and optimize the services already available. It is within this context that the use given by the members to the different features was evaluated, showing that the badges tool stood out in a negative way.

Although this feature was available since 2013, until March of 2017 only 6.6% of the existing communities had issued badges and 1054 (44.8%) out of the 2353 badges were assigned within a single community (Araújo, Santos, Pedro, & Batista, 2017a). This is a very small percentage which led us to consider the need to invest in improvements. That is why we applied a questionnaire to the platform’s users that aimed to gather evidences of the main difficulties they experienced with this tool and also to understand potential features that could be added in order to increase its use.

Badges in SAPO Campus

In the SAPO Campus platform it is possible to make available badges that are, by default, managed by a community administrator. These badges essentially correspond to functions within the community (teacher, student, parent or guardian ...) but it is also possible to create new badges for the community that are not connected with particular roles in the institution. These can only be issued by the administrator and are automatically added to the member's profile. In the case of these community badges it is assumed that the function of administrator of a community is performed by someone who has the necessary maturity to manage and issue badges in the best possible way (Santos, 2016).

However, learning communities typically evolve reflecting the learning interests and needs of its members, allowing, for instance, that in a given moment in time someone can be an apprentice in one theme and simultaneously a teacher in other (Gray, 2004). In this line of thought, SAPO Campus facilitates the continuous reorganization of the learning community according to the needs felt by its members in each moment. It is then natural that smaller communities (groups) may be created by teachers or other community leaders and that, over time, the remaining members may also organize themselves into other groups that share common interests or objectives in that community.

Within each group there is at least one member who assumes the administrator role. Only those who have an administrator role have access to the badges' creation tool and are allowed to issue badges to other members of that group. Every time a badge is assigned, the receiving member has the right to refuse it, to accept it in private mode or to accept it in public mode. The way the member chooses to accept the badge indicates if the badge is visible in the user's profile only for other members of the group in which it was assigned (private) or for the entire community (public). This possibility facilitates the self-preservation of members against badges that may be harmful to them, such as in situations of bullying among students (Santos, 2016; Santos, Pedro, Almeida, & Aresta, 2013).



Figure 1. Badge creation tool

To create a badge, it is necessary to define its name and include a description that should indicate the reason or meaning of the symbol that will be issued, thus allowing the viewer to perceive what was done by that member to be eligible to receive it. There is an optional label that overlaps the badge image. At the bottom there is an area with the graphic elements of the badge (icon, design background, color and frame). In total there are 126 icons available and organised by categories. There are also 9 design backgrounds, 18 colors and 6 frames available to choose from (see Figure 1). In this tool there is no way to upload an image. This decision was made by the product and design teams so the graphic identity of badges in SAPO Campus could be preserved. Other tools that offer open badges (eg <https://www.openbadgeacademy.com>) also tend to maintain the visual identity of the badge, since the value of a badge is always evaluated by the image it presents, “how professional/appropriate it is” (Jovanovic & Devedzic, 2014, p. 61).

In SAPO Campus every member of a community may also endorse/recommend the assignment of badges. It is possible to perform this action directly on the published posts in the platform or with the badges available in any group or

community. This endorsement/recommendation can be made even after a member has received a badge, consequently giving that member a strong recognition message. This fact remains visible in the context of the issued badge, being possible to see the accepted badges, the content the badge is associated with, but also the number of endorsements it has received from other members.

This tool was developed in close collaboration between the development team and the schools that participated in a SAPO Campus platform study. Many of the decisions took into consideration relevant suggestions and problems raised by the users involved in that study (Santos, 2016).

Method

Data collection

A survey was implemented through an online questionnaire tool intending to understand the reason that lead to a low level of use of badges provided by the SAPO Campus platform. The administrators of Communities and Groups were asked to answer the survey.

The questionnaire had 4 parts:

- Personal information, where participants were asked to answer questions about their age, sex, professional position, the academic cycle in which they teach and their availability to be contacted in a later moment;
- Badge definition and translation, where respondents were asked about the better Portuguese word for the concept of “Badge”;
- Use of badges, where participants were asked about who within a community should have permissions to issue and endorse/recommend badges, and what types of uses they intended to give to badges;
- Experience with the Badges’ tool, where participants were asked about their level of use of the badges’ tool, examples of badges already created, but also suggestions of features to be included in the tool and reasons that may encourage the use of badges.

