Library Support for Massive Open Online Courseware

A thesis submitted in partial satisfaction
of the requirements for the degree Master of
Library and Information Science

by

Claire Elizabeth Nickerson

2015
ABSTRACT OF THE THESIS

Library Support for Massive Open Online Courseware

by

Claire Elizabeth Nickerson

Master of Library and Information Science
University of California, Los Angeles, 2015
Professor Beverly P. Lynch, Chair

MOOCs—an online successor to older forms of distance education, such as correspondence courses, radio for education, and educational television—entered the higher education scene around 2011-2012 with the founding of Coursera, Udacity, and EdX. Although a literature review reveals some discussion of how libraries can support MOOC professors, there has been very little discussion of how libraries can support MOOC students. However, library support for MOOCs has become very important now that two new trends are forcing MOOC students to take their coursework more seriously: MOOCs for high school students and MOOCs for credit, both of which are partially driven by the rising cost of college tuition. Before academic libraries can provide research assistance or materials to MOOC students, they will need to address institutional, distance-based, legal, and resource barriers.
The thesis of Claire Elizabeth Nickerson is approved.

Leah Lievrouw

Jonathan Furner

Beverly P. Lynch, Chair

University of California, Los Angeles

2015
Table of Contents
Introduction ..................................................................................................................................... 1
Section One: MOOCs in Context ................................................................................................... 3
  What is a MOOC? ....................................................................................................................... 3
  The History of MOOCs ........................................................................................................... 5
Precursors to MOOCs ............................................................................................................... 12
  Correspondence Courses ....................................................................................................... 12
  Radio for Education ............................................................................................................ 15
  Educational Television ......................................................................................................... 17
Why MOOCs are not a Threat .................................................................................................. 21
Literature Review on Libraries and MOOCs ............................................................................ 22
Section Two: Why Libraries Should Support MOOCs .......................................................... 26
  MOOCs are Gaining Momentum .......................................................................................... 26
  MOOCs for Younger Students .............................................................................................. 28
  Rising Tuition Costs ............................................................................................................ 29
  MOOCs for Credit ................................................................................................................ 31
  Taking MOOCs Seriously .................................................................................................... 34
Current Access to Scholarly Resources is Limited .................................................................. 36
  MOOC Students and For-Profit Companies ........................................................................ 36
  The Potential for Research from MOOC Students .............................................................. 39
Section Three: Public Libraries versus Academic Libraries .................................................. 40
  The Arguments for and Against Public Library Support .................................................... 40
  The Arguments for and Against Academic Library Support ............................................. 43
Section Four: Obstacles to be Overcome .................................................................................. 44
  Library Values ..................................................................................................................... 45
  Barriers to Universal Access ............................................................................................... 47
    Institutional Barriers to Universal Access ......................................................................... 47
    Distance as a Barrier to Universal Access ....................................................................... 50
    Legal Barriers to Universal Access ................................................................................ 55
    Resource Barriers to Universal Access ......................................................................... 58
  A Bright Future .................................................................................................................... 60
Conclusion .................................................................................................................................... 61
Appendix A: MOOC History Timeline ..................................................................................... 63
Bibliography ............................................................................................................................. 64
Introduction

MOOCs, or Massive Open Online Courses, have existed since approximately 2008 and have been popular since approximately 2012, when two of the three current major MOOC providers (Coursera, Udacity, and EdX) were founded. However, although MOOCs have been touted as a possible replacement or supplement to traditional higher education, MOOC students do not currently have access to research resources or materials. In this thesis, I argue that academic libraries should step in to provide this support to MOOC students before for-profit companies get an opportunity to step into that market niche. I also explore in depth the obstacles to this goal and some possible solutions.

The argument is divided into four sections. The first section focuses on the background of MOOCs, explaining in more depth what they are and how they are different from regular online classes. It briefly covers the history of the MOOC, particularly the history of the three major MOOC providers, Coursera, Udacity, and EdX. The first section also spends some time covering the history of distance education before MOOCs, discussing correspondence courses, radio for education, and educational television in the context of their strengths and weaknesses compared to those of MOOCs. Finally, it explains why MOOCs are not a threat to traditional academia and covers the previous literature on library support for MOOC students.

The second section focuses on why libraries should support MOOC students. It explores the two main trends that are allowing MOOCs to continue to gain momentum, namely the trend toward developing college-preparation MOOCs for high school students and the trend toward offering college credit to students who successfully complete MOOCs. Both of these trends are driven in part by the rising cost of college tuition, and both of these trends give students a reason to take MOOCs more seriously in terms of the level of effort and scholarship they put in.
Between the impetus to take scholarship in MOOCs more seriously and recent advances in peer grading processes, it seems likely that in the next few years, MOOC students may start writing actual research papers. To do that, they will need access to scholarly resources, which unfortunately is currently severely limited. However, if there is a demand for access to scholarly resources—and there will be—that is not being met, for-profit companies will notice that market niche and begin to fill it in, perhaps in less than completely ethical ways. Therefore it is up to libraries, which have a strict code of ethics, to find a way around the obstacles and begin providing research help and resources.

However, there remains the question of which libraries should be supporting MOOC students. The third and shortest section compares and contrasts the advantages and disadvantages of support for MOOC students from public libraries versus from academic libraries and concludes that the case for support from academic libraries is stronger.

Having established both the reasons why libraries should support MOOC students and that academic libraries are the best option to provide research resources and support, we continue to the fourth section, which addresses the obstacles to academic library support for MOOCs and some ways in which they might be overcome. The fourth section begins with a second look at library values and how they promote universal access to educational resources. It then divides the obstacles to universal access into four categories: institutional, distance-related, legal, and resource-based barriers. However, after discussing each type of barrier, the fourth section also discusses the current progress toward overcoming that barrier and potential future solutions that have not yet begun to be implemented.

It should be noted that this thesis focuses primarily on MOOCs and on libraries in the United States, although there has been some literature that takes a more international
Section One: MOOCs in Context

MOOCs are a relatively new innovation, but they did not appear full-fledged on the educational technology scene in 2012. Rather, they are an outgrowth of both the distance education technologies before them—including correspondence courses, radio for education, and educational television—and of earlier online learning technologies, including learning management systems, social media sites, online courses, and especially open repositories for college course materials, such as the Massachusetts Institute of Technology’s OpenCourseWare site and Apple’s iTunes U. However, before delving into the history of the MOOC, it is necessary to define in more detail exactly what a MOOC is and is not.

What is a MOOC?

