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Academic Libraries in the Age of MOOCs

Introduction

The acronym “MOOC” (Massive Open Online Course) is the latest buzzword in higher education and has generated extensive discussions in both professional and popular media. *The New York Times* (Pappano, 2012) called 2012 “The Year of the MOOC.” As of the writing of this article, a quick search in the *Chronicle of Higher Education* yielded over two hundred results, most of which were published within the last year. Skeptics argued that online education might not be the answer due to high attrition rates and the general lack of skills or motivation in many struggling college students (The New York Times, 2013). In the meanwhile, MOOC providers continue to forge ahead, acquiring new university partners, adding course offerings in a growing range of disciplines, expanding to international markets, and devising interesting revenue models.

As a librarian, I had been following the buzz with mild interest until early this year, when I visited, out of curiosity, the website of Coursera, one of the main MOOC providers. Since then, I have successfully completed two Coursera MOOCs (as in, meeting all the deadlines, doing all the homework, and getting a good enough grade to be awarded the “Certificate of Completion”), and signed up for several others. The experience of being a student sparked my fascination with this “disruptive innovation” (Christensen, n.d.) and inspired my reflection on the dynamics between academic libraries and MOOCs.

From a strictly “access” point of view, modern academic libraries and MOOCs seem to stand on opposite sides. After all, MOOCs aspire to offer education and related study materials for free to anyone in the world. Libraries, however, are legally bound by license agreements with vendors to ensure that only eligible users (faculty, staff, registered students, and sometimes

alumni or public patrons within the library building) can access the proprietary electronic journals and online databases that cost millions of dollars a year. Is it realistic to expect librarians to support MOOC students a la the traditional “reference and instruction” model? If MOOCs spelled the end of most traditional colleges and universities (except for the elite ones) as some predicted (Harden, 2013), would libraries be obsolete as a result? There is little discussion in the library literature on the relationship between MOOCs and academic libraries. However, there is growing interest, evidenced by the well-attended OCLC (2013) “MOOCs and libraries” conference, which was subsequently covered in *The Chronicle of Higher Education Blogs* (Howard, 2013).

What does the emergence of MOOCs mean to academic libraries? If MOOCs are going to transform higher education, it will undoubtedly have a significant impact on the way libraries work and the role they play in the future of learning. This article will report on the current developments of MOOCs; discuss their unique characteristics and benefits; and explore the challenges and opportunities they present to academic libraries.

MOOCs: A Quick Introduction

It is widely believed that the term “MOOC” came out of a Skype chat between two Canadian educators, Dave Cormier and George Siemens (Cormier, 2008). According to the continuously updated chronology in “What You Need to Know About MOOCs” (The Chronicle of Higher Education, n.d.), while some universities or even research institutions offer MOOCs on their own platforms, currently the leading providers are edX, Coursera, and Udacity, followed by Khan Academy and Udemy.

Innovation often originates in the technology sector before moving into the mass market. Just like iTunes for the music industry and Wikipedia for the information industry, MOOCs are the disruptive technology that has taken higher education by storm. Compared with courses on other types of online education platforms such as iTunes U and MIT OpenCourseWare, MOOCs have a few clear advantages.

Designed for Online Learning

A MOOC is not the online version of a face-to-face (F2F) class. It's not a collection of "recorded classroom lectures" and lecture notes. It is a "born digital" class, even if it's adapted from an existing F2F class. Video lectures are the core of MOOCs. MOOC providers leverage technologies to create a rich learning environment by incorporating at least one and often most of the following elements: professor speaking directly to the camera while accompanied by PowerPoint slides, notes, or animated illustrations on digital whiteboards; in-video quizzes; additional video clips that are not part of the professor talk; and video interviews of guest speakers.

Video quality and design vary greatly from institution to institution. Due to the shorter attention span of a typical online user (Weatherhead, 2012), most videos are no more than 20 minutes long. The Udacity videos are especially impressive, not only for their consistent and polished look, but also their user-friendliness. Udacity videos are finely segmented into bite-size chunks (e.g., a few minutes per segment) for easy viewing. The transition between segments is seamless; if you stop watching anywhere in a video, you can "resume" the class from that exact spot, regardless of the device you use the next time.

In addition to video lectures, MOOCs strive to compensate for the lack of synchronous interaction by maximizing the usage of the asynchronous discussion forums (e.g., forum participation is required in some courses); encouraging the forming of virtual study groups based on language, geography, or interest; and even providing links to location-based “meetups”, where students can socialize or study together in real life. Some professors offer “online office hours” using either the MOOC platform or third-party tools like Google Hangout to answer questions voted up in the discussion forums, sent in via Twitter, or raised by students that participate in the real-time video chat. Computer-graded quizzes are the main assessment method, while peer reviews, where students anonymously grade the randomly chosen written works by several other students, also seem to be quite popular.