To reach a specific group of people, namely administrators of groups and communities in SAPO Campus, the questionnaire was disseminated by email. A total of 982 emails were sent in two moments: during the first half of November 2016 and

later, in January 2017. A total of 63 valid responses were collected, corresponding to 6.4% out of the total administrators with valid emails.

Results

There was a slight female majority (54.0%) in the sample and the vast majority (87.3%) of participants were between 31 and 60 years old, being the age range from 41 to 50 years old the most frequent (38.1%) (Figure 2).

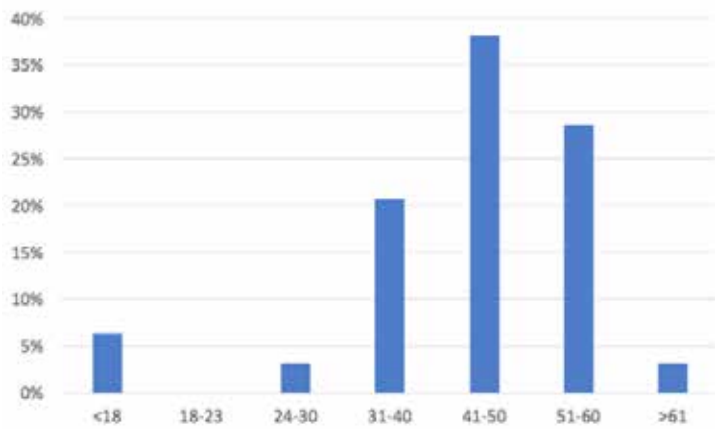


Figure 2. Distribution of sample age (N=63).

The vast majority (88.9%) of the participants performed the roles of teacher or trainer in the platform. The figure 3 presents their distribution by educational level (cycle in Portuguese).

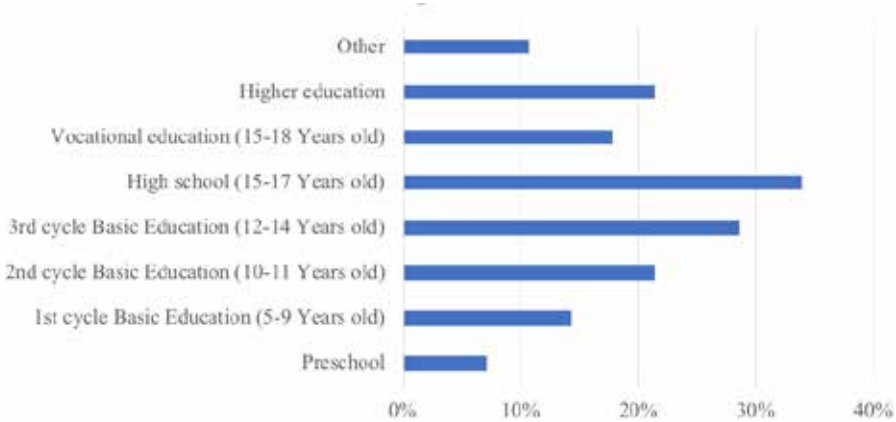


Figure 3. Distribution of teachers per education academic cycle (N=56)

About one-third of the teachers work in more than one academic cycle ($n = 16$, 28.6%), with secondary education being the cycle with more teachers ($n = 19$, 33.9%).

Regarding the use made of the badges' tool, 49.2% ($n = 31$) participants already used and knew the badge tool and 50.8% ($n = 32$) had not used the tool in the date of response (Figure 4).