“MOOC,” as has already been mentioned, stands for “massive open online courseware.” MOOCs are online courses, usually produced by colleges or universities. These courses are open to anyone who wants to take them for free (or sometimes for a small fee, if the student wants a certificate saying they have passed the class with a certain grade). Because they are open and free, the most popular of these courses often attract thousands of students from all over the world—hence the “massive” part of the name. Most MOOCs have several parts, which may include video lectures, readings, computer-graded assignments or quizzes, discussions with other students on a forum, or peer-graded assignments. MOOCs are different from mere video lecture

---

series because students take them concurrently, not just at their own paces—all students start at the same time and have assignments due at the same time so that they can discuss the content and get help from other students. MOOCs became popular around 2012, although they existed several years earlier. There are now a number of platforms partnering with colleges and universities to produce MOOCs, but the most well-known are Coursera, EdX, and Udacity.

There are several key differences between MOOCs and traditional online courses. The latter are, of course, usually not free and are only open to students of the college or university that produces them. Out of necessity, professors of MOOCs take a much less active role than those teaching traditional online courses. It is difficult to interact personally with thousands of students, even if the professor is always available when the class is being offered, and since MOOCs are designed and recorded ahead of time—unlike the live video lectures offered through some more traditional online courses—they can be offered over and over with identical content. In some ways this reusability is a good thing: after the initial investment of time and money to create the class, the upkeep costs are low, and students who are unable to take a course when it is first offered can rest secure in the knowledge that it will probably be offered again without worrying that the professor will be replaced with one less able or that the content will be different. On the other hand, this reusability also means that students miss out on the spontaneity of real-time lectures, the ability to ask the professor questions, and updates to the content based on advances in the field or current events.

However, MOOCs do have at least two other advantages over traditional online courses. Firstly, their open enrollment policy provides students with more classmates and more diverse classmates than closed online courses. This means that students are statistically more likely to be able to connect with classmates online, as more students are likely to be on the forums at once,
providing the learning community with lots of peer support and feedback. The greater diversity of MOOCs created by open enrollment means that students more likely to encounter a diverse range of viewpoints by talking to their classmates from other geographical areas, religions, and ethnic, linguistic, and socioeconomic backgrounds.

Secondly, students have more flexibility in their workload, as they are able to choose when to watch the recorded video lectures as opposed to having to be online during live lectures. They can also choose whether or not to complete assignments without worrying about being graded, skipping those that reinforce concepts or skills they are already familiar with and putting that time toward higher-quality work on assignments that actually advance their understanding of the subject matter. This flexibility makes MOOCs a better choice for people with already busy schedules, like full-time workers and students with dependents.

The History of MOOCs

A summary of the following history of MOOCs may be found in the timeline in Appendix A. MOOCs, which are a recent innovation, draw from the ideas of online technologies before them, including learning management systems, social media sites, and online courses. However, the history of MOOCs really begins in 2002, when the Massachusetts Institute of Technology (MIT) founded its OpenCourseWare initiative. Although the OpenCourseWare site does not, strictly speaking, provide courses, it does provide all of the accoutrements thereof, including syllabi, readings, and assignments, and in some cases recorded lectures, lecture notes, examples of student work, online textbooks, and other course materials for all of the courses taught at MIT. Therefore it is possible for students outside of MIT to follow along with the

---

2 Haber, MOOCs, 34.

3 “Get Started with OCW.”
courses, although they do not receive the same support as students in an actual class.

A similar service, Apple’s iTunes U, was launched in 2004 to provide free access to educational audio and video content, not only from universities, but also from libraries and museums. iTunes U has proved popular, garnering three hundred million downloads by 2007, seven hundred million downloads by 2010, and over a billion downloads by 2013. It has also been successful abroad, with sixty percent of those downloads occurring outside the United States.⁴

However, there is a major difference between merely making course materials from a class available to outside students and actively creating new course materials for students not affiliated with the professor’s institution. The first true massive open online learning community was called “Connectivism and Connective Knowledge” and it was taught by Stephen Downes, a Canadian researcher, and George Siemens, a faculty member at Athabasca University in Canada, in 2008. However, this first community was much less structured than the MOOCs we know today. It had no official assignments and the professors were very actively involved in day-to-day activities, publishing a daily newsletter and scheduling outside speakers or students themselves to give lectures.⁵ The goal of the community was based on the principle after which it was named, connectivism, which is the idea that knowledge and learning are facilitated by being part of a network, with all members contributing equally to the pool of knowledge. While Downes and Siemens’s community was no doubt educational, it falls somewhat short of being a course in the traditional sense of the word. Unlike OpenCourseWare, “Connectivism and Connective Knowledge” did not provide many of the accoutrements of traditional courses, such

⁵ Haber, MOOCs, 37–39.
as learning objectives, assignments, or tests.

However, the term “MOOC” was coined to describe Downes and Siemens’s community by David Cormier, who helped facilitate the “Connectivism and Connective Knowledge” project. Some of the scholars who are familiar with both the early connectivist MOOCs and the current MOOCs modeled more closely after traditional college classes call the former cMOOCs and the latter xMOOCs to distinguish between the two. This paper will focus exclusively on the latter, the xMOOCs, which will be called simply “MOOCs” from this point forward.

The first major MOOC provider to emerge was Coursera, which was founded in 2011 by two computer scientists from Stanford, Daphne Koller and Andrew Ng, in collaboration with the University of Michigan, Princeton, Stanford, and the University of Pennsylvania. Coursera was founded using venture capital and originally planned to fund itself through ads aimed at large numbers of visitors (ala Google or Facebook). The first course on Coursera to garner major media attention was about artificial intelligence. It was taken by a hundred and sixty thousand students from a hundred and ninety countries. Some of this success might be due to the reputation of Coursera’s partner universities, which lent the platform both cachet and credibility. A year later, Coursera had six hundred and eighty thousand students, forty-three courses, and thirteen collaborating universities in the United States as well as several foreign universities. These collaborations with foreign universities were the beginning of a concerted attempt to offer MOOCs not just in the United States, but around the world. In 2013, Coursera began offering

6 Ibid., 39–40.
7 Lewin, “Consortium of Colleges Takes Online Education to New Level.”
8 Sean Coughlan, “UK University Joins US Online Partnership.”
9 Lewin, “Consortium of Colleges Takes Online Education to New Level.”
courses in other languages, including Chinese, French, Italian, and Spanish and was also working on translating some of its courses into Arabic, Japanese, Kazakh, Portuguese, Russian, Turkish, and Ukrainian. It also formed a partnership with the U.S. State Department and with several other educational organizations to create “learning hubs” that provide free internet access and discussion facilitators to students taking MOOCs around the world. The State Department is using the learning hubs to promote learning in priority fields, such as science, technology, and entrepreneurship using MOOCs published by Coursera and by other MOOC providers. By October of 2014, Coursera had grown even more: according to Richard Levin, Coursera’s chief executive, it had more than ten million students, offered more than eight hundred courses, and had a hundred and twelve collaborating universities.