Massive, Free, and Scalable

True to its name, a MOOC is freely available to anyone with Internet access. A typical MOOC has tens of thousands of students. Since its inception in April 2012, Coursera has partnered with 62 elite institutions and “registered 2.8 million students” (Empson, 2013). While Udacity and edX still focus mostly on STEM (science, technology, engineering and math), Coursera offers over three hundred courses (mostly in English, but some in other languages such as French and German), in a wide range of subjects from humanities and social sciences to science and technology.

What these staggering numbers really mean is that MOOCs aim to democratize education and learning the same way that Wikipedia and blogs democratized information creation and dissemination. MOOCs draw students not only from all over the world, but also all walks of life, from high-achieving high school students ready for more and working professionals wanting to

pick up new skills, to career-changers desiring to explore a different path and retirees with an abundance of curiosity. MOOCs are never full, even those taught by the most popular instructors. Unless one wants a “verified certificate” (e.g., those on Coursera’s “Signature Track”), one can “un-enroll” anytime for whatever reason without any administrative hassle or financial consequences. Course load is entirely up to the individual. The degree of freedom offered to learners is unprecedented.

MOOCs are currently offered on a course-by-course basis. However, with the high demand for certificates and credits, the lineup could, in the foreseeable future, grow from individual courses into complete course tracks and eventually full degrees. It is already possible to earn recognized and transferrable credits for MOOCs. San Jose State University (2013) is collaborating with Udacity to offer several online courses for credit. American Council on Education recently completed an extensive evaluation of five courses offered through Coursera and recommended all of them for college credit, although universities can decide on their own if they are willing to recognize the credit (Kolowich, 2013a).

What’s the future for MOOCs? Some predicted that “the need for customization will drive us toward just-in-time mini-courses” (Horn and Christensen, 2013). If MOOCs continue to gain legitimacy, it’s possible that in the future students can create their “own college degree by taking the best online courses from the best professors from around the world... paying only the nominal fee for the certificates of completion” (Friedman, 2013a). Employers will be able to screen candidates by the unique combination of knowledge and skills they possess, instead of a generic degree. Andrew McAfee (2013), a research scientist at the MIT Sloan School of Management, even argued that employers should stop requiring a college degree, which has become too expensive and doesn’t really convey a person’s core competencies. Coursera

launched its Career Services in December 2012 to match top-performing students with employers (mostly technology firms at this point) and has seen success (Jones-Bey, 2012). If employers realize that MOOC students are just as good, if not better, than “regular” university graduates and start to fully embrace the self-designed competency-based “degrees”, how will that change student perception of education and their ultimate choice on *where* and *how* to get it? The MOOC movement, when scaled up, has the potential to create a borderless “global campus” with a multitude of distributed yet connected learning communities that anyone (with Internet access) can be part of.

Benefits of MOOCs for Universities

Philosophical Benefits

Why do colleges and universities want to get involved in MOOCs? On a philosophical and altruistic level, MOOCs turn higher education into a public good on a global scale. The desire to share one’s knowledge is innate in many educators. What’s more exciting than teaching tens of thousands of students all around the world? What’s more gratifying than being able to transform the lives of individuals that may not have been able to get education otherwise? What’s more illuminating than learning about diverse perspectives from these same students? MOOCs provide the invaluable opportunity to connect with global learners without conventional constraints such as time, money, and geography.

Practical Benefits

The practical benefits, however, are probably the main drivers for the rush. MOOCs create the perfect stage to “experiment with pedagogical methods on a vast scale” (Selingo, 2013). There

are rich data to be mined and interesting studies to be done on a broad array of human behaviors such as motivation, online interaction, team collaboration, and learning habits. Brand recognition is important in this hyper competitive age. For now, MOOCs are like movie trailers for universities and professors are the stars. In the near future, MOOCs could become featured films. Paradoxically, instead of replacing colleges and universities, MOOCs may actually increase the enrollment at institutions that offer them. A MOOC experience can influence a potential student's decision on the university or program they will pick for a traditional degree. Professors can reach rock star status if their classes are well loved (Friedman, 2013b). Great instructors will get high enrollment, high student engagement, and even a large celebrity-like following. Many MOOC instructors listed their own published or soon-to-be published books as optional reading materials. It won't be surprising if MOOCs increase the sales of these books. Peer pressure is certainly another factor. If Harvard, MIT, and Stanford are getting constant media attention because of MOOCs, will the other well-respected institutions fear being left behind if they don't enter this young market and establish their positions early on?

