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► **To cite this version:**

Aicha Bakki, Lahcen Oubahssi, Chihab Cherkaoui, Sébastien George. Motivation and Engagement in MOOCs: How to Increase Learning Motivation by Adapting Pedagogical Scenarios?. EC-TEL 2015, Sep 2015, Tolède, Spain. pp.556-559, 10.1007/978-3-319-24258-3\_58 . hal-01646708

**HAL Id: hal-01646708**

**<https://hal.science/hal-01646708v1>**

Submitted on 23 Nov 2017

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# Motivation and Engagement in MOOCs: How to Increase Learning Motivation by Adapting Pedagogical Scenarios?

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**Abstract.** With the MOOC movement, education stakeholders are taking part of a pedagogical renewal. These dynamics present different advantages such as: massiveness, openness, accessibility, etc. However, it raises particular issues related to the dropout. To remedy to this issue, a promising lead resides in supporting learners' motivation and engagement. To reach this goal, innovative pedagogic strategies and / or sophisticated Instructional design, personalization or even adaptability are needed. The purpose of this paper is to examine the point of view of literature, the dropout issue and possible solutions to motivate learners.

**Keywords:** MOOC, Motivation, dropout, personalization, adaptivity, pedagogical scenario, engagement, learning model, learning design.

## 1 Introduction

MOOCs are distinguished from E-Learning platforms by different characteristics such as the massiveness, openness, accessibility, certification, the nature and programming of content, assessment modalities, etc.

All of these characteristics offer added value to education in general and to major stakeholders involved in online learning process (teachers, learners and tutors). For teachers for example, it is a question to think about the learning activity by formalizing pedagogical scenarios and implementing them through new technologies and modalities. This allow us experimenting although different educational approaches and content, but also promoting sharing and reusing content and best practices. For the learner, many benefits can be distinguished namely: flexibility, accessibility, openness, collaboration, autonomy, etc.

The aim of our work is to conceive and develop various tools that consider complementary and plural aspects of online learning, through individual and/or adaptive, collaborative, fun and massive dimensions. We consider particularly the dropout issue and we propose a synthesis of approaches to reduce the dropout rate. Therefore, the perspective of our work is to refine these approaches to provide models, tools and techniques enhancing MOOCs centric scenarios by trying to capture the issues of motivation and adaptation.

The main purpose of this communication is to not examine the contribution of MOOCs in achieving the guidelines traced at the beginning, but to discuss new issues raised, especially dropout rates. Indeed, for reference, most authors point out a success rate that not exceed 10% [1]. In a deeper analysis of this issue, several authors link this dropout to a lack of learners' motivation, or a lack of learners' engagement [2][3][4]. These dropout rates are also associated with an insufficiency of tools and methods that allow personalization and/or adaptation of learning activities, in order to motivate learners in these environments [4].

## 2 Dropout issue in MOOCs

Many researchers have examined the dropout issue in MOOCs. Clow [3] explain the dropout rate by the demotivation of learners. Anderson [2] emphasized that several participants "enroll" just to satisfy their curiosity without any intention to complete the course. Other researches are around the engagement of learners in a MOOC, we cite in particular: the work of Kizilcec et al. [4]. They explore an empirical study about the lack of engagement of learners and its causes in MOOCs; but also the lack of interaction between participants in MOOC. In the same sense, the fact participants' isolation is considered by many authors as one of the main reasons behind the weak engagement of the participants [5].

To study the dropout issue in MOOCs, we examined the work related to learner's profiles in MOOCs. In this sense, we note the work of Kizilcec et al. [4] and Hill [6]. They introduce classifications of learners that interacting with the platform. For illustration, we summarize Hill's work [6]. He proposed a classification of participants in a MOOC according to their degree of involvement in five categories: **Active, passive, Drop-ins, Observers & No-shows.**

## 3 Some possible solutions to minimize dropout

Based on a literature review, we can distinguish four different approaches to minimize the dropout rate:

**Pedagogical strategies approach.** It is a number of theoretical strategies validated by empirical studies. Among the pedagogical strategies discussed in the literature, we highlight the work of Williams [7] of adding motivational messages to students when they solve mathematics problems [8].