Udacity, the second of the three major MOOC providers to arise, was also conceptualized at Stanford and initially funded by venture capital (and $200,000 of the entrepreneur’s own money). The entrepreneur who started Udacity, Sebastian Thrun, had already taught one MOOC about artificial intelligence in 2011, before he decided to found the company. His approach to teaching the class was much more hands-on than that of most current MOOCs, as he offered virtual office hours for the students and recommended a textbook for them. After this experience, Thrun felt that he was making an important impact and that he preferred teaching MOOCs to teaching in a traditional setting. He announced that he was giving up his tenure at

10 Protalinski, “Coursera Adds 29 New Universities to Bring Total to 62, Offers First Courses in Chinese, Italian, Spanish.”


12 Henn, “Stanford Takes Online Schooling To The Next Academic Level.”

Stanford to found Udacity in January of 2012 and opened registration for Udacity’s first course, “Building a Search Engine,” that same month. By March, ninety thousand students had enrolled in Udacity’s first two courses. Udacity was the first of the three major MOOC providers to monetize MOOCs, offering a certificate of completion for a small fee. Thrun also considered trying to make money by selling subscriptions to recruiters, letting them know which students had acquired useful skills and gotten high scores in his MOOCs, but this plan appears to never have been implemented. Thrun later made the controversial decision to revamp Udacity to focus less on academic pursuits and more on job training. Udacity now offers what it calls “nanodegrees,” which focus on preparing students for specific jobs in technical industries, such as web and application development, instead of free online education. These nanodegrees are not free but have, according to Thrun, increased retention rates and student engagement. It is not surprising that Udacity, as the only one of the major three MOOC providers founded by an independent entrepreneur and not by a collection of universities, has turned away from free education toward a more profitable business model.

The last of the three MOOC major providers and the only one that qualifies as a nonprofit was EdX, which is a collaboration between the Massachusetts Institute of Technology (MIT) and Harvard University that was first announced in May of 2012 via a YouTube video entitled “EdX: The Future of Online Education is Now.” The joint announcement generated a major media buzz, with news reporters questioning whether MIT and Harvard would inadvertently put

---

14 DeSantis, “Stanford Professor Gives Up Teaching Position, Hopes to Reach 500,000 Students at Online Start-Up.”

15 Lewin, “Instruction for Masses Knocks Down Campus Walls.”

16 Haber, *MOOCs*, 165.

17 Dodd, “Udacity’s Nanodegrees Link Students to Tech Jobs.”
themselves out of business (which, obviously, they did not). According to an article in Harvard’s online newspaper, each university initially invested thirty million dollars in the initiative. They also invited other universities to join the collaboration, with other early adopters including the University of California, Berkeley, and the University of Texas. The first course launched on EdX was from MIT, even before MIT decided to partner with Harvard. It was called “Circuits and Electronics,” and it attracted a hundred and fifty-five thousand students. The launch was, in other words, a rousing success. A year after the EdX initiative was first announced, it had attracted twenty-seven collaborators, including universities in Europe, Asia, and Australia, enabling the platform to offer English-language courses on international issues and cultures that were created by professors in the countries covered. Given that international scholarship, especially international scholarship from non-English-speaking countries (including articles originally written in English) is often ignored or overlooked by scholars in the United States, this inclusion of international classes is a major step forward. By June of 2013, EdX had enrolled one million students. As of 2015, EdX is continuing to attract new collaborators and is planning to expand into mobile technologies so that students can “take their coursework with them [and] access it as they go about their day.”

Especially in the early days of MOOCs, there was a great deal of optimism about their potential to revolutionize education. However, even near the beginning of the MOOC craze, in

---

18 Rodrik and Sun, “EdX.”
19 Rouse and Worland, “First Day of School.”
20 Hashmi and Shih, “EdX More Than Doubles in Size with Addition of 15 New Schools.”
21 Gibbs, “Citation Analysis,” 300.
22 Conway, “EdX Enrollment Reaches Seven Digits.”
23 Ararwal, “Building the Next Generation Mobile Learning Experience.”
2012, there was also some skepticism about their revolutionary promise. For instance, a 2012 article entitled “The False Promise of the Education Revolution” points out that although MOOCs have been touted as having the potential to provide access to higher education to students who otherwise would not have that access, those students are actually the ones who need face-to-face education the most and that championing MOOCs is a way to avoid fixing other problems with the educational system.24 This issue of access versus effectiveness for underprivileged students has continued to be a major criticism of MOOCs. A short 2013 article published in *Nature* points out that the majority of MOOC students already have a college education and that MOOCs are not actually reaching disadvantaged students.25

However, alongside this skepticism about the revolutionary potential of MOOCs is hope for the future. Providers have adapted their business models to pursue other revenue streams as well so that they can continue to offer MOOCs at low cost.26 And, as one article points out, although “MOOCs might not put thousands of colleges out of business in the next 50 years . . . they are changing how students learn, how professors teach and grade, and how higher-education leaders figure out what differentiates face-to-face instruction from online learning.” In other words, they still have the potential to make a difference in higher education, but it might not be the type of impact originally predicted.

MOOCs are still relatively new, and the future of MOOCs is unclear. However, it may be possible to make some broad predictions about the future of MOOCs by examining the provenance, successes, failures, and eventual fate of the distance education technologies that came before them.

24 Carlson and Blumenstyk, “The False Promise of the Education Revolution.”
25 Emanuel, “Online Education.”
26 Kolowich, “MOOCs May Not Be So Disruptive After All.”
Precursors to MOOCs

There are three major distance education technologies that came before MOOCs: correspondence courses, radio for education, and educational television. Correspondence courses, while not free like MOOCs, were fairly successful, first becoming popular in the middle of the nineteenth century, continuing into the middle of the twentieth century, and reaching students all over the world. In the 1920s correspondence courses began to overlap with radio for education, which was initially highly touted as a means for adult learning but unfortunately failed in that goal due to a lack of support from the federal government. However, educational broadcasts for schoolchildren continued into the 1970s. Meanwhile, educational television took off after World War II. Although it initially suffered from the same lack of governmental support as radio for education, educational television broadcasters persevered and eventually won support from the federal government in the 1960s in the form of matching grants. The history of each of these three distance education technologies is explored in more detail in the sections to follow.