Despite the marketing value, there are some concerns about brand dilution. Will instructors "water down" MOOCs to accommodate the varying degrees of preparedness amongst students? Not necessarily. Many MOOCs on Coursera estimate 4-6 hours of weekly time commitment, but some may require up to 15 hours. In fact, sometimes an online class ended up being "significantly more rigorous and demanding than the on-campus version" because the instructor responded to the challenge of "captivating a vast, fickle audience" by fine-tuning his teaching techniques (Kolowich, 2013b). Ultimately, it depends on the individual student and his or her level of engagement with the course materials.

In a “business” sense, MOOCs provide the opportunity for universities to tap the enormous global market of eager learners. Enthusiasm is high within the US, but the majority of the MOOC students actually come from outside the US (Kolowich, 2012a). “Freemium”, such as Coursera’s Signature Track, is a viable revenue model for MOOCs, where courses are offered for free, while verified certificates or credits (and in the future, maybe even degrees) are only available at a “premium” with rigorous identity verification and for a reasonable amount of money.

Change Agent

Perhaps the most important contribution the MOOC movement has made so far is driving change in higher education. Even though online education has existed for years, it had always been somewhat on the fringe as an “extension” or “alternative.” However, with MOOCs shaking things up, colleges and universities are now having serious conversations about online learning and implementing creative ways to establish a foothold in this “new” frontier. A consortium of ten top-tier universities is partnering with the technology firm 2U to offer “fully online, credit-bearing undergraduate courses” that “mimic a seminar-like environment where students can look their classmates and instructors in the face and engage with them directly” (Kolowich, 2012b). University of Wisconsin System (2012) plans to offer, in the Fall term of 2013, “competency-based, self-paced” Flexible Option degree programs that allow students to demonstrate knowledge acquired from multiple channels, including on-the-job training and MOOCs. These are just a few examples amongst the many innovative endeavors that are partly if not predominantly inspired by the meteoric rise of MOOCs.

Will MOOCs completely replace traditional universities? Not likely. MOOCs are excellent in “content delivery” but lacking in “interaction/mentoring and assessment.” Due to the “massive” nature, it’s very difficult to replicate in MOOCs the kind of dynamic back-and-forth discussions that happen naturally in a physical classroom. Networking with instructors or fellow students will demand much more assertiveness from individuals and can be overwhelming or ineffective. With the computer’s (currently) limited ability to do extensive text analysis, assessment is mostly reduced to multiple choice quizzes and peer assessments.

MOOCs are not a panacea, but rather, another mode of learning that is best when blended with other models. For example, San Jose State University reported improved test scores in a course taught with the “flipped classroom” model, where edX video lectures were watched at home while class time was devoted to discussion and practice (Chronicle of Higher Education Blogs, 2012). Despite the current challenges, MOOC providers and their university partners are in the ideal position to collect massive data and run sophisticated analytics that should shed some light on how students learn. As a result, best practices will emerge so educators can take full advantage of MOOCs despite their limitations.

In the Land of MOOCs, What Role Do Academic Libraries Play?

The rise of MOOCs creates unique challenges and opportunities for academic libraries. In her call-to-action article “Using Information Expertise to Enhance Massive Open Online Courses”, Katy Mahraj (2012) listed the many ways that librarians can get involved in MOOCs, such as collecting open educational resources, helping with the organization and management of information, and teaching information literacy skills.

These are exactly the things that the MOOC pioneering librarians (or “MOOC librarians”) are doing. The mid-March OCLC conference on MOOCs and libraries attracted 125 in-person and over 400 online attendees (Proffitt, 2013a). The first of its kind, the conference featured speakers from institutions that offer MOOCs and provided the most comprehensive look at the current landscape of libraries, both academic and public, in the context of MOOCs.

Per the OCLC (2013) conference speakers, currently, library participation in MOOCs fall into the following three categories: 1) copyright clearance and locating alternatives such as Creative Commons materials and other free sources; 2) course production; and 3) development of policies and best practices. Other possible, but less well-defined areas include archiving class materials, curating user-generated content such as forum discussions and student projects, providing leadership (rather than just “partnership”), and teaching information literacy to MOOC students.

Copyright clearance, as summarized by Kevin Smith (OCLCResearch, 2013a) from Duke University, includes seeking permission, licensing negotiation, and fair use determination. It is probably the most important role for most MOOC librarians, costing “380 hours on average” according to Merrilee Proffitt, the conference organizer (OCLCResearch, 2013b). Some libraries, such as University of Pennsylvania Libraries and Duke University Libraries, are very much integrated in course production, while others such as University of California Berkeley Library, are involved in multi-institutional efforts to develop best practices for supporting MOOCs in terms of content accessibility and research skills (OCLCResearch, 2013c).