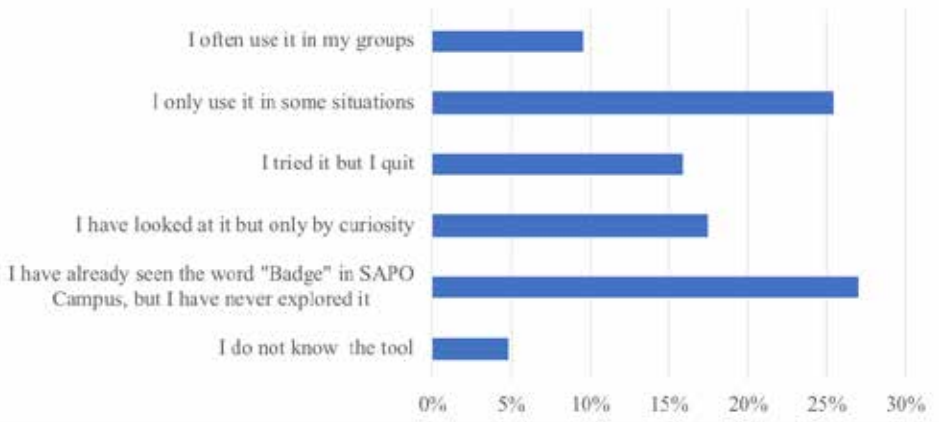


Figure 4. Grau de utilização da ferramenta de badges (N=63)

The graph analysis (Figure 4) shows that only 4.8% of the participants did not notice that the SAPO Campus platform had a badges' tool, which indicates that the tool is visible to the vast majority of managers. Another relevant fact is that 27.0% saw that there was a badge button but never felt the will or curiosity to check what

this tool was about. It suggests that they were indifferent to the badge concept, most probably because it is something associated with games and fun, something that is still seldom used in educational contexts. Also, 25.4% answered that they use the tool in specific situations and 9.5% use it frequently, which means that there is a regular use by 34.9% of the respondents.

Regarding other options, 15.9% of respondents answered they have used the badges' tool but have meanwhile given up. The reasons that lead to this withdrawal are mainly related to the necessary time to plan its proper use (44.4%). However, respondents also pointed out causes like the inadequacy of this activity to the group, being considered childish or even the lack of interest of the group on badges. All these reasons end up emphasizing the need to properly plan the badges' use, so that their creation and management are in accordance with the interests and importance of the strategy felt within the group.

Data also shows that it is necessary to analyse specific aspects of the badge tool use. The first question asked was about the best Portuguese word to express the badge concept (Figure 5). It should be noted that the Portuguese translation presents several different possibilities (Araújo, et al., 2018).

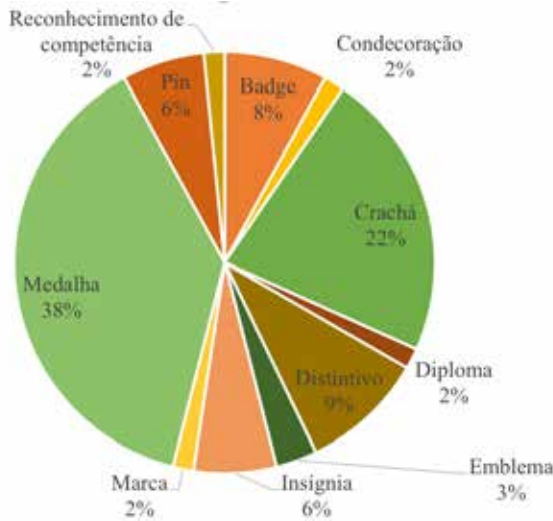


Figure 5. Distribution of answers about the best option to translate the badge word into Portuguese (N=63)

Figure 5 shows that the “Medalha” (Medal) option is the one that is more frequently chosen. However, this term is associated with the idea of competition that does not apply to most situations in which badges are attributed (Halavais, 2012). This is a discussion that should be carried out as a group to reflect on the implications of choosing each of the terms in Portuguese. As another option, there is also the possibility of keeping the feature name in English.

Another question pretended to know which permissions each of the members of a community should have in the badges’ tool. Respondents were asked to select one out of four possibilities (Figure 6).

