

Badges: how to use?

Training teachers through a MOOC

Inês Araújo, Carlos Santos, Luís Pedro e João Batista

Digimedia - Digital Media and Interaction (CIC.Digital)

Department of Communication and Art (DECA)

University of Aveiro

Aveiro, Portugal

inesaraajo@ua.pt; carlossantos@ua.pt; lpedro@ua.pt e joao.batista@ua.pt

Abstract— In the scope of the school activities of the GamiLearning project, badges were issued to students, aiming to engage them in the online community created in the SAPO Campus platform. Analyzing the use of badges in the platform, it was possible to identify that only a few communities actually used the badges tool. In order to promote the use of Badges by the members of these schools a MOOC was designed and implemented. The MOOC was named “Badges: how to use?” and started on the 20th of April of 2017. This paper presents the assumptions underlying the creation of this MOOC, explaining how it was organized. It characterizes its participants and remarks are given on how to continue working with the participants through a community of practice about badges.

Keywords— Badges, Teacher training, MOOC, SAPO Campus, Gamification, Open Educational Practices.

I. INTRODUCTION

Research shows that badges used on educational contexts have advantages on motivation because they provide clarity to the learning objectives and provide immediate feedback to students [1]. However, the majority of SAPO Campus' users do not use this tool. From our standpoint, this happens because they have doubts about it or may think that is childish. They eventually try it, but only a few uses it regularly.

It is our intention with this article to explain the assumptions that lead to the creation and implementation of the MOOC *Badges: how to use?* and how this initiative was planned in order to encourage discussion between participants about the way they could use badges on their own educational contexts. The sharing of new and innovative examples of how to use badges will be encouraged during the MOOC, being our main intention to promote a community of practice where it will be possible to discuss how badges can be used on education and clarify the best ways teachers and trainers can use them.

II. BADGES: DEFINITION AND CONTRIBUTIONS

A badge is defined as a "symbol or indicator of an accomplishment, skill, quality or interest" [2]. In the Portuguese language, it can be translated using different terms such as “crachás”, “medalhas” or “distintivos” [3]. In the SAPO Campus platform the term “crachás” is the one used.

This research Project is funded by national funds through FCT - Fundação para a Ciência e a Tecnologia, I.P., within the project “GamiLearning - Digital Games for Mediatic and Informational Literacy” (UTAP-ICDT/IVC-ESCT/0020/2014).

For Halavais [4] "badges have baggage" (p.354), and that means that to understand how badges are used nowadays it is important to know their history because, as a symbol, they are culturally rooted. From all its uses throughout history it is possible to highlight badges as an identification sign or as a sign of honour, authority, and privilege. Badges were also an expression of a lived experience, of mastery, a sign of progress or even, more recently, as a form of training certification. It is important to note that badges are symbols with a clear meaning which is easy to understand by the community where they are used. However, it is difficult to transfer the exact same symbol between different contexts, since it is associated with experiences or behaviours with a specific meaning in each context of use [4].

How badges can affect education is not a consensual topic among researchers. For some, using badges is like using rewards and so it applies to students' extrinsic motivation, having short time effects and with a large possibility of disappearing or fading along the way [5]–[8].

However, for other researchers like Hamari [1], badges have clear objectives and provide instant feedback being associated with positive effects and promoting the accomplishment of education tasks. Another important fact regarding the use of badges is related to the social relevance of badges to their owners. By being visible and acknowledgeable, badges can be a positive influence to others in the community that may try to perform the same effort to receive that badge or honour its owner by its relevant achievements [1], [9].

This can be useful to programs of retention decrease where it is important to promote the positive perception of students' skills, developing the necessary skills to decrease their own difficulties [10]. It is also a way to promote the autonomy and self-regulation on learning because the issuing of badges can be used to create a learning pathway to be followed by students [11].

These are some of the advantages presented by researchers and, for that reason, we consider that it might be important to promote the use of badges apart from the selected platform. It is in this context that our work begins to deal with the unfamiliarity many teachers express about badges and in trying to collect examples of successful application of badges in educational contexts. These are the main reasons many

teachers presented as a justification to not use badges with their students.

III. BADGES ON THE SAPO CAMPUS PLATFORM

SAPO Campus is a Portuguese digital platform developed for schools and it results from a partnership between the University of Aveiro and the Portugal Telecom/Altice corporation [12]. This platform has a badge feature based on the Open Badges initiative that allows the assigning of badges to users [3], [13]–[15].