The conference ended with an audience brainstorming session that culminated in nine categories of recommendations for librarians that are interested in MOOCs (Proffitt, 2013b). For more information on the challenges MOOC librarians have faced and corresponding strategies

they have employed, check out the archived videos of the conference (OCLCResearch, 2013d) and blog summaries on *HangingTogether* (Proffitt, 2013c).

The iTunization of Information

The “iTunization of information” discussed here is speculative, but likely to emerge as the publishing industry becomes more fragmented. MOOCs represent a huge untapped market for publishers. Since the majority of MOOC students may not be affiliated with an academic library, serious research that involves sources outside of the course is difficult to accomplish. Publishers can reach out to these MOOC students by forming a strategic alliance with MOOC providers and even instructors so that information, such as reference books, articles, reports, or datasets, can be sold or rented a la carte, just like a song or a movie in the iTunes Music Store. Instructors can enrich course content by recommending readings that can be purchased or rented, either with a credit card or an online payment account such as PayPal. Even if an article is priced at \$1.99 per view, 10,000 students will still create substantial revenue, especially for niche publishers. This may not happen, however, if publishers cannot figure out how to prevent students from sharing articles with each other, just like what consumers did, and still do, with digital music and ebooks.

The “publisher to consumer” delivery can be a double-edged sword for academic libraries. On the one hand, it certainly alleviates the pressure on libraries, especially those affiliated with institutions that offer MOOCs, to provide access to MOOC students. On the other hand, traditional students that are also taking MOOCs on the side may get used to the “information retail” model and expect the library to be the purchasing agent when they need individual reports or datasets for their on-campus classes. Demand driven acquisition is a wonderful thing, but cannot function on a “massive” scale due to budget constraints.

The tension between the open nature of MOOCs and the proprietary nature of many library resources poses a somewhat unnerving question: do students in the future still *need* libraries? Will the MOOC platform become one of the ultimate content delivery media that eliminate the “information broker” role of academic libraries? If publishers are successful in selling directly to MOOC students, and if MOOCs continue to be developed by universities and recognized by employers, will academic libraries become an exclusive club catering to the small group of students that are still paying big money for the on-campus experience? How will that change the library mission, budgeting, and staffing?

Academic librarians can leverage this potential challenge to illustrate the importance of open access. Libraries have been promoting open access for years, but the traditional scholarship standards in the promotion and tenure process make it difficult for faculty to really value the concept. Perhaps when professors realize that students cannot afford or are not willing to pay for articles, they might become advocates for publishing in open access journals. If star performers in MOOCs start choosing articles that can be obtained for free by anyone, will they help create an open access culture? In the same vein, retaining copyright ownership when getting published becomes all the more important if one plans to use these materials for MOOCs.

Open access is not the only solution. MOOC librarians have succeeded in obtaining permission, such as contacting publishers with a marketing angle (Fusch, 2013). However, it's also possible that in the near future, libraries will collaborate with other stakeholders (instructors, MOOC providers, and publishers) to create an access model with an innovative pricing scheme that takes certain MOOC students into consideration. For example, Coursera offers Signature Track for students that want a Verified Certificate. Perhaps these students can be offered access

(for a reasonable fee) to limited relevant e-journals and databases at the library in order to accomplish more rigorous assignments.

Offer a MOOC or Mini-MOOC

Libraries and MOOCs, despite their many differences, have one thing in common: the desire to share information. Collectively, librarians create a massive body of work. Their intellectual output, whether it's in the form of a subject-based tutorial, a screencast on search strategies, or a YouTube video on plagiarism and citation, is already free and "open" to the public. In a sense, librarians have been offering elements of MOOCs in "secondary research" for decades.

Mahraj (2012) suggested that librarians expand existing content into a full-blown MOOC by "implementing a lengthier curriculum enriched by social media and problem-solving exercises, perhaps aligned to a pre-existing set of standards for information literacy." Since for-credit information literacy courses are already offered from many libraries, adapting an existing course into a MOOC is the logical next step. Instead of the usual tool-based model, librarians can focus on universal topics and emphasize on fundamental concepts (e.g., information cycle and formats), way of thinking (e.g., how to size a topic), and transferrable skills (e.g., critical thinking and information management). MOOCs don't have to reside on Coursera or Udacity. As long as a class is free and with unrestricted enrollment, it is a MOOC by definition. An example of a library MOOC is Wake Forest University Library's aptly named *ZSRx: The Cure for the Common Web*, which targets alumni, parents, and anyone interested (Wake Forest University Library, 2013).