Correspondence Courses

The earliest form of distance learning was the correspondence course, in which students received course materials and exercises by mail and sent the exercises back to be graded. Correspondence courses were first popularized in the UK in the 1840s by Sir Isaac Pittman, who sent instruction manuals on his new shorthand method to students through the mail.27 However, most of the early correspondence courses were designed to teach foreign languages. The first language correspondence course was initiated by Charles Touissaint and Gustav Langenscheidt in Germany in 1856. It was originally designed to teach French to German-speakers but

27 Haber, MOOCs, 20.
eventually expanded to teach other foreign languages as well.  

The concept of correspondence education was quickly picked up in the United States, where it was initially highly touted—*Harper’s Weekly* called it “well worthy general attention [sic]”—but the first attempts were not particularly successful. Shortly after Touissaint and Langenscheidt created their course, a group called The Society to Encourage Studies at Home was formed in the United States in 1873 but swiftly failed due to the inability to adapt coursework to students’ varying levels of ability. Ten years later, in Ithaca, New York, a group of instructors from various institutions of higher learning gathered together to create “Correspondence University.” Although they advertised to a wide array of potential students, including rural families, young workers, and members of the armed forces, Correspondence University swiftly failed as well.  

The first successful correspondence school in the United States actually grew out of a yearly Methodist camp meeting held in New York by Chautauqua Lake. Each summer a group of Sunday school teachers gathered there to provide instruction, and eventually, in 1879, due to the demand for continuing education during the rest of the year, the Chautauqua Correspondence School was created to teach languages. The program was formalized in 1882, when the group published an official plan of instruction, and continued until 1900.  

Meanwhile, correspondence schools were also springing up elsewhere in the country. By the late 1800s, several major universities, including Wesleyan, the University of Chicago, and the University of Wisconsin, offered degree programs by mail.  

---

28 Noffsinger, *Correspondence Schools, Lyceums, Chautauquas*, 4.  
29 Ibid., 4–7.  
30 Ibid., 7–11.  
31 Haber, *MOOCs*, 21.
courses limited solely to academic subjects: although previous correspondence schools had been used primarily to teach languages, in 1891 a Mr. Thomas J. Foster, who published a newspaper column about mining safety, decided to create a correspondence course on mining practices. Due to the demand for this course, he eventually founded the International Correspondence Schools of Scranton, Pennsylvania, which by the mid-1920s offered more than 300 professional preparation courses.32

Correspondence courses continued to gain popularity into the middle of the 20th century, and a study by the Carnegie Corporation of New York published in 1926 identified approximately three hundred of them in the United States alone.33 But the success of correspondence courses was not limited to Europe and the United States alone—they also reached students in third-world countries, including, despite the fact that the courses were in print, some illiterate students. For instance, in 1962 a group from the Ivory Coast founded the Institut Africain pour le Développement Economique et Sociale (INADES), which provided instructors and course pamphlets in French to communities in the French-speaking countries of Africa. These instructors taught local leaders to lead discussion groups based on the materials and the questions in the course pamphlets, allowing illiterate students to participate even though they could not themselves read the course materials. The leaders then mailed back the group’s responses to the questions (and any new questions they came up with) back to INADES, which sent instructors to check in with the groups at regular intervals to make sure that the leaders were effective and the courses were running smoothly.34

32 Noffsinger, Correspondence Schools, Lyceums, Chautauquas, 11–12.
33 Ibid., 15.
34 Jenkins, Materials for Learning, 5.
Correspondence courses are similar to MOOCs in that they initially stirred up a great deal of hype. In the case of MOOCs it may still be too early to judge whether this hype was justified, but in the case of correspondence courses, in the long run, it seems they lived up to their potential, reaching students all over the world, including those who otherwise might not have had access to high-quality education, or indeed any education.

Correspondence courses are different in that whereas MOOCs are usually designed by professors at institutions of higher education, correspondence courses were primarily created by independent teachers. In that respect MOOCs are superior, since it is easy to verify the credentials of the instructors. However, correspondence courses provided personalized feedback in a way that most MOOCs, with their computer-graded assignments, do not. But this personalized feedback came at a cost—a book published in 1926 estimated the median cost per correspondence course lesson in the United States at $1.66,\textsuperscript{35} which may not sound like very much money but due to inflation equates to more than twenty dollars today. That is still much less expensive than traditional higher education, but certainly more expensive than MOOCs, most of which are free.

\textbf{Radio for Education}

The beginning of radio for education overlapped significantly with the end of the popularity of correspondence courses. In the United States, the beginning of radio broadcasting for a popular audience occurred in 1920, when the radio station KDKA broadcast live reports of the presidential election. Two years later, there were almost seven hundred licensed radio stations in the country, including more than seventy college and university stations. These stations, along with other stations operated by public and civic institutions, began to broadcast

\textsuperscript{35} Noffsinger, \textit{Correspondence Schools, Lyceums, Chautauquas}, 70.
educational lectures. For instance, according to the book *Schools of the Air*, which chronicles the history of radio for education, the Chicago station WMAQ devoted fifteen percent of its airtime in 1924 and 1925 to “evening lectures from the faculty at the University of Chicago and Northwestern University on topics ranging from political science, sociology, and biology to crime prevention and the value of higher education [and to] informative and self-improvement programming, covering such diverse topics as child psychology, lawn care, and Midwestern art.”

Educational radio stations also established for-credit courses and certification courses, especially favoring content aimed at rural listeners, who did not have access to in-person education. However, educational radio stations lost listeners during the chaotic years of 1925 and 1926 due to unintelligible broadcasts caused by an increased number of stations and a lack of regulation assigning them to separate frequencies. For instance, the University of Kansas, which had founded one of the early educational stations, was forced to abandon its home-study courses after twenty-six other stations began broadcasting at the same frequency. Unfortunately, when the Federal Radio Commission began to regulate channel frequencies in 1927, although it fixed conflicting broadcasts, it also assigned educational radio stations primarily to local frequencies (as opposed to the “clear channel” frequencies that allowed some stations to broadcast for hundreds of miles) and forbade them to broadcast during evening hours, severely curtailing their ability to reach the working adults they had originally been designed for.

Therefore, although schools of the air continued to exist and to broadcast educational

---

37 Ibid., 14.
39 Bianchi, *Schools of the Air*, 16.
content for schoolchildren, they never fulfilled their potential as a vehicle for adult continuing education. Although during various periods between 1928 and 1979 six universities supported state-wide educational stations, they mostly focused on “serving the basic, but unmet, educational needs of rural and small town schools, particularly in subjects such as music, art, science, history, current events, and storytelling for young children” and never returned to widespread educational broadcasting for adults. Eventually, after the 1970s, support for schools of the air petered out as focus and funding shifted to educational television.