This feature is available in the platform since 2013, but it was only used in 46 Spaces¹ (communities) out of the 700 running in SAPO Campus (data from April of 2017). Table I presents the extent that badges have been assigned to users of SAPO Campus and how this is distributed through the Spaces using this feature.

TABLE I. NUMBER OF BADGES ASSIGNED IN SPACES WHERE THE FEATURE IS MOST USED (N)

Spaces	Administrators	Groups	Number of badges assigned			
			Total	Average	Mode	Median
S1	11	19	1054	70.3	1	12
S2	19	38	339	9.7	4	8
S3	24	40	194	5.4	1	3
S4	2	6	164	54.7	a	44
S5	2	5	129	43.0	a	20
S6	2	4	116	116.0	a	116
Total of all Spaces	105	162	2353	14.5	1	4

a: no value

Between May 2013 and March 2017 2353 badges were assigned in SAPO Campus. A relevant percentage of badges 44.8% (n=1054) were assigned in one particular Space (S1). Inside this Space (S1) it is possible to find a Group very active with 726 (30.9%) badges assigned and an administrator that is responsible for 551 (23.4%) badges assignments. Other interesting fact is that in same Space (S1) the mode is only 1, but the median is 12 assigned badges. This means that most group administrators have assigned 1 badge, maybe to see what happens, but the use of this feature is mainly concentrated on a few administrators.

Analysing the 46 Spaces where badges were assigned it is important to note that in 14 Spaces (30.4%) only 1 badge was assigned. This means that in these Spaces and Groups only one user was assigned with a badge. This opens a critical question about maintaining feature in the platform. If so few users actually use it why is this feature needed?

In a first attempt to understand why the feature is not used, we asked administrators on SAPO Campus to answer a survey. We received a total of 63 responses (Fig.1) and it was possible

¹ SAPO Campus organizes communities in Spaces, and sub communities in Groups. This means that communities exist in SAPO Campus mainly through Spaces and, afterwards, members of that community can create small communities inside that Space by creating Groups.

to verify that only a minority (9.4%) uses this feature to assign badges regularly and 25.0% of respondents only uses it in specific situations.

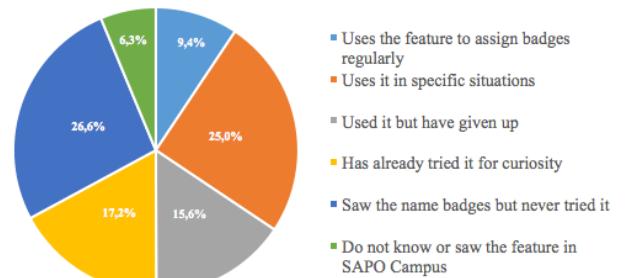


Fig. 1. Degree of use of the Badges feature in SAPO Campus

It is important to notice the fact that only 6.3% of the respondents do not know or saw the feature in SAPO Campus. From the rest, 26.6% saw it but never tried it, 17.2% have already tried it out of curiosity and 15.6% used it but have give it up in the meantime.

This means that it does exist some curiosity about the use of badges. However, the effective use of badges is concentrated on a few users, as discussed in Table 1.

Facing these facts, having experience about the use of badges in educational contexts [15], [16] and theoretical support [3], [17], the team of the GamiLearning Project decided to promote a training programme for teachers and researchers that are interested in badges. It was our intention to disclose how badges can be used apart of the platform chosen and also to understand the major difficulties and advantages of the use of badges by teachers. All the information collected during this training programme will be used in the redesign and development of this feature for the next version of the SAPO Campus platform.

IV. MOOC – BADGES: HOW TO USE?

A. Context

This MOOC was presented as an activity integrated in the scope of the GamiLearning² project, whose main objective is the promotion of collaborative learning with digital games for the development of digital literacy. To achieve this goal, the SAPO Campus platform was used as a communication and collaboration tool among the participants in the project, allowing students to share the work developed in the creation of games in the Scratch platform. In addition, in order to encourage sharing and interaction on content among students, a badge system was implemented in the Groups the students belonged to. After this experience and in order to provide access to the knowledge developed in the scope of these tasks to other professionals (e.g. teachers and trainers), an open access online training was planned and implemented.

² <http://gamilearning.ulusofona.pt/>

With this training programme it was intended, therefore, to provide an experience of sharing, collaboration and professional enrichment to the trainees enrolled. This programme was addressed to teachers, trainers, technicians and any other interested in this subject of badges.

