

Supporting crowdsourcing in MOOC informal face-to-face meetings

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Abstract. MOOCs are currently one of the main buzzwords in education. These particular online courses are characterized by the openness of their contents, which are typically packaged in video format, and by the large number of participants. This large number of potential learners facilitates creating distributed communities with similar interests around the world that can physically meet periodically to share their thoughts, discuss about the MOOC topics and help students with problems to overcome the difficulties. These meetings are informal since they are outside the course schedule and MOOC teachers do not normally participate on them. Nevertheless, it could be of interest for MOOC teachers to offer a tentative structure that leads the face-to-face discussions in these informal meetings, as well as to collect the main conclusions at the end, so that these conclusions can be the starting point in meetings held at other locations. This paper explains how this informal learning setting could leverage the advantages of using tags to connect MOOCs with face-to-face encounters and the tag-based authoring tool etiquetAR as the support for providing a structure for the discussions and collecting the conclusions of these meetings.

Keywords: MOOCs, informal face-to-face meetings, crowdsourcing.

1 Introduction

MOOCs (Massive Open Online Courses) have caused a disruption in education [1], allowing learners to receive affordable training from major institutions worldwide. MOOC also allow educators to reach thousands of learners interested in improving their knowledge in a given subject, no matter their origin, age or literacy [2]. This is possible thanks to the spread of the Internet and the appearance of initiatives like Coursera¹, edX², Udacity³ or MiríadaX⁴, which allow the centralization of MOOC contents and assignments, enabling the access to a large number of concurrent users.

From an educational perspective, MOOCs are positioned on the border between formal and informal learning. From the formal learning perspective, many MOOCs

¹ <https://www.coursera.org/>

² <https://www.edx.org/>

³ <https://www.udacity.com/>

⁴ <https://www.miriadax.net/>

replicate traditional face-to-face courses used in Higher Education curricula, but distributing the content online, generally in a video format [3]. Further, some Universities have already begun exchanging MOOCs for credits in formal education (e.g. University of California, Duke University, University of Pennsylvania, Deakin University) [4, 5], although drop-out rates are much higher in MOOCs than in traditional formal learning [6]. From an informal learning perspective, many of the MOOC participants do not seek credits, but to acquire knowledge in subjects of their interests as part of their life-long learning [7]. Here is the main disruption of MOOCs as they break with the tradition of academic disciplines of the need to recognize knowledge through certificates [7]. In addition, MOOC participants have the opportunity to learn whenever and wherever they want (e.g. at home, at work, while in the public transport), this being a key feature in informal learning settings.

MOOCs also pose new challenges for institutions, teachers and learners, opening up the opportunity for new business models and pedagogies [8]. For example, one of the main challenges concerning pedagogy in MOOCs is that teachers need to change their role because they cannot assume their traditional functions of centralizing the support to students' doubts, as it happens in the classroom or in online courses with a low number of students [9]. Actually, in MOOCs the community of learners is expected to support their peers, teachers becoming facilitators that encourage discussion, reflection and sharing during the course [10].

In MOOCs (and especially in the so-called connectivist MOOCs or cMOOCs [11]), interactions within the community of learners are a key issue, these interactions being usually mediated by social online tools, which sometimes are included in the MOOC platform (e.g. forums) and sometimes are external to it (e.g. Facebook or Twitter) [12]. However, the large number of participants in MOOCs also raises the opportunity to arrange informal face-to-face meetings between groups of people who live in the same location, in order to continue the discussion about the MOOC and support those peers with problems. Actually, it is possible to find MOOC communities in the Meetup⁵ website for Coursera⁶, edX⁷ or Udacity⁸. These offline group meetings can be a motivation for learners to create a social network around the MOOC and get in touch with people that have similar professional occupations and passions. Actually, there are ongoing works researching the potential in learning of creating face-to-face study groups to discuss and reflect about MOOC contents [13]. Preliminary results on this line show that these kinds of informal face-to-face meetings encourage learners for not dropping out the course.