Radio for Education had goals similar to those of MOOCs—like MOOCs, but unlike correspondence courses, they were free. Like MOOCs, they aimed to reach people who otherwise would not have access to high-quality education, like potential students living in rural communities. In a way, radio for education is superior to MOOCs because it is more difficult to obstruct access—anyone with a radio can tune it to a station making an educational broadcast, but to access MOOC content on most platforms, it is necessary to enroll in the course, even if the course is free. Therefore there are more obstacles to access and less privacy. Radio for education also demonstrated that distance education is a complement to, not a threat to, traditional higher education, as colleges and universities used their stations to both pursue their missions providing education and to improve public relations.

**Educational Television**

As Schools of the Air were being phased out, their replacements, telecourses, were being phased in. Although television stations existed before World War II, it was not until after the war ended in 1945 that commercial televisions became popular. There was also a high demand for

---

40 Ibid., 296–7.

higher education at that time, as returning veterans were entitled to educational benefits bestowed by the G.I. Bill. Therefore colleges and universities, which were not equipped to handle the rush of incoming students, originally turned to educational television as a stopgap measure—lectures were often recorded ahead of time and then played on television for undergraduates in the classroom, sometimes with the supervision of a graduate student teaching assistant.\footnote{Zigerell, \textit{The Uses of Television in American Higher Education}, 2–3.} This scheme eventually failed, with both faculty and students expressing dissatisfaction over the videos.\footnote{Zigerell, \textit{The Uses of Television in American Higher Education}, 16–17.}

Whether the original use of educational television was advisable or ethical is debatable, but the use of educational television in the college classroom was the impetus for educational television for the general public. By 1948, there were eight colleges and universities broadcasting education television programs. However, like radio for education, educational television was negatively impacted by the onset of federal regulations. Although the Federal Communications Commission did set aside some license assignments for non-commercial stations when it began licensing television broadcasters in 1952, most of the channels allotted were ultra-high frequency (UHF), which most commercial televisions did not receive well. This reception issue could be circumvented by renting air time on other stations, but as with radio, the times available for educational programs were not ideal for working viewers, who could not watch during the day.\footnote{Ibid., 10.}

However, unlike the radio broadcasters before them, producers of instructional television persevered in producing educational content for adults. For instance, South Carolina
implemented a “statewide linkage” that used closed-circuit television (CCTV) to enable distance learners to watch lectures at public sites around the state and earn graduate degrees by also sending in correspondence exercises and exams and visiting the campus occasionally.

Pennsylvania State, which had a similar program, attracted up to twenty thousand enrollments per year in its CCTV program during the 1960s. Part of this success is probably explained by the availability of new recording technologies that allowed adult students who could not watch during the day to record educational programs and watch them later. Some courses were also offered in the early morning—for instance, New York University offered a variety of for-credit classes on CBS through its “Sunrise Semester” program, which aired at six in the morning from 1957 through 1982.

In the 1960s, the U.S. government apparently changed its mind about supporting educational television, perhaps due to the change in which political party controlled the White House. In 1962, President John F. Kennedy signed the Educational Television Facilities Act, which provided matching grants to universities and nonprofits for educational television programs, although applicants had to be eligible for an educational broadcasting license from the Federal Communications Commission. Specifically, the Educational Television Facilities Act set aside thirty-two million dollars over a period of five years and focused on ensuring a fair geographic distribution of educational television funds, with no state being eligible for more than a million dollars in total matching grants.

Shortly thereafter, the federal government also enacted the Public Broadcasting Act of

---

45 Ibid., 16.

46 Haber, MOOCs, 25.

1967, which technically provided support for both radio for education and educational television, but perhaps fell into the category of “too little too late” with regards to support for the former. The Act set aside another thirty-eight million dollars to support educational broadcasting programs over the next three years; established the Corporation for Public Broadcasting, which was designed to support educational broadcasting and to keep it free of undue federal influence in the future by providing community service grants; and established the Commission of Instructional Technology in order to study the impact of educational broadcasting.48

One problem with instructional television as a distance education method—one that has persisted into the era of the MOOC, its modern-day replacement—was that instructional television had low production values compared to other television programs.49 Unlike radio programs, which could be produced at low cost at a quality not far inferior to that of commercial programs, television made possible special effects, fancy sets, and other expensive but visually stimulating entertainment. Educational television, with its low budget and often amateur creators, could not compete with the quality of professional programs, resulting in dull televised classes consisting merely of professors lecturing in front of chalkboards. Therefore, although the availability of distance education classes increased during the era of educational television, these classes were not necessarily stimulating. Similarly, although some MOOCs have higher production values in their videos, many still struggle to depart from the “professor-with-a-chalkboard” model, meaning that students must be very committed to the idea of completing a class in order to persevere through the dullness. By contrast, students seem less willing or able to drop in-person classes should those classes prove dull, which is one of the reasons that MOOCs

48 Ibid., 83–85.

do not really pose a threat to traditional higher education.

**Why MOOCs are not a Threat**

However, one of the arguments against academic libraries supporting MOOCs has been that they are poised as a competitor to traditional higher education, with one of the major trends in MOOCs at present being the trend toward offering MOOCs for credit—a trend that will be discussed in more detail in the next section. In reality, although there has been some discussion of the possibility of MOOCs replacing traditional degrees,\(^\text{50,51}\) most scholars seem dismissive of the concept because although MOOCs can successfully deliver content, they cannot deliver the same quality of interaction, feedback, or mentoring as a traditional course.\(^\text{52,53,54}\) Like MOOCs, each previous new distance learning technology was hailed as innovative and having the potential to revolutionize higher education, but none of them really constituted a threat to traditional institutions of higher education, as evidenced by the fact that they have come and gone and yet colleges and universities continue. It is likely that MOOCs will not constitute much of a threat, either, and that they, like their predecessors, will eventually be phased out or become obsolete as newer technologies take their place.

However, MOOCs, like other distance learning technologies before them, do have the potential to be useful for students who otherwise would not have the opportunity to get or continue their higher education. Academic institutions supported correspondence courses, radio for education, and educational television for two reasons: first, because they believed in the

---

\(^{50}\) “Massive Open Online Courses - A Threat to Traditional Teaching?”

\(^{51}\) Winterhalter, “Will Free Online Courses Ever Replace a College Education?”

\(^{52}\) McNutt, “Bricks and MOOCs.”

\(^{53}\) Youngberg, “Why Online Education Won’t Replace College--Yet.”