Throughout the training the main contents, themes and resources were presented and debated by the participants so that, later, they could test them and make known their results to the community. Above all, it was intended to create a community that encouraged the sharing of experiences around the broader thematic related to the use of badges in educational contexts.

So for about 6 weeks, between April 20 and June 1, 2017, and under the guidance of one of the team members, we shared resources, tutorials, and launched challenges and scheduled synchronized conversations. All these resources are available online for consultation, even after the end of activities.

This training can be classified as a MOOC (Massive Open Online Courses), an educational modality that is broadly defined as “courses designed for large numbers of participants, that can be accessed by anyone anywhere as long as they have an internet connection, are also open to everyone without entry qualifications, and offer a full/complete course experience online for free” [18, p. 1]. It is within this scope that the frequency of this training does not have any formal evaluation nor does it make it possible to obtain accredited certification. Its trainees will only be awarded a badge that recognizes the completion of the tasks and that they keep in their Backpack³.

This initiative received a total of 217 registrations and, after the first three weeks, 122 participants had already joined the Online Space⁴.

B. Objectives

The objectives of this open access training were:

- To encourage a community in SAPO Campus where professionals in the area of education / training could find information and peers in order to share information about how badges can be used.
- To disseminate support material to respond to the participants' needs.
- To disclose national and international examples of the use of badges.
- To discuss the use of badges and find the most effective strategies for particular situations.
- To understand the difficulties and needs felt by the participants regarding the use of badges.

In order to achieve these objectives it was essential to create an online space where a community could initiate learning interactions that could provide shared learning experiences.

³ <https://backpack.openbadges.org>

⁴ <http://crachascomousar.campus.sapo.pt/>

Based on this purpose, it was hoped that the space created could become a community of practice, which, according to Gray [19], corresponds to self-organized informal learning systems that share the same interest in a theme, develops through community interaction and learning, and brings together all the evidence in a common repository. By associating these ideas with concepts such as Open Educational Resources (OER) and Open Educational Practices (OEP), it is possible to stimulate groups of teachers interested in the subject that can consult, reuse or adapt existing resources, but also share their common learning through the creation of new materials that can be disseminated.

The methodology of “OEP as moving beyond a content-centred approach, shifting the focus from resources to practices, with learners and teachers sharing the processes of knowledge creation” [20, p. 3] was valued in this initiative since it intended to provide trainees with information and starting points that could help them to understand what badges are and how they can be used. However, it was through the MOOC and through the dialogue and sharing of ideas, that it was expected to find suggestions of application and also indications on the best examples to use with different degrees of education. Thus, trainees and trainers would unite for the development of knowledge about how to apply the concept of badges to the Portuguese educational reality. Since there is no place to accredited certification, we expect learners to participate by their genuine interest in the subject, which will make dialogue and sharing a rich knowledge creation process.

C. Activities plan

Since it is intended to generate moments of sharing and exchange of ideas between the participants, only the fundamental concepts were introduced to understand what badges are and how they can be used in educational contexts.

For this reason, the MOOC is divided into three parts, one of familiarization with the platform, a second more theoretical and another more practical:

- Part 0 (1st Week)
 - Registration and presentations
- Part I (2nd and 3rd Weeks)
 - What are badges?
 - Definition
 - Historic evolution
 - Open Badges
 - Platforms and infrastructures.
 - Types of badges / taxonomy
- Part II (4th to 6th Weeks)
 - Create a badge
 - Idealize a system of badges
 - Assessment and reflection

The first week was used to introduce the SAPO Campus platform, allowing new users to understand its features and how users could navigate and interact within it. The work related to the use of badges ran between the 2nd and 6th week.

The trainees had different tasks to accomplish during the 6 weeks program (Table II), which were intended to encourage dialogue and sharing of ideas about the use of badges.