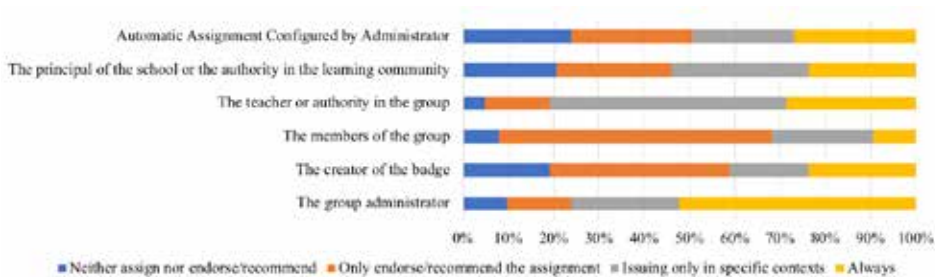


Figure 6. Permissions each type of SAPO Campus’ members should have in the Badge tool. (N=63)

The first fact that stands out is a clear division over the automatic attribution of badges: for 27.0% of the respondents this can be done in all situations (always); and 27.0% consider they should only be able to endorse/recommend; 23.8% consider there should be no automatic assignment of badges; and 22.2% consider that automatic assignment can be done in specific contexts. This means that 76.2% agree that this feature should be implemented in the SAPO Campus platform but are still divided on the exact permissions of users.

Another fact that stands out is the difference of permissions between the Administrator of the group and the creator of the badge; and between the authorities of the group and the community. A majority of 52.4% of the respondents consider that the administrator should always have total permission of assignment and recommendation of badges, but that is an opinion that is not shared by the remaining respondents. Values range from 28.6% for group authorities to 23.8% for both creator and community authorities. For 39.7% of the respondents, the member that creates badges should only be able to endorse/recommend them to

other members, and 52.4% consider that the authority in the group should be able to assign them but only in specific contexts. Finally, 30.2% also think the same permission applies to the authority in the community. Another interesting finding is that for 60.3% of the respondents, members should only be allowed to endorse/recommend badges, something that already happens in the SAPO Campus platform. However, 22.2% consider that they should be able to assign badges in specific contexts and 9.5% that they should always have full permissions.

The possibility of allowing members to import and use a repository of badges on their group, and also to reuse their content by editing it, is something that some other platforms allow (Edmodo and Moodle). However, this is not a feature available in the current version of SAPO Campus (Araújo, Santos, Pedro, & Batista, 2017b) and a question was included in the questionnaire on order to understand if members were available to share badges created by them with other administrators. Data shows that 92.1% of the respondents were available to share their badges so they could be reused and adapted by other administrators.

Finally, an open-ended question asked respondents about the difficulties experienced in using the badges creation and assignment tool (figure 7). This question was asked just for those who actually used it (n=30).

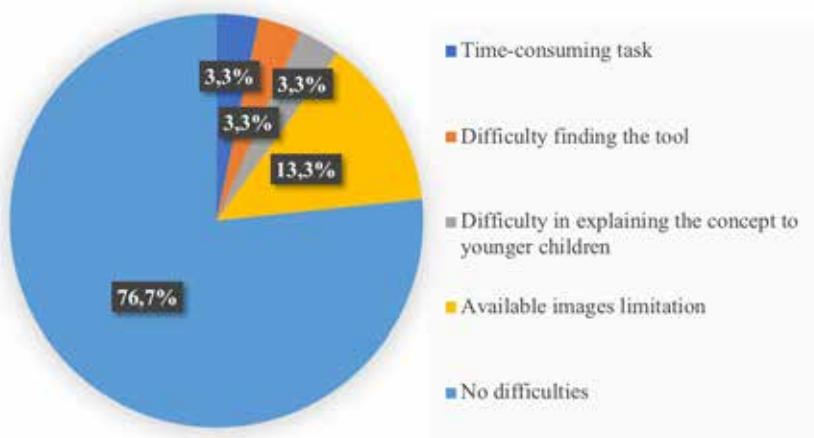


Figure 7. Distributing difficulty type felt with badge tool (N=30)

Figure 7 highlights the difficulties experienced by those who have already used the badges' tool in SAPO Campus. It should be stressed that the majority (76.7%) of respondents did not identify any problems. The most frequently mentioned difficulty is the limitation of the images available in the tool since the provided library has only 126 images and it is not possible to add new ones. The remaining difficulties should not be overlooked, although they were only mentioned by a single person.