\(^{54}\) Wu, “Academic Libraries in the Age of MOOCs,” 580.
cause of educating the public; and second, because it promoted good public relations. It is for these same reasons that academic libraries should support MOOCs. MOOCs also provide another practical benefit for the universities that create them: they constitute an opportunity to experiment with pedagogical methods, allowing professors to test new teaching methods and lesson plans on a wide audience before implementing them in the classroom.55 By supporting MOOC students as they would traditional students, libraries can help to make this experimentation more rigorous. However, there remains the question of how exactly libraries can or should be supporting MOOCs.

**Literature Review on Libraries and MOOCs**

Because of the relative newness of MOOCs, there has been little literature on how libraries can support MOOCs, and most of it has focused on MOOC creation rather than implementation. In other words, there has been more discussion of how libraries can support the professors teaching MOOCs than of how they can support MOOC students, perhaps because professors are usually affiliated with academic libraries whereas MOOC students may not be affiliated with any library. The following literature review focuses only on those articles that specifically discuss how libraries can support students.

One of the first articles to focus on how libraries and MOOCs could work together was published in 2012 by Katy Mahraj. Unlike most of the literature on MOOCs and libraries that came afterward, her article focused primarily on how librarians could directly support MOOC students, not just their professors. She argues for librarians to be embedded in the MOOC process, making posts on the class forums when students showed signs of struggling in order to “support participants as they assess their own information needs, identify useful resources, and

55 Ibid., 579.
develop skills in finding, evaluating, accessing, managing, synthesizing, and using information in an online learning environment.”\textsuperscript{56} Several later articles criticized this approach as being overly labor intensive,\textsuperscript{57,58} but these articles ignore that fact that although the number of enrolled students in MOOCs can be huge, only a small number of these students are usually active in the course forums.

The following year, in 2013, a small flood of literature on libraries and MOOCs was published. The first of these articles was published by a Forrest Wright, who is neither a librarian nor a MOOC professor but a researcher for Thomson Reuters. He suggested that, due to the obstacles in providing library services to MOOC students (which are discussed in more detail in a later section of this paper), librarians should start with simple support solutions like reaching out to MOOC professors to provide links to library research guides and open-access research tutorials, such as those published by the American Library Association (ALA) or the Multimedia Education Resource for Learning and Online Teaching (MERLOT). Wright’s ideas have the advantage of not requiring time-intensive labor and avoiding copyright issues. However, he overlooks the fact that many MOOC students may not have previous experience using library resources and therefore self-service guides that merely provide lists of resources and steps in the research process will not be nearly as effective as they would be for students at traditional universities, who often receive formal training on how to use research guides.

Gloria Creed-Dikeogu and Carolyn Clark, two scholars from Kansas, published a 2013 article entitled “Are You MOOC-ing Yet? A Review for Academic Libraries” that specified the

\textsuperscript{56} Mahraj, “Using Information Expertise to Enhance Massive Open Online Courses,” 366.

\textsuperscript{57} Wright, “What Do Librarians Need to Know About MOOCs?”

\textsuperscript{58} Creed-Dikeogu and Clark, “Are You MOOC-ing Yet?”
two main roles librarians can play in MOOCs: handling copyright issues and teaching
information literacy. Creed-Dikeogu and Clark stress that it is important for students in MOOCs
to have strong information literacy skills, especially because connectivism, the philosophy upon
which MOOCs were originally founded, is based on the premise that the ability to seek out and
filter useful information is crucial to the learning process. Moreover, they see MOOCs as an
“opportunity to increase the information literacy skills of huge numbers of students” at once.
Therefore they suggest that librarians help by modeling correct citation practices, providing
information literacy assessment tools, and creating online information literacy tutorials.59 Like
Wright, they recognize that MOOC students do need to be more self-sufficient than students in
traditional institutions of higher education; they must be self motivated and resourceful.
However, also like Wright, they do not go far enough in suggesting solutions whereby librarians
can directly assist students.

Meredith Schwartz published an article in Library Journal in 2013 describing how
libraries can support MOOCs. Schwartz suggests that professors should turn to libraries even
before MOOCs are produced for assistance navigating copyright issues and finding open-access
learning resources to include. Then, during the production phase, she suggests that libraries can
help professors create strong materials by weighing in on the recording and editing process and
providing technical support. The “biggest question mark,” she states, is whether libraries can or
should attempt to support MOOC students. Her argument for supporting MOOC students is that
especially for those taking classes in the humanities, the ability to find supplemental resources
might prove useful and that students farther from the library need more help, not less. She also
mentions that there has been research demonstrating that students who have completed

59 Ibid., 4.
traditional college courses are more successful in MOOCs because they already have the necessary academic skills. Librarians could help less experienced students close that gap. Her argument against supporting MOOC students centers around the lack of resources and time librarians have to support additional students. 60

Also in 2013, Bernd W. Becker, a scholar from San Jose State University, which boasts a robust online library school program, published an article in the *Behavioral and Social Sciences Librarian* suggesting that libraries can support MOOC students by beginning to develop a collection of recommended open-access journals and scholarly websites that can be accessed from all over the world. 61 This is a very sensible suggestion, as such a collection would be free to develop and, while potentially time consuming, could also be useful to students enrolled at the university the library supports, overcoming objections of time spent supporting MOOC students to the detriment of students enrolled at the institution. Like Wright, Creed-Dikeogu, and Clark, Becker recommends that libraries set up self-service resources specifically for MOOC students, including a page of frequently asked questions and tutorials. However, he also suggests—albeit not very enthusiastically—that libraries create a joint email account for soliciting and answering questions from MOOC students to avoid putting the brunt of the effort of supporting MOOC students on any one librarian. 62 This is also an excellent idea.

However, in addition to discussing and coming up with good ideas as to how libraries can support MOOC students, it is also necessary to discuss why libraries should support MOOC students, lest the effort required to support these additional patrons lead libraries to conclude that

---

60 Schwartz, “Massive Open Opportunity.”

61 Becker, “Connecting MOOCs and Library Services,” 137.

62 Ibid., 137–8.
minimal support, such as the self-service guides that have been suggested in many of the articles above, is sufficient.

Section Two: Why Libraries Should Support MOOCs

MOOCs began to gain public recognition as an alternative to traditional higher education and online classes around 2012 and are still gaining popularity, in part due to two new trends: first, MOOCs are being developed for high school students; and second, there has been a push by MOOC companies to offer college credit for them, which means they could become a viable alternative for earning undergraduate degrees. This larger audience means that MOOC students are becoming a more attractive target for marketers, particularly those that sell educational products. This is especially true because MOOCs do not currently provide access to many of the resources that traditional universities do, including access to library materials and research assistance. Therefore libraries—which have a code of ethics demanding that they provide accurate, unbiased, and uncensored information—should step in to provide these services before for-profit companies have a disproportionate chance to shape the next generation of high-school graduates and baccalaureate-earners.