TABLE II. DESCRIPTION OF THE TASKS THAT THE TRAINEES WERE INVITED TO CARRY OUT DURING THE 6 WEEKS PERIOD IN WHICH THE MOOC TOOK PLACE

Time	Task	Description
Online Registration	Create an account SAPO Campus Profile editing	If the trainee does not already have it, he / she must create an account in SAPO Campus and join the Badges Community. Edit or update profile information on SAPO Campus.
Presentation Week 1	Group presentation	Online presentation to colleagues.
	Badge support to colleagues	Support the assignment of a badge to colleagues according to the presentation made by each one.
What are badges? Week 2	Sharing a badge example	From a list of platforms that provide badges, identify and share an example indicating how you would apply it in your current context.
Types of badges / taxonomy Week 3	Sharing Ideas	By presenting one type of badge a day, members are asked to indicate in which situation they would use it.
Badge Creation Week 4	Share and comment created buttons	Starting from a template that will be made available, each trainee should create a badge that will use and share it. Create a badge using one of the platforms to create badges and share. Discuss colleagues' sharing.
	Webinar	Watch or participate in an online conversation about the previous shared examples
Idealize a system of badges Week 5	Idealize a system of badges	Through a Mind Map tool each trainee should create a scheme of a badge system that they can share with colleagues.
	Comment proposed systems	Discuss the systems proposed by colleagues
Final debate Week 6	Webinar	Watch or participate in an online conversation about the previous shared examples and general conclusions.

D. Online Space Organization "Badges: how to use?"

SAPO Campus is a platform for digital communication, which has the possibility of storing files (Documents, Images and Videos) and scheduling tasks. In addition, it is possible to create blogs for longer articles.

Taking into account these functionalities, the online space "Badges: how to use?" was organized as follows:

- Through the Groups feature it was possible to create communication channels where participants could talk with colleagues who work with students of the same age. The interaction in these Groups was not moderated.
- The Groups functionality also served to differentiate the stages in which the activities took place. A new Group was made available at the start of each week. This allowed everyone to advance at their own pace, even if they would enter online space at a later stage of the training.
- Through the Blogs feature, the information for consultation was organized as follows:
 - Blog "General Information" - alerts and news about the course of training;
 - Blog "Badges: Concepts" - theoretical information;
 - Blog "Tutorial Badges" - practical information;
 - Blog "Suggestions for using badges" - systematization of information collected during training;
 - Blog "Frequently asked questions" - a support blog.
- The activities carried out each week were created through the Tasks tool which allowed the trainees to be notified of the date in which they take place.
- Finally, badges were used to signal the fulfillment of the activities requested, while allowing trainees to experience the process of receiving, supporting, creating and assigning badges.

In this way, it was possible to create a course of self-learning and sharing among the trainees, as well to generate new ideas about the possible applications of badges in educational contexts.

E. Characterization of trainees

The enrollment in this training was open during the month of April 2017 and the event was publicized through social networks, the SAPO Campus platform, websites of ERTE and School Libraries. In all, 217 registrations were received, of which 122 trainees joined the online space, until the end of the third week.

The Online Space "Badges: How to use?" had 122 members, mostly female (72.9%) and they had teaching as their main profession (83.8%).

In order to understand the participants' use of different digital tools, the registration form requested the indication of the tools they frequently used in their professional activity (Fig 2).

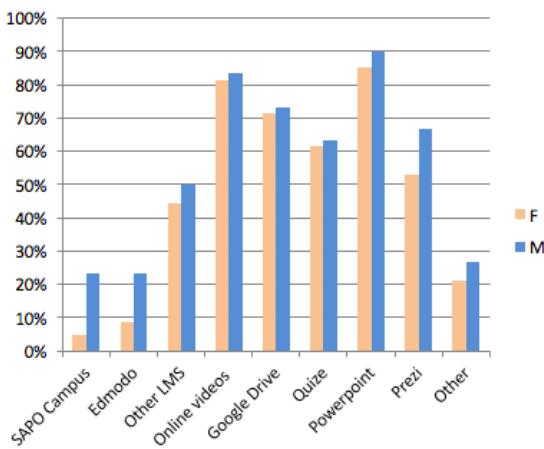


Fig. 2. Use of different digital tools by sex of members.

PowerPoint was the most used tool, mentioned by 85.2% of women and 90% of men. Following were online videos (Vimeo, YouTube) with values close to 80%. It should be noted that the SAPO Campus platform is used only by a minority of the participants: 4.9% of the women and 23.3% of the men, which made it necessary to include support materials and tutorials to guide participants in the entry and use of the platform.

Participants were also asked about the experience they already had about badges (Fig. 3), and it was verified that for a significant number of participants, this was a relatively new theme.

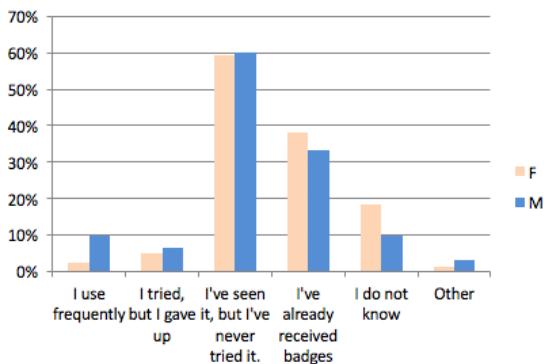


Fig. 3. Trainees' experience regarding the use of badges by sex.