If running a MOOC seems too daunting, librarians can instead develop competency-based "plug-and-play" information literacy modules that MOOC or other online instructors can

embed in their courses. The modules, self-paced, self-contained, reusable, and scalable, can be mini-MOOCs with videos, reading materials, and pre- and post-assessments. Librarians can “flip the classroom” by asking students to go through a module before an instruction session and use the class time for problem-solving exercises and answering specific questions.

Collaborate As a Value-added Asset

As the online education space becomes increasingly multifaceted, it’s all the more important for librarians to speak up and champion the value of libraries. Librarians should monitor curriculum development on campus carefully and participate in discussions related to online education, whether it’s about offering MOOCs, adopting the blended classroom model by leveraging existing MOOCs, or creating new online degrees.

Ideally, libraries should strive to collaborate across unit lines with other key campus departments such as information technology, instruction services, and the writing center to provide more streamlined help to faculty and students. In his article in *EDUCAUSE review*, Randall Bass (2012) advocated the “team-based design”, citing Patricia Iannuzzi’s successful approach at the University of Nevada-Las Vegas. Iannuzzi’s model puts course and student learning at the center of course design, surrounded by relevant parties such as the instructor(s), librarians, tutors, instruction designers, and technology staff. Duke University is the poster child for this kind of successful integration. Duke’s Center for Instructional Technology, the central support unit for its MOOCs, is actually part of the library system. Librarians are consultants and advisers that provide help in all aspects of course production, such as interpreting copyright laws, gathering appropriate materials (e.g., articles, images, videos) to make sure they are “transferrable to Coursera’s massive audiences”, and guiding professors in implementing the

“flipped classroom” method for their on-campus classes (Tuchler, 2013). Even though the Duke model is not common at this point, it is something to emulate. Libraries that become an essential part of the core activity (aka, instruction) of their institutions will have a higher chance of staying relevant in the eyes of the teaching faculty and administrators, especially in lean times.

Even though MOOCs are supposed to be self-contained, additional materials can greatly enhance student deliverables, but many students may not know the free resources around them. For example, in one of the class readings in a business strategy MOOC, proprietary (and highly expensive) databases such as *Hoover's*, *LexisNexis*, and *Investext* were mentioned as key tools to gather strategic intelligence (Lenox, 2013). For situations like this, if librarians are familiar with the course content, they can ask instructors to remind students (at least those in the US) that such value-added information is sometimes available for free at local academic or public libraries.

If academic librarians are so inclined, they can even be “embedded librarians” by interacting “directly with participants in a facilitating or coaching capacity” or collaborating “with course instructors or facilitators as a team to support participants” (Mahraj, 2012). This kind of high-level involvement can be time consuming but also fruitful as librarians will have direct access to students and gain interesting insights from the massive data available on learning behaviors.

Should Librarians take MOOCs?

The answer is yes. For librarians that are not affiliated with institutions that offer MOOCs, it is all the more important to take the initiative to gain a basic understanding of this hot topic in higher education. By simply observing how courses are organized and delivered, or better yet, by actually completing a few courses, librarians can learn from a wide range of pedagogical

approaches that could possibly be adapted for library instruction. By the same token, things that don't work are valuable cautionary tales. Subject librarians, especially those that don't have deep subject expertise or haven't been practicing in the field for years, can enroll in a relevant course to become familiar with the latest theories and disciplinary vocabulary.

Library administrators or supervisors should allow their direct reports to take MOOCs as a type of professional development. Legitimize the participation by organizing a "MOOC Group" where interested librarians can discuss their experiences and share takeaways. Encourage librarians to experiment with new pedagogical techniques in their instruction sessions and share the results with the rest of the library.

Personally, I found my MOOC experience enormously rewarding. I have used what I learned from MOOCs in my research guides and in answering student questions. I am more confident about my subject knowledge in certain areas. I believe that MOOCs have made me a better librarian.

Conclusion

Despite the exponential growth, MOOCs are still relatively new. Further research needs to be done to evaluate the efficacy of MOOCs (especially in the non-STEM areas), to explore best practices in instructional design and pedagogy, and to rethink the strategic positioning of traditional universities vis-à-vis MOOCs. Academic libraries are uniquely positioned to be a viable force in the movement by collaborating with stakeholders on all levels. Ultimately, supporting student learning is a core mission of academic libraries, whether on campus or on the Internet.

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