MOOCs are Gaining Momentum

MOOCs are more popular today than ever before in terms of media coverage and public interest. Together, the Wall Street Journal, Los Angeles Times, and New York Times published 425 articles mentioning MOOCs from 2013 to 2014. As a point of comparison, the iPhone 6, which came out in 2014, was only mentioned in 340 articles in that same time span. The media

---

63 “MOOC OR MOOCs OR (Massive Open Online Course*).”

64 “iPhone 6.”
focus on MOOCs may have contributed to public interest in the subject: if you look at the Google Trends page for “MOOC” and “MOOCs,” there are very few searches until about 2012, when interest began to shoot up. It reached its highest point so far in February 2014 and remains high.65

However, on the surface, the media may seem to be behind the curve on the popularity of MOOCs. Enrollment in individual MOOCs is going down: in a recent study examining publically available statistics on MOOC enrollment and completion that looked at enrollments in 91 courses, the average number of students enrolled in each course was more than forty thousand in 2011 but had dropped to less than thirty-five thousand by mid-2013.66 However, this enrollment statistic is misleading. Because of the sheer number of MOOCs now available, students now have a great deal of choice regarding which classes they enroll in, which means that the total number of students is spread across more classes. In 2014, Harvard and the Massachusetts Institute of Technology, the partners behind EdX, one of the three most well-known MOOC platforms (the other two being Coursera and Udacity), released statistics about enrollment in their courses: between fall 2012 and summer 2013—less than a year—almost 600,000 students registered for at least one MOOC.67 That statistic, of course, does not even include registrants on other platforms, of which there are many. Overall, MOOC enrollments are going up.

The large number of students enrolling in MOOCs is fueled by two new trends. First, MOOC providers are now catering to younger students by offering courses specifically tailored

---

65 “Google Trends - MOOC and MOOCs.”


67 “Real-Time MOOC Snapshot.”
for college preparation, including Advanced Placement (AP) courses, which prepare students to take AP exams that can potentially enable them to skip introductory college courses. And second, MOOC providers are attempting to offer college credit for their courses. These trends, which both have the potential to allow MOOC students to obtain college degrees more quickly and less expensively, seem likely to continue because of the increasing cost of tuition at traditional institutions of higher education. In the face of insufficient financial aid, students are afraid of taking on massive student loan debt and are looking for less expensive alternatives, such as MOOCs. Students taking MOOCs for college preparation or for credit will have to take their online coursework more seriously than early MOOC students, but fortunately advances in connectivist learning are making it possible for MOOC designers to assign and provide detailed feedback on increasingly rigorous writing assignments.

**MOOCs for Younger Students**

Although there are now several MOOC providers offering courses designed for younger students, EdX is one of the companies leading the way on the high-school-MOOC initiative: it now offers more than forty MOOCs tailored specifically to high-school students, including courses designed to help these students prepare for Advanced Placement (AP) exams, which can be used to meet general education requirements in some colleges and allow students to skip over taking basic classes. The MOOCs are marketed as a tool to help high-schoolers get ready for college and be more competitive in the admissions process. Whether this emphasis on heightened preparation is a good idea is up for debate, but it does potentially help level the playing field for students who otherwise would not have access to the courses intended to prepare them for these exams: according to the College Board, the company that developed the

---

68 “High School Initiative.”
AP program, although AP enrollments have increased substantially over the past decade, forty percent of public high schools in the United States still do not offer any AP classes.\textsuperscript{69} Therefore this trend toward MOOCs for younger students makes a lot of sense: students want access to these classes so they can get into more competitive universities and graduate from those universities faster.

Universities also potentially benefit from students taking college-level classes before they enroll because it helps admissions officers identify students who are ready for college-level work during the admissions process, making the process easier as more and more students apply for the same number of spots. And beyond the college-preparatory applications of MOOCs for high school students, if MOOC platforms begin to offer vocationally focused courses for younger students, they could potentially gain more job skills before graduation, preparing themselves for future employment.

\textbf{Rising Tuition Costs}

Even with the current limited course offerings for younger students, parents who plan to send their children to college have a reason to encourage their high-schoolers to enroll in MOOCs: getting AP credit means being able to skip introductory university classes, which means graduating faster—and less expensively. With skyrocketing tuition costs, anything that enables students to graduate faster begins to look attractive. According to the U.S. Department of Education’s National Center for Education Statistics, as of the 2011-2012 school year, the average cost per year of attending a four-year college as an undergraduate was $23,066, and that cost has been climbing steadily every year.\textsuperscript{70} Meanwhile, the median household income in the

\footnotesize{\textsuperscript{69} “Number Of Students Taking Advanced Placement Classes Nearly Doubles Over Last Decade.”}

\footnotesize{\textsuperscript{70} “Tuition Costs of Colleges and Universities.”}
United States was only $61,455 that year according to the 2011 Community Survey. That means that the cost of one year of college is more than a third of most families’ annual income, and some families, of course, are sending more than one child to college at a time. As in the past, families are using financial aid to fill the gap between income and the cost of college.

But unlike in the past, a large percentage of that financial aid consists of student loans, leading to increased student loan debt. 71% of undergraduates received some form of financial aid for the 2011-2012 school year. Of those, 42% took out student loans—in an average amount of $7,100—and 5% had parents who took out federal Direct PLUS loans, in an average amount of $12,100. Meanwhile, the average amount of educational grants that did not need to be paid back was only $6,200. As a result, student loan debt in the U.S. has been steadily increasing. 2010 was the first year average student loan debt for graduating seniors was over twenty-five thousand dollars, clocking in at $25,250. As of 2013 it is up to $28,400. Nor is there any sign that the trend toward increased student loan debt will soon be reversed—in July of 2013, the interest rate on new federal student loans doubled. According to the Hamilton Project, which researches economic issues and advocates for economic policy improvements, forty percent of American households with heads under the age of thirty-five had outstanding student loan debt in 2010. From 2002 to 2012, the total volume of student loans in the U.S. grew 77 percent and the average debt per student increased by almost sixty percent. Delinquency rates are high, in part due to the economic downturn, which has made it difficult for recent graduates to get jobs.

71 “Social Explorer: Median Family Income.”
73 Hamilton, “Average Student Loan Debt Exceeds $25,000.”
74 “Student Debt and the Class of 2013.”
Student loan debt is rising even faster than tuition costs.\textsuperscript{75} It is clear that while financial aid is helpful in affording college, it only goes so far, and students who take out loans will be feeling that financial burden for years to come. Therefore students are looking for more cost-effective alternatives. Meanwhile, MOOCs are free or inexpensive and often offered by prestigious institutions, such as would be very expensive to attend in person.