Participants totally unaware of this theme were only a minority (18.5% of women and 10.0% of men). At least one third of the trainees had already received a badge (38.3% of the women and 33.3% of the men) and most have already contacted the tool on platforms uses (59.3% women and 60.0% men). However, those who use or have already tried badges are also a minority (2.5% and 4.9% of women and 10.0% and 6.7% of men).

This data (Figs. 2 and 3) shows that the trainees participating in this training used a wide variety of digital tools, but that their contact with the badges was reduced.

V. FINAL CONSIDERATIONS

With the start of the MOOC the interaction was high, due to the novelty or curiosity that an online training naturally arouses (Fig. 4). It was normal that with the advancement of training, only a portion of the participants remained active. "The findings indicated that social learning communities are built and continue only while the course is open and while the teachers are involved in fostering participation." [20, p.40]. It was therefore essential the participation of the project team, so that the debate of ideas continues, inviting trainees to share their experiences.

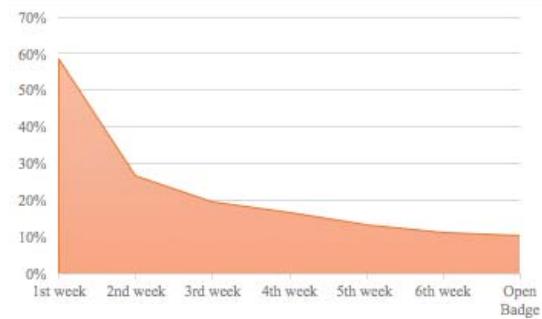


Fig. 4. Percentage of trainees to whom a badge was issued as recognition for completing assignments for each week.

Two hundred and ten badges (until July 12, 2017) were assigned throughout this training. However, an abrupt difference between the first (60.7%) and the second (27.9%) weeks in terms of trainees who were assigned badges for the completion of the tasks was visible. This may be explained by the difference of requested tasks. In the second week, it was required a greater effort in terms of time availability to complete the activities. It is noteworthy that 18 people (14.8%) completed all the tasks receiving the Open Badge⁵ that recognizes the completion of the MOOC.

However, throughout the MOOC a significant set of interactions were carried out, and were collected just as the set of shares and comments made. It is our intention to carry out a content analysis about the discussion of ideas and sharing during the MOOC, in order to find answers to the following questions:

- What is the best translation into Portuguese of the term badge?
- In which contexts is it possible to apply each of the types of badges identified?
- What kind of badges will be used most for each cycle of education?
- Which are the main difficulties and concerns of teachers when assigning badges?

In addition to the answers to these questions we intend to collect particular examples or ideas about the use of badges in educational contexts. In this sense, all those who completed the MOOC were invited to discuss examples of badges that can be

⁵ [https://www.openbadgeacademy.com/badge/2209\[tab=10\]](https://www.openbadgeacademy.com/badge/2209[tab=10])

used in an educational context. It is the objective of this community to create a collection that can be consulted by anyone that is interested in badges, and then to apply the suggestions they consider most useful to their own context.

All of this work will be published openly, enabling many other interested teachers to learn how to effectively use the badge assignment tool that is often already available on the LMS platforms they use with their classes.

Questionnaires were also carried out to evaluate the perception of the MOOC, both by those who finished, and by those who could not finish it or could not join the online space. This will allow us to correctly evaluate the whole experience described here.

This initiative aimed to enable teachers to use and assign badges. However, beyond this intention, it was expected that this training would allow the collection of examples of implementation of the badges feature in a particular educational context and in an effective and practical way, promoting the sharing of ideas and the debate among teachers of different grades of teaching. In this way, it was intended to generate new knowledge (OEP) that could be transmitted to new members or in new formations that may exist on this theme.

Finally, it was our intention to assist in the reformulation of the badges' assignment tool, thus approaching it to the needs felt by those who will use it.