Nevertheless, while MOOC teachers can follow learners' contributions in the social online tools around the MOOC, in most cases they have no clue on what it is going on during informal face-to-face meetings. That hinders the detection of emergent topics generated during these meetings that may be of interest for the learners that cannot attend. Even more, it might be the case that those discussions that are closed in one face-to-face meeting are repeated in another different location, due to the lack of awareness of what happened in previous meetings.

⁵ <http://www.meetup.com>

⁶ <http://www.meetup.com/Coursera/>

⁷ <http://www.meetup.com/edX-Global-Community/>

⁸ <http://www.meetup.com/Udacity/>

In order to overcome the aforementioned limitations this paper proposes augmenting learners' experience in MOOC informal face-to-face meetings adding a layer of digital information about the MOOC contents and structure. This layer is added using Quick Response (QR) [14] codes generated with *etiquetAR*⁹ [15], which is a web-based and mobile-based authoring tool that allows the creation of personalized QR codes. Thanks to *etiquetAR*, teachers can structure the discussion in MOOC informal face-to-face meetings, and learners can contribute *in situ* with the conclusions of their face-to-face discussion. Further, other groups at different locations can start working from these conclusions, generating more elaborated contributions, as a way of informal situated crowdsourcing in MOOCs.

The remaining of this paper proceeds with a brief overview of the *etiquetAR* authoring tool, including the main features that make it of interest for supporting these particular informal learning settings. After that, the paper details a scenario in which QR codes generated with *etiquetAR* will be employed to support crowdsourcing in MOOC informal face-to-face meetings. Finally, conclusions and future work serve to close the paper.

2 Brief overview of *etiquetAR*

etiquetAR is both a web-based and a mobile-based application that supports the design and enactment of augmented learning experiences based on QR codes. Fig 1 shows an overview of *etiquetAR*. The functionality offered by this tool varies depending on the stakeholder: teachers use *etiquetAR* as a web-based authoring tool for the creation and management of QR codes, while learners use the mobile-based version of this application to access the content related to the QR codes.

Through the web-based version of *etiquetAR*, teachers can create QR codes and include them in a collection that will be managed from the *etiquetAR* web interface. Each QR code supports different profiles in a way that teachers can associate different contents to the same QR code. Teachers can include questions within each content to foster discussion in augmented learning experiences in which learners employ *etiquetAR*. Teachers can visualize the answers provided by learners to these questions, and hide those that are unrelated or inappropriate. Finally, *etiquetAR* allows exporting and downloading QR codes as images that can be printed and placed at any locations.

Through the mobile-based version of *etiquetAR*, learners can access the content associated to each QR code through any QR code scanner. After reading the code, learners are requested to select one of the multiples profiles defined for that QR code. Further, learners can read the questions included as part of the contents and the existing answers to these questions, as well as contribute with new answers.

⁹ <http://etiquetar.com.es>



Fig. 1. Overview of etiquetAR with the logo on top: (a) Web application (b) Mobile application

In summary, etiquetAR is a tool that allows teachers creating and personalizing QR codes, as well as learners accessing and commenting these QR codes. etiquetAR is conceived to support the creation of innovative scenarios for sharing, collaborating, reflecting and learning.

3 Situated crowdsourcing in MOOC informal face-to-face meetings with etiquetAR

MOOC informal face-to-face meetings have the problem that teachers (and other students that cannot attend) are not aware of what goes on in these meetings. Further, if students do not have the ability to lead the discussion by themselves, then teachers should be responsible for providing a structure. In order to overcome these limitations, we propose the use of QR codes and etiquetAR for MOOC informal face-to-face meetings as shown below. To the best of our knowledge, QR codes have not been used in face-to-face group discussions beyond providing access to static contents, and major MOOC initiatives do not include specific fields in the course description to include a QR code that allows identifying and accessing the course. Therefore, we consider the use of QR codes and etiquetAR an innovative initiative to improve MOOC informal face-to-face meetings.