These results are important to the analysis and decision making related to the modifications that will be implemented in the new version of Badges' tool in the platform.

Discussion

After the analysis of the responses to the questionnaire we were able to understand that the main problem concerning the use of this particular feature is not related to the badge tool itself but with the concept of badge itself. In fact, half of the respondents did not interact with the tool despite knowing it existed; and from those who use it, only a few use it frequently. Some respondents claim to have given up using the feature because it required a lot of time to plan properly, although some situations in which the group did not react as expected were also detected.

“(…) anyone who ventures in building a non-trivial badge system will probably face a huge badge conceptualization problem: what are the achievements in a specific case, what to badge/reward, under what conditions, and, most importantly, how to chain and prioritize the achievements?” (Jovanovic & Devedzic, 2015, p. 120)

Since badges are something new and are not part of the teachers' usual strategies, it is expected that without any previous examples it will be difficult for them to understand how they can make the best use of the tool. This problem, also highlighted by Jovanovic & Devedzic (2015), resulted in the creation of a MOOC entitled “Badges: how to use?” (Araújo et al., 2018, 2017a) and in the creation of a public blog with articles that present examples of badges that can be created and strategies that can be put in place, based on the examples created by the trainees who attended the MOOC (<http://campus.sapo.pt/blog/crachassugestoeseexemplos>).

It should be also stressed that “[e]stablishing the credibility of digital badges and ensuring that the various stakeholders value them is also important” (Dowling-Hetherington & Glowatz, 2017, p. 8). The value of badges depends largely on previous experiences and credibility within the community in which they are used (Halavais, 2012). There is, therefore, a long way to walk, which is not only related with more knowledge of the tools available to create badges and how they work but especially with a clearer understanding of the concept and its possibilities in different learning scenarios.

However, the tool must meet the needs of the users. By analyzing the answers we noticed that there are some possible changes that can improve its use, such as: decreasing the steps to access the badges creation and management tool; enabling the upload of new images, as other tools do (www.openbadgeacademy.com), but without losing the graphic identity of the platform; enabling new design shapes by adding new frames; allowing the sharing of badges that can be reused in other situations; and implementing the automatic endorsement/recommendation and attribution of badges.

Future Work

It is important to disseminate examples of good practices so that other teachers can also try to implement them in their own contexts. One of the interesting issues verified during the MOOC “Badges how to use?” was the fact that teachers who shared their examples recognised the positive impact on their students and the many issues that arose because other teachers were also interested in adapting this strategy in their own contexts (Araújo, et al., 2017a). It is therefore important to find a mechanism that allows sharing examples and good practices of the use of badges among SAPO Campus members.

For this some of the members who participated in the MOOC will be invited to join a discussion group about the new features to be implemented. This feedback will be crucial to match the platform’s features to the real needs of its users.

Finally, it is also important to proceed with studies related to the democratization of badges’ creation and assignment. The limited role that regular users have when they interact with badges in the platform should be questioned and new privileges

should be tested, in which any member of the platform will be able to create a badge or make a proposal for a new badge.

Being studied, these questions could lead to a renewed approach to the way teachers and students identify roles and responsibilities in educational contexts. We believe that this type of change is not possible to evaluate and implement through surveys with users that, probably, cannot imagine the consequences of this very different approach to teaching and learning.

