Chapter 23

A Multi-Criteria Decision Making Approach for Evaluation of MOOCs Platforms

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ABSTRACT

Technology and globalization have increased accessibility to higher education. In recent years, the concept of online or distance learning has expanded to a growing number of Massive Online Open Courses (MOOCs), i.e. enrolling in free higher education courses open for any Internet user. MOOCs are recent trends in distance learning promoted by several prestigious universities. This Chapter describes what MOOC is with review of the history, its characteristics, advantages, and different platforms for developing of MOOCs. The authors also discuss the multi-criteria nature of MOOCs and identify the parameters important for selecting a MOOC platform. It is hoped that MOOC will enhance accessibility, student engagement, and experiences for lifelong learning which will empower and inspire educators around the world and promote success in learning.

1. INTRODUCTION

In the new century, education has been delivered electronically to accommodate lifelong learning (Wang, Russo, & Dennett, 2014). On line learning takes place among learners of all ages in both formal and informal contexts (Wang & Kania-Gosche, 2011). Online education at the college level has been expanding rapidly over the last decade with students participating in single courses or even earning entire degrees without setting foot in a brick-and-mortar institution. Over the past few years, observers of higher education have speculated about dramatic changes that must occur to accommodate more learners at lower costs and to facilitate a shift away from the accumulation of knowledge to the acquisition of a variety of cognitive and non-cognitive skills. All scenarios feature a major role for technology and online learning. This technology allows to

flip the classroom. Students are not limited to learning from teacher lecture, but benefits from high-quality, multi-media learning tools readily available on-line.

A Massive Open Online Course (MOOC) is an online course aimed at unlimited participation and open access via the web. MOOC is defined as an online course with the option of free and open registration, a publicly-shared curriculum, and open-ended outcomes (McAuley, Stewart, Siemens, & Cormier (2010). This allows students to obtain a level of education. Hundreds of thousands of motivated students around the world who lack access to elite universities have been embracing them as a path towards sophisticated skills and high-paying jobs, without paying tuition or collecting a college degree (Lewin, 2012). In addition to traditional course materials (videos, reading materials and problem sets), MOOCs provide interactive user forums that help build a community for learners. The learners have the opportunity to engage with others throughout the world with some organizing sub-groups specific to their learning goals and interests.

MOOCs have taken higher education by storm. Just three years ago, MOOCs were an idea. Today they are an industry. Millions of students from around the globe have enrolled; thousands of courses have been offered; hundreds of universities have lined up to participate (Christensen et al., 2013).

This Chapter presents a brief overview of the MOOC in the first stage and then in the second stage presents a multi-criteria decision making approach to identify the criteria important for choosing a MOOC Platform. The Chapter is divided as: Section 2 presents the background of the MOOC. Section 3 is divided into two sections. First section gives an overview of the MOOC and second section illustrates the factors to be considered before choosing a platform for designing MOOC. The factors are identified using Fuzzy Analytical Hierarchy Process (FAHP). Section

4 is devoted to discussion and last section is the concluding section.

2. BACKGROUND

The term MOOC was used for the first time in 2008 for a course offered by the Extension Division of the University of Manitoba in Canada. This non-credit course, *Connectivism and Connective Knowledge* (*CK08*) was designed by Siemens, Downes and Cormier. 25 on-campus students were enrolled and 2,200 students enrolled in the free online version. Downes classified this course as connectivist or cMOOCs, because of its design (Carr, 2012; Rodriguez, 2012).

In 2011, Thrun and Norvig from Stanford University, launched a MOOC on *The Introduction to AI* (artificial intelligence) that attracted over 160,000 enrollments, followed by two other MOOCs, also in computer sciences, from Stanford instructors Ng and Koller. Thrun went on to found *Udacity*, and Ng and Koller established *Coursera* (Carr, 2012). These are for-profit companies using their own specially developed software that enable massive numbers of registrations and a platform for the teaching. Udacity and Coursera formed partnerships with other leading universities where the universities pay a fee to offer their own MOOCs through these platforms. Udacity is now focusing more on the vocational and corporate training market.

The Massachusetts Institute of Technology (MIT) and Harvard University in March 2012 developed an open source platform for MOOCs called *edX*, which also acts as a platform for on-line registration and teaching (Kolowich, 2013a). edX has also developed partnerships with leading universities to offer MOOCs without direct charge for hosting their courses, although some may pay to become partners in edX. Other platforms for MOOCs have also been developed. Because the majority of MOOCs offered through these various platforms are based mainly on video lectures and

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