In a first step, the teacher generates a QR code for the course with etiquetAR. This QR code can be for instance part of the course logo, redirecting to the course home page whenever scanned. As the course advances, the teacher creates different profiles associated with the same QR code using etiquetAR. These profiles act as labels that redirect students to particular URLs. For example, the teacher may choose to create a profile every new week. That profile would redirect to the MOOC contents that are addressed during that week, or to the threads that learners should discuss in the

informal face-to-face meetings held across the globe during that week. Also, and thanks to *etiquetAR*, the teacher associates a set of questions to each of these profiles. These questions can be employed to lead the debate in the face-to-face meetings. Thus, with *etiquetAR*, MOOC teachers are able to associate different contents and questions to one single QR code, which in this case acts as the banner of the MOOC.

In a second stage, learners attend the face-to-face meetings. One of the attendees prints the course logo and carries it with him with a twofold purpose: identifying the people participating in the face-to-face meeting (if they are in a public place they need a way for recognizing themselves because they probably do not know each other); and letting participants scan the QR code with their smartphones or tablets. In this way, they can easily access the content for that session and the questions posed by the teacher. After the discussion, one of the attendees submits the conclusions answering each of the questions set by the teacher. Since *etiquetAR* tags allow adding comments, the attendees can see the conclusions of other meetings that were held before. Therefore, learners can be aware of their peers' contributions, and do not need to start the discussion from scratch, ensuring richer conclusions as the overall outcomes of these informal meetings. Further, this awareness mechanism can also be useful to refute some of the arguments given in other groups of learners and finding differences arising from the culture or language depending on the location.

After that, the teacher uses the web-based version of *etiquetAR* to see the contributions generated in the informal face-to-face meetings, and detects emerging issues or potential conflicts. These new issues and conflicts can be addressed in the social tools of the MOOCs or in subsequent video lectures. It is important to note that if the teacher finds responses to the questions that are not relevant for the MOOC or that may be confusing, he can hide them through the *etiquetAR* web interface.

This scenario aims to answer two research questions. The first one is whether the use of QR codes and *etiquetAR* enriches the discussion in MOOC informal face-to-face meetings. In order to answer this question two experiments will be conducted, each with five different discussion groups gathered at different locations. In the first experiment, groups will not have access to their peers' conclusions, while in the second experiment they will be able to see them by scanning the QR code. The teacher will assess the accuracy and correctness of the answers to see if they increase in the second experiment, concluding in that case that QR codes and *etiquetAR* can be useful as a way of informal situated crowdsourcing. The second research question is whether students increase their awareness of what is happening elsewhere around the MOOC. The same two experiments will serve for addressing this question.

All in all, the use of QR codes generated with *etiquetAR* aims to give support to the three main problems detected in MOOC informal face-to-face meetings: teachers can structure the discussion; teachers and students are aware of what goes on in the meetings; and students avoid wasting time on issues that were already solved in other meetings.

4 Conclusions

MOOCs are learning environments that combine features of traditional formal education, arranging learning contents in many cases according to Higher Education

programs; but also of informal learning, allowing students learn anytime, anywhere with the support of a large community of peers. Actually, one of the main potentials in MOOCs is the opportunity for generating rich discussions among learners, which can take place in online software tools and within informal face-to-face meetings held at different locations. Nevertheless, the problem with these face-to-face meetings is that, in general, they are not bound to the course, and teachers and learners are not aware of what happened in them, despite the great interest their conclusions may have to detect hot topics and lay the groundwork for other meetings organized at other places.

This paper proposes the use of QR codes generated with etiquetAR to facilitate connecting MOOCs and informal face-to-face meetings related to these MOOCs. The features provided by etiquetAR support the detection of the main contributions that happened during these meetings, serving also to promote further discussions in the meetings hosted at other locations. Moreover, etiquetAR gives support to MOOC teachers for providing a structure of questions aimed at guiding the discussion during these face-to-face meetings.

As future work, an experiment will be carried out on the next edition of the MOOC Digital Education of the Future [12], in which QR codes generated with etiquetAR will give support to informal face-to-face meetings. Also a further study will be conducted aimed at detecting and classifying the kinds of informal learning settings that may appear in the context of MOOCs, stressing those that can entail collaboration among learners.

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