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References

- Araújo, I., Pedro, L., Santos, C., & Batista, J. (2018). Crachás: como usar em contexto educativo? In M. J. Gomes, A. J. Osório, & A. L. Valente (Eds.), *Challenges 2017: Aprender nas Nuvens, Learning in the Clouds* (2a edição, pp. 159–176). Braga: Centro de Competência em Tecnologias de Informação e Comunicação na Educação (CCTIC-IEUM). <http://hdl.handle.net/10773/21672>
- Araújo, I., Santos, C., Pedro, L., & Batista, J. (2017a). Badges: How to use?: Training teachers through a MOOC. In M. J. Silva, C. Ponte, & J. M. Doderó (Eds.), *2017 International Symposium on Computers in Education (SIIE)* (pp. 1–6). Lisbon: IEEE. <https://doi.org/10.1109/SIIE.2017.8259667>
- Araújo, I., Santos, C., Pedro, L., & Batista, J. (2017b). Digital badges on education: past, present and future. In A. Skarzauskienė & N. Gudeliėnė (Eds.), *Proceedings of the 4th European Conference on Social Media (ECSM)* (pp. 27–35). Vilnius, Lithuania: Mykolas Romeris University. <http://hdl.handle.net/10773/21671>
- Burke, B. (2014). *GAMIFY: How Gamification Motivates People to do Extraordinary Things*. EUA: Gartner, Inc.
- Chou, Y. (2015). *Actionable Gamification: Beyond Points, Badges, and Leaderboards*. Octalysis Media.
- Dowling-Hetherington, L., & Glowatz, M. (2017). The Usefulness of Digital Badges in Higher Education: Exploring the Students' Perspectives. *Irish Journal of Academic Practice*, 6(1). <https://arrow.dit.ie/ijap/vol6/iss1/1>
- Gee, J. P. (2003). *What Video Games have to teach us about learning and literacy*. EUA: Palgrave Macmillan.

- Goligoski, E. (2012). Motivating the Learner: Mozilla's Open Badges Program. *Access to Knowledge*, 4(1), 1–8. <http://ojs.stanford.edu/ojs/index.php/a2k/article/view/381>
- Gray, B. (2004). Informal Learning in an Online Community of Practice. *The Journal of Distance Education / Revue de l'Éducation À Distance*, 19(1), 20–35. <http://www.synergiescanada.org/fr/journals/synpra/jde/16/103>
- Halavais, A. M. C. (2012). A Genealogy of Badges: Inherited meaning and monstrous moral hybrids. *Information, Communication & Society*, 15(3), 354–373. <https://doi.org/10.1080/1369118X.2011.641992>
- Hamari, J. (2017). Do badges increase user activity? A field experiment on the effects of gamification. *Computers in Human Behavior*, 71, 469–478. <https://doi.org/10.1016/j.chb.2015.03.036>
- Hanus, M. D., & Fox, J. (2015). Assessing the effects of gamification in the classroom: A longitudinal study on intrinsic motivation, social comparison, satisfaction, effort, and academic performance. *Computers and Education*, 80, 152–161. <https://doi.org/10.1016/j.compedu.2014.08.019>
- Jovanovic, J., & Devedzic, V. (2014). Open Badges: Challenges and Opportunities. In E. Popescu, R. W. H. Lau, K. Pata, H. Leung, & M. Laanpere (Eds.), *Advances in Web-Based Learning – ICWL 2014. ICWL 2014. Lecture Notes in Computer Science, vol 8613* (pp. 56–65). Springer International Publishing. https://doi.org/10.1007/978-3-319-09635-3_6
- Jovanovic, J., & Devedzic, V. (2015). Open Badges: Novel Means to Motivate, Scaffold and Recognize Learning. *Technology, Knowledge and Learning*, 20(1), 115–122. <https://doi.org/10.1007/s10758-014-9232-6>
- Kapp, K. M. (2012). *The Gamification of Learning and Instruction: Game-based methods and strategies for training and education*. San Francisco: Pfeiffer.
- Santos, C. M. N. (2016). *Estudo, concepção e desenvolvimento de uma plataforma integrada de serviços web 2.0 para utilização em contexto de ensino superior*. Universidade de Aveiro. Retrieved from <http://ria.ua.pt/handle/10773/18603>
- Santos, C., Pedro, L., Almeida, S., & Aresta, M. (2013). Decentralized badges in educational contexts: the integration of open badges in sapo campus. *eLearning Papers*, 35(November), 1–6. <http://openeducationeuropa.eu/en/article/Decentralized-badges-in-educational-contexts%3A-the-integration-of-Open-Badges-in-SAPO-Campus?paper=133343>
- Santos, C., Pedro, L., Ramos, F., & Moreira, A. (2011). Sapo Campus: what users really think about an institutionally supported PLE. <http://journal.webscience.org/565/>
- Zichermann, G., & Linder, J. (2013). *The Gamification Revolution: how leaders leverage game mechanics to crush the competition*. EUA: Mc Graw Hill Education.