REFERÊNCIAS

- [1] J. Hamari, "Do badges increase user activity?? A field experiment on the effects of gamification," *Comput. Human Behav.*, vol. in Press, pp. 1-10, 2015.
- [2] Mozilla Open Badges, "Badges," *MozillaWiki*, 2014. [Online]. Available: <https://wiki.mozilla.org/Badges>. [Accessed: 19-Oct-2016].
- [3] I. Araújo, L. Pedro, C. Santos, and J. Batista, "Crachás: como usar em contexto educativo?," in *Challenges 2017: Aprender nas Nuvens, Learning in the Clouds*, 2017, pp. 157-174.
- [4] A. M. C. Halavais, "A Genealogy of Badges: Inherited meaning and monstrous moral hybrids," *Information, Commun. Soc.*, vol. 15, no. 3, pp. 354-373, 2012.
- [5] B. Burke, *GAMIFY: How Gamification Motivates People to do Extraordinary Things*. EUA: Gartner, Inc., 2014.
- [6] Y. Chou, *Actionable Gamification: Beyond Points, Badges, and Leaderboards*. Octalysis Media, 2015.
- [7] K. M. Kapp, *The Gamification of Learning and Instruction: Game-based methods and strategies for training and education*. San Francisco: Pfeiffer, 2012.
- [8] G. Zichermann and J. Linder, *The Gamification Revolution: how leaders leverage game mechanics to crush the competition*. EUA: Mc Graw Hill Education, 2013.
- [9] J. P. Gee, *What Video Games have to teach us about learning and literacy*. EUA: Palgrave Macmillan, 2003.
- [10] F. Peixoto, V. Monteiro, L. Mata, C. Sanches, J. Pipa, and L. S. Almeida, "'To be or not to be Retained ... That's the Question!' Retention, Self-esteem, Self-concept, Achievement Goals, and Grades," *Front. Psychol.*, vol. 7, no. October, pp. 1-13, 2016.
- [11] R. M. N. Pinto, "As aplicações hipermédia podem promover o sucesso escolar e a autorregulação da aprendizagem? Análise da eficácia de uma aplicação hipermédia," Universidade do Minho, 2014.
- [12] L. Pedro, C. Santos, J. Batista, G. Cabral, F. Pais, and C. Costa, "Social Network Analysis and Digital Learning Environments: a Framework for Research and Practice Using the Sapo Campus Platform," in *10th International Technology, Education and Development Conference (INTED2016)*, 2016, pp. 1061-1070.
- [13] L. Pedro, C. Santos, M. Aresta, and S. Almeida, "Peer-supported badge attribution in a collaborative learning platform: The SAPO Campus case," *Comput. Human Behav.*, vol. 51, pp. 562-567, Oct. 2015.
- [14] C. Santos, L. Pedro, S. Almeida, and M. Aresta, "Decentralized badges in educational contexts: the integration of open badges in sapo campus," *eLearning Pap.*, vol. 35, no. November, pp. 1-6, 2013.
- [15] C. Santos, F. Ramos, and L. Pedro, "Repensar a tecnologia em contextos educativos: o SAPO Campus no DeCA," *Indagatio Didact.*, vol. 6, no. 1, 2014.
- [16] I. Araújo, L. Pedro, C. Santos, and J. Batista, "Crachás: como usar em contexto educativo?," in *Challenges 2017: Aprender nas Nuvens, Learning in the Clouds*, 2017, pp. 157-174.
- [17] L. Pedro, C. Santos, S. Filipa Almeida, F. Ramos, A. Moreira, M. Almeida, and M. João Antunes, "The SAPO Campus recommender system: a study about students' and teachers' opinions," *Res. Learn. Technol.*, vol. 22, no. 0, Aug. 2014.
- [18] I. Araújo, C. Santos, L. Pedro, and J. Batista, "Digital badges on education: past, present and future," in *Proceedings of the 4th European Conference on Social Media (ECSM)*, 2017, pp. 27-35.
- [19] OpenupEd, "Definition massive open online courses," Heerlen, 2015.
- [20] B. Gray, "Informal Learning in an Online Community of Practice," *J. Distance Educ. / Rev. l'Éducation à Distance*, vol. 19, no. 1, pp. 20-35, 2004.
- [21] C. Cronin, "Openness and praxis: Exploring the use of open educational practices in higher education," *Int. Rev. Res. Open Distrib. Learn.*, 2017.
- [22] M. Lima and M. Zorrilla, "Social Networks and the Building of Learning Communities: An Experimental Study of a Social MOOC", *International Review of Research in Open and Distributed Learning*, vol. 18, no. 1, 40-63, 2017. <http://dx.doi.org/10.19173/irrod.v18i1.2630>