**Personalization and/or adptivity approach.** Several researches focus on the importance of personalization to avoid dropout. In this context, we can mention PERSUA2MOOC project [9]. This project provides a system for personalization of learning outcomes in MOOCs. PERSUA2MOOC is a project that aims to "adapt" the learning activities considering the individualities and teachers educational activities.

**Gamification approach.** Integrating games into the learning process is a solution to capture a larger audience. Indeed, the coupling of learning, virtual reality and video games allow to consider the integration of serious games in the online learning process. We can mention the work of [10][11].

**Technological approach.** Finally, we note that in addition to video, MOOCs also follow technological ascent implementing other tools web2.0, namely, social networks, wikis, forums, etc.

## 4 Discussion

First observations in MOOCs: a revolutionary platform, a new educational reform and a very high dropout rates. A learner-centered approach reveals several difficulties. In the first place, defining the learners' profiles that enroll in MOOC and their initial motivations. Second, massiveness, which constitutes a major issue when we talk about monitoring, mentoring or coaching: how to handle a huge number of learners? Especially as the MOOCs do not offer proximity between teachers and learners. We also highlight the importance of considering two fundamental aspects MOOC: massiveness and openness in the process of elaboration of pedagogical scenarios. We speak more and more about personalization and adaptivity to reduce dropout rates. Moreover, many researches have been specified in this sense. Research works in TEL, in this context, have allowed the development of different approaches and methods; that have been recovered under the MOOCs. We have specified, the project PERSUA2MOOC [9] which presents a personalization in MOOC according to Learners' profiles.

Our work focuses on supporting learners' motivation through instructional scenario building, by implementing tools and models specific to the field of TEL but also cognitive science and educational sciences. Indeed, the elaboration of our work spread over several layers. The principal layer includes different TEL platforms and tools. It integrates also different works specified in: instructional scenario building, learners' profiles and different motivation theories.

However, we must consider the different types of MOOCs. We distinguish two principal types: xMOOCs and cMOOCs, each having their own technological and pedagogical characteristics. They represent two pedagogical models that consider the video as primary course support, but disjoining in instructional scenario building models that they offer. So many other types are emerging nowadays, to prevent some dysfunctions in MOOCs, but the purposes of this paper will be limited to xMOOCs and cMOOCs. xMOOC is most of the time comprising traditional approaches of teaching and learning, it places the teacher as the main leader in the pedagogical scenario process, whereas cMOOC is more collaborative. It integrates the learner in a dynamic multi-actors process of instructional scenario building. According to this, we believe that cMOOCs are adapted to our research vision and approach.

Our approach consists to study instructional scenario building process, in cMOOCs, according to three points of view: massiveness, openness and motivation. Our research problematic can be summarized in three questions:

Which pedagogical context model to comply with learning rhythm in a massive environment? Our objective is to be able to manage and adapt the pedagogical activities in MOOCs in order to create a favorable environment for learning and personal development.

Which model or approach of the motivational theory should be used? Our goal is to identify and adapt the various existing motivation approaches, models and theories to reduce dropout rates.

Which model to adopt to organize and sequence teaching activities? Our goal is to manage and adapt pedagogical scenario in MOOCs in order to respect the aspects of opening (a specificity of MOOCs).

## 5 Conclusion

Following the various issues presented, we posed a first draft of the current problems related to the issue of dropout in MOOCs. The synthesis of the literature highlights our views on the approach of dropout along three dimensions: possible causes of dropout, research related to the types of participants and solutions to minimize the dropout rate. All points are complementary. The objective of our work is to propose an approach, models, methods and techniques to users of MOOCs, to take into account motivation concept in the design and / or adaptation of their pedagogical scenarios.

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