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Review

# Students' and instructors' use of massive open online courses (MOOCs): Motivations and challenges

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ABSTRACT

Massive open online courses (MOOCs) are among the latest e-learning initiative to attain widespread popularity among many universities. In this paper, a review of the current published literature focusing on the use of MOOCs by instructors or students was conducted. Our primary goal in doing this is to summarize the accumulated state of knowledge concerning the main motivations and challenges of using MOOCs, as well as to identify issues that have yet to be fully addressed or resolved. Our findings suggest four reasons why students sign up for MOOCs: the desire to learn about a new topic or to extend current knowledge, they were curious about MOOCs, for personal challenge, and the desire to collect as many completion certificates as possible. Up to 90% drop out due to reasons including a lack of incentive, failure to understand the content material and having no one to turn to for help, and having other priorities to fulfill. Findings suggest three main reasons why instructors wish to teach MOOCs: being motivated by a sense of intrigue, the desire to gain some personal (egoistic) rewards, or a sense of altruism. Four key challenges of teaching MOOCs are also surfaced: difficulty in evaluating students' work, having a sense of speaking into a vacuum due to the absence of student immediate feedback, being burdened by the heavy demands of time and money, and encountering a lack of student participation in online forums. We conclude by discussing two issues that have yet to be fully resolved – the quality of MOOC education, and the assessment of student work.



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## 1. Introduction

Throughout history, educators and researchers have always been intrigued with the potential of technology to help transform education and improve student learning (Hew & Brush, 2007). One such technology is the use of the Internet to deliver courses; typically known as e-learning. Over the past few years, the practices of e-learning have undergone a number of initiatives, particularly with regard to the openness of the learning environment (Kikkas, Laanpere, & Põldoja, 2011). One specific initiative that is fast increasing in popularity with educational researchers, instructors, and learners is the massive open online course (MOOC). The MOOC initiative may be situated within the larger framework of open educational resources which is typically defined as digitized materials offered freely and openly for educators, students and self-learners to use and reuse for teaching, learning and research" (OECD, 2007, p. 30).

The term MOOC was originally used by George Siemens and Stephen Downes in 2008, and since then has gained popularity in the USA especially when Sebastian Thrun, a Stanford professor offered an artificial intelligence course for free (Hu, 2013). Basically, any individual with an Internet connection can join a MOOC, to access the available resources, interact with other students, reflect and share what they have learned with others (Kop, 2011; Koutropoulos et al., 2012). Enrollment sizes of MOOCs tend to be high, generally over 500 participants (Koutropoulos et al., 2012). MOOCs are generally offered by universities in partnership with providers such as Coursera, and Udacity. Currently, one of the fastest growing MOOC providers is Coursera which has more than 30 university partners including Princeton, Brown, Columbia, Duke, Stanford, and Johns Hopkins, and has registered 2.8 million students and sees 1.4 million course enrollments every month (Cusumano, 2013; Woo, 2013).

Advocates of the MOOC initiative believe that it can offer educational benefits to higher education institutes, professors, and students. For example, some believe that MOOCs represent the ultimate democratization of education, by making education more accessible to as many people as possible (Jacobs, 2013). In most cases participants sign up for MOOCs free of charge and in some cases for a small or minimal fee to obtain a completion certificate. Others believe that MOOCs can increase an institution's prestige, or as a tool for universities to market themselves to potential students, faculty, and donors, (Belanger & Thornton, 2013; Rice, 2013), as well as allowing professors to experiment with the pedagogy of teaching online courses to large number of students. Skeptics, on the other hand, voice concerns that MOOCs will offer a watered-down education, harm less prestigious education institutes, and increase the risk of further state school budget cuts (Jacobs, 2013).

## 2. Purpose of study

Notwithstanding the debate between the advocates and skeptics of MOOCs, current popular discourse in mainstream media has created a bubble of hype and a desire to embrace MOOCs (Haggard, 2013). In this context, there is a need for a thematic analysis of related studies to gain a better understanding of MOOCs in higher education. The current review follows Creswell's (1994) guidelines which stated that the purpose of a review is to summarize the current state of knowledge concerning a certain topic of interest and highlight issues that have yet to be fully resolved.

Specifically, the focus of this study is on the motivations and challenges related to instructors' or students' use of MOOCs. These include student motives for signing up MOOC, student attitudes toward MOOC, student challenges of learning in a MOOC, instructor motivations for offering MOOCs, as well as their methods used to engage students, and the various challenges encountered in teaching a MOOC. This article also identifies important issues that have yet to be fully addressed which can suggest directions for further work.

## 3. Review of literature on the use of MOOCs

### 3.1. Sources of data

In this section, we summarize previous literature regarding the use or experience of MOOCs by academic leaders, instructors or students. To do this, we first searched for the relevant literature. The literature search was conducted in two stages. In the first stage, we searched for empirical-based articles in electronic databases using the keyword *Massive Open Online Course* or *MOOC*, and open-ended search period. In the second phase, snowballing searches on the papers cited in some of the articles were carried out. The electronic databases used for the literature search included: *Academic Search Premier*, *ERIC*, and *Education Research Complete*. *Academic Search Premier* offers indexing and abstracting for more than 8500 journals. It is considered one of the most prominent databases in academic institutions (Blessinger & Olle, 2004). The *ERIC* database contains more than 1.3 million records and links to more than 323,000 full-text documents, while *Education Research Complete*