Chapter 60
Taking Advantage of MOOCs in K–12 Education: A Blended Approach

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ABSTRACT

Technological opportunities are opening new ways for educators to enhance K-12 instruction. While many educators are incorporating digital technologies into their teaching, there is evidence to show that K-12 educators have a lack of training, time, and resources to implement learner-centered digital instruction. Massive Open Online Courses (MOOCS) have gained a reputation for providing online learning in higher education and are now extending to K-12. The unique digital advantages as well as the rising number of students enrolled in schools has led to discussions about the potential of MOOCS for students in K-12 (ages 4-19 years) education. This chapter provides a review of the literature of early pioneering work of MOOCs in K-12 within North America. Early MOOC classes are explicated and positives and challenges discussed. It appears from the review that there is a place for MOOCs to be embedded into a blended K-12 environment to extend and enhance existing curricula.

INTRODUCTION

Learner-centered instructional environments facilitate the learning process and improve overall learning outcomes (Blumberg, 2008). However, researchers have found that instructors find difficulties designing courses based on learner-centered principles due to physical boundaries and time constraints (Brush, & Saye, 2000). With the emergence of Massive Open Online Courses (MOOCs), researchers (viz., Li, Zhang, Bonk, & Guo, 2015) posit that blending MOOCs into traditional instruction can support those learner-centered principles. Advocates, such as Thurne (2003), postulate that blended learning is a logical and natural evolution to a pedagogical framework. Thurne describes it as an elegant solution

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to the challenges of tailoring instruction to meet the needs of individuals. It provides an opportunity to take advantage of both the technological advances provided by online learning and participation in traditional learning (Suprabha, & Subramonian, 2015). This chapter articulates the use of MOOCs in a K-12 blended learning environment in North America.

Massive Open Online Courses (MOOCs)

A MOOC is an online learning platform that delivers free education courses without enrollment restrictions. MOOCs have typically been designed for higher education courses. The rising number of students enrolled in K-12 education has led to discussions about the potential of MOOCs (Dermirci, 2014; Norris & Soloway 2012). The first MOOC was offered by the University of Manitoba, Canada in 2008 and had over 2000 students participate (Adair, Alman, Budzick, Grisham, Mancini, & Thackaberry, 2014; Dermirci, 2014; Liyanagunawardena, Adams, & Williams, 2013).

The nature of these courses contrasts with typical online courses because any person who wants to take the course can sign-up without any restrictions or having to be a registered student at a university. MOOCs originated from the philosophy of a few professors who felt knowledge should be free and accessible to anyone who wanted to learn (Bali, 2014; Dermirci, 2014; Johnston, 2013; Saadatmand, & Kumpulainen, 2014). Traditional higher education institutions may restrict the type of learner accepted based on economics, demographics, geography, prerequisites, or attendance limits (Liyanagunawardena et al., 2013; Saadatmand, & Kumpulainen, 2014). The companies and organizations that develop MOOCs break these barriers by providing the general public with free and equal access to high quality education (Holotescu, Grosseck, Cretu, Naaji, 2014; Liyanagunawardena et al., 2013).

Some diversity exists amongst pedagogical styles and credit options that developers of MOOCs offer (Bali, 2014; Pannoni, 2014). There are two distinct types, xMOOCs and cMOOCs. xMOOCs are a type developed by Coursera and edX that use a more traditional style of teaching with lectures, videos, and quizzes (Siemens, 2012). cMOOCs are centered on connectivity through technology platforms, such as digital social media tools, that allow students to communicate and share ideas (Adair et al., 2014; Dermirci, 2014; Ferdig, 2014; Horn, 2014; Liyanagunawardena et al., 2013). MOOCs started as a non-profit initiative by a few top universities but now for-profit companies like Coursera are becoming major developers. Even though the courses are free, most providers or developers of MOOCs offer options for college credit or a verified certificate for a small fee (Liyanagunawardena et al., 2013). The non-profit organization started by Harvard and MIT, called edX, offers the option to earn a verified certificate for a low fee or audit the course for free. Audited courses are still open to the public and free to anyone who wants to learn (Locke, 2013). Several states want to force universities to accept MOOCs as valid college credit in order to expedite baccalaureate degrees (Adair et al., 2014).

So how have discussions about MOOCs started to take precedence in K-12 education in the United States? The style of learning seen in today's students, known as the Net Generation, has changed and therefore educators are seeing the need to change their pedagogy to match those differences. The traditional K-12 classroom is outdated and is considered uninspiring or irrelevant by most students (Prensky, 2001). Today's students grew up in what we refer to as the Digital Age and have different expectations about learning. In addition, employers are seeking employees with the skill set necessary to thrive in the Digital Age. Many K-12 schools and colleges are failing to meet today's requirements because of inadequate resources and lack of teacher preparedness (Conley, 2010).