MOOCs in Europe

Overview of papers representing a collective European response on MOOCs as presented during the HOME conference in Rome November 2015

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OpenQuest: Designing a Motivational Framework for MOOCs Instruction
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Abstract

This paper introduces an innovative motivational framework for Massive Open Online Courses (MOOCs) instructional design coined as Open Quest Framework (OpenQuest). OpenQuest aims to improve learning and user engagement in MOOCs by drawing lessons from the success of quest-based initiatives, gamified web platforms, and massive-multiplayer online games (MMOs). The framework is grounded on established motivational theories such as the Self-Determination Theory and Situated Motivational Affordance. It supplements existing MOOCs design schemes that usually focus on pedagogy, assessment and technology. It features specific motivational mechanisms including, quests and narration, reputation systems, progression mechanisms, multiple learning pathways, well-designed feedback and social elements, that can be used to enhance learners’ engagement and personalize learning.

Keywords

MOOC, gamification, motivation, pedagogy, learning

1 Introduction

This paper proposes in brief a new theoretical motivational framework which describes how game elements can benefit MOOC instructional design by enhancing learners’ engagement. It builds upon the work of design frameworks that outline the pedagogical and technical aspects of MOOCs design such as MOOC canvas (Alario-Hoyos et al., 2014) and Mazaro’s taxonomy design framework. The aim is to present the first, theoretically-driven, motivational framework on MOOCs design, called OpenQuest. Specifically, it reviews a number of motivational theories and their applicability to the case of MOOCs design, it analyses literature on quest-based learning, gamified web-platforms and multi-user games to provide evidence-based recommendations on how specific game mechanisms can work motivationally in the case of MOOCs.

2 Theoretical background

The proposed framework tackles the need for motivating learners towards MOOC completion by considering learners’ initial motives for participation and the reasons justifying their exit from a MOOC. OpenQuest extends suggestions to add motivational design elements to existing design frameworks (Mystakidis & Berki, 2014) and is grounded on the following motivational theories. Self-determination theory postulates that intrinsically motivating actions can be enacted in environments that exhibit choices, direct feedback, optimal challenges, self-directed interaction and social connectedness (Ryan, Rigby, & Przybylski, 2006). The theory of Situated Motivational Affordance (Deterding, 2011) stresses the need for a meaningful integration of game elements in a system, including understanding users (expectations, skills) and the organizational context of learning (e.g., CPDs acquisition, curiosity), if it is to work motivationally. Flow theory is a ‘classic’ approach for designing optimal learning experiences. To become absorbed in an activity requires a match between
a person's capabilities and level of difficulty (Csikszentmihalyi, 1990). Learning should be flexible for learners to customize and self-direct it based on their own learning needs. Overall, the centre of the proposed framework is the learner; user-centred design is proposed as the key to a meaningful MOOCs motivational design.

3. A motivational framework for MOOC instructional design

OpenQuest consists of gaming and social mechanisms emerging from either the previously discussed theories or online applications that successfully engaged users. Following we present the five first elements of the OpenQuest framework: (1) Delivering the content of a MOOC in the form of quests where learning comes out as a natural characteristic of play are found effective in terms of learning performance, persistence and engagement in initiatives such as the Quest to Learn11 and the 3D GameLab12. Quests can be arranged in the form of a story/narration where learners’ responses contribute to the story’s progression. (2) Reputation systems provide rewards to learners. For example, badges, social and scientific scores contributed to iSpot’s creation and maintenance of a large community of users (Clow, 2013). (3) Adaptable leaderboards increased behavioural change towards social and business objectives (Abadi, H. K. Mandayam, C., Yue, J. S., Zhu, C., Merugu, D., Prabhakar, 2014). Contrasting learner’s performance to meaningfully-related others (e.g., teammates) increases intrinsic motivation. (4) Collaborative mechanisms are the motivational cornerstone of successful multi-user games explaining persistence in gaming (Herodotou, Kambouri, & Winters, 2014). Course participation can be enhanced by performance responsibility towards peers in team coursework. (5) Well-designed feedback through timed triggers and unexpected rewards can reinforce learners’ participation (Fogg, 2009). Further recommendations and components for a MOOC motivational framework can be developed by considering gamification elements from the user experience and interface design (Kalogeraki, 2016).

4. OpenQuest Learning Path

OpenQuest proposes the creation of personalized learning paths through a series of processes relying on users’ profiles and learning analytics (figure 1). More specific, the initial screening of users’ profile including their expectations, skills, motivation and preferences will determine the best suited learning activity (entry level quest). Each level features alternative quests based on different learning approaches (Laurillard, 2002) that map to learners’ interaction preferences (Bartle, 1996). Based on their performance, OpenQuest will propose the completion of additional quests in the same level or the optimal quest in the next level. Levels increase in complexity and difficulty corresponding to the course’s progress towards the achievement of the set learning objectives matching user skills with learning challenges (Csikszentmihalyi, 1990). Additional mechanisms such as adaptive leaderboards related to a given quest and overall performance provide additional motivation for learning.

11 http://mitpress.mit.edu/books/quest-learn
12 http://works.bepress.com/chris_haskell/19/
5. **Challenges**

OpenQuest adds an additional sophistication layer in MOOC design. This complexity can be addressed by incorporating existing applications into the existing MOOC virtual learning environments and platforms, e.g. in the form of plugins and APIs. Second, we propose an iterative process of design starting with a simple version of the learning environment with only basic characteristics such as two different pathways of learning. After the assessment of its learning effectiveness and usability, we will improve the design accordingly and then add more elements to ensure that the design will be appealing and engaging and enable us to determine the effectiveness of each of the proposed elements.

6. **Conclusion**

MOOC design is currently focused on cognitive and technical aspects of learning. With the aim to transform learning in a MOOC from an isolated solitary task into a social, enjoyable experience and engage massive numbers of learners, we propose a motivational approach that monitors and rewards learning and embraces learning flexibility, personalization and self-directed learning. Despite the benefits of adding game elements in learning environments, we recognize that gamification techniques might have certain limitations and points of criticism. These points include the control and power opposed to learners by the designers and the normalization of behaviour when people have to play by the rules to learn (Kopeć & Pacewicz, 2015). This might limit the autonomy and agency of learners to negotiate and creatively engaged with content.

**References**