\textbf{MOOCs for Credit}

Rising tuition is also one of the driving forces behind the other major trend in the world of MOOCs right now: the movement toward MOOCs for credit. According to the Hamilton Project, as of 2013, “the unemployment rate for individuals twenty-five and older without a high school diploma was over 11 percent, but below 4 percent for those with a college degree” and the rate of return on investing in a college education was more than fifteen percent.\textsuperscript{76} Students want to get college degrees so they can have more job opportunities and attain a higher salary, but the cost of enrolling in a university or college can be prohibitive and they are afraid of taking on huge amounts of debt. While offering AP credit via MOOCs for high school students allows them to graduate from college faster, offering college credit for other MOOC courses might allow future students to graduate from college without attending a traditional institution of higher education at all.

The trend toward MOOCs for credit began in 2013, when Coursera, one of the most well-known MOOC providers, began offering some courses that had been approved for transfer credit by the American Council on Education’s College Credit Recommendation Service (ACE CREDIT), which is “a recognized authority in assessing non-traditional education experiences,

\textsuperscript{75} Greenstone and Looney, “Rising Student Debt Burdens.”

\textsuperscript{76} Ibid.
with more than 2,000 colleges and universities considering ACE CREDIT recommendations in determining the applicability to their course and degree programs.”

Although ACE CREDIT accreditation is only a form of recommendation, not a mandate for acceptance of credit on the part of colleges and universities, it still carries substantial weight because of the high visibility and reputation of the American Council on Education (ACE), which lobbies for the rights of adult learners and contributes to federal policy debates on education. To receive credit for these courses, students must sign up for the paid (but inexpensive) “Signature Track” version of Coursera’s usually free classes, which uses webcam photos and typing patterns to verify students’ identities when they turn in their work. The student must also take an online credit exam, for which there is an additional fee, at the end of the course.

The trend toward MOOCs for credit has continued across other platforms since. Coursera is now no longer the only MOOC platform to experiment with offering college credit for its classes: Udacity, another well-known platform, has recently teamed up with Georgia Tech to offer an online master’s degree in computer science, which, although it does require a separate application and some extra exams and projects, takes place entirely in MOOC format, with degree-seeking students sharing classes with students who are not taking the course for credit. Even more recently, Coursera announced its first online degree, an MBA it plans to offer in collaboration with the University of Illinois. These MOOC-for-credit opportunities are not free,

77 “Coursera Blog: Five Courses Receive College Credit Recommendations.”

78 “About the American Council on Education.”

79 “Signature Track Guidebook.”

80 “Coursera Blog: Five Courses Receive College Credit Recommendations.”

81 “Udacity, Georgia Tech, and AT&T Partnership.”

82 Young, “U. of Illinois, With MOOC Provider, Will Offer Low-Cost Online M.B.A.”
but they are certainly less expensive for students than taking a comparable course at a traditional institution of higher education, in addition to being more flexible and requiring less paperwork. Meanwhile, offering credit is also profitable for MOOC providers, who make money from charging students small fees.

There has also been a legislative push to offer credit for MOOCs: in February 2013, Darrell Steinberg introduced a bill into the California Senate that would have required public colleges in the state to accept grants to develop MOOC versions of their 20 most in-demand undergraduate courses and offer credit in partnership with a MOOC platform.\(^\text{83}\) The bill did not pass as originally written, as it was intended to expand access to in-demand courses to reduce dropout rates and therefore the final version gave colleges the option of developing their own online courses instead.\(^\text{84}\) However, a similar bill in Florida that “orders Florida education officials to study and set rules that would allow students who have yet to enroll in college to earn transfer credits by taking MOOCs” did pass in 2013.\(^\text{85,86}\)

Course credit from MOOCs is not yet universally recognized by colleges and universities or by employers, but it may become more widely accepted once these organizations begin to recognize some of the advantages of digital credentials over traditional degrees. A digital certificate says that the student is organized and self motivated—he or she can set goals and follow through on them without needing the structure and guidance provided by a college or university. It also has the potential to provide more information than a traditional diploma or transcript, which only lists classes taken and grades received but does not explain the content of

\(^{83}\) Rivard, “MOOC Bill Dead for Now.”

\(^{84}\) “SB-520 Student Instruction: California Online Student Incentive Grant Programs.”

\(^{85}\) Kolowich, “MOOCs May Not Be So Disruptive After All.”

\(^{86}\) “‘Watered Down’ MOOC Bill Becomes Law In Florida.”
each class or preserve the student’s work for potential employers to scrutinize. Currently MOOC certificates do not provide this information, but the potential is there: a digital learning environment can preserve a student’s work and make it more easily accessible than a series of paper assignments tucked away in a professor’s filing cabinet.

**Taking MOOCs Seriously**

Both of these trends, the trend toward MOOCs for younger students and the trend toward MOOCs for credit, give students a reason to take their MOOCs more seriously. If they want AP credit or college credit, not only do they have to complete the coursework, but they also have to work hard and complete it at a higher level, with higher-quality work, because they are being graded. Of course, not every MOOC student is going to be active or work hard. Statistically speaking, because class sizes are so large and there are no barriers to entry, the majority of students are going to either not follow up on taking the class at all or be passive observers. About fifty percent of students who enroll in MOOCs actually take the class, with a median value of 9.8% of those students completing the class.87 However, it seems likely that as larger percentage of MOOC students start taking classes for college preparation or for credit, a larger percentage of them will begin to take their online coursework seriously. Meanwhile, currently active MOOC students tend to be very active indeed, as evidenced by the success of connectivist MOOCs, in which students aggregate information about the topic, remix that content by recording it for themselves in different formats, repurpose that information to create their own content, and feed that content forward to other participants.88 MOOC providers are catching on to the success of connectivist learning strategies and making MOOCs more interactive.

---

87 Jordan, “Initial Trends in Enrolment and Completion of Massive Open Online Courses.”

88 Kop, Fournier, and Mak, “A Pedagogy of Abundance or a Pedagogy to Support Human Beings?”
For instance, many MOOCs now incorporate writing assignments that are collaboratively graded. On Coursera, peer-graded assignments are processed in four phases: the submission phase, the peer evaluation phase, the self-evaluation phase, and the results phase. Students first complete the assignment by the submission deadline. Then they are assigned to critique several other students’ submissions. They are provided with a quantitative rubric to fill out and a space for comments and given several days to complete the evaluations. When they are done evaluating other students’ work, they must evaluate their own. After the end of the evaluation phases, students receive a grade based on the average score assigned to them by other students.\textsuperscript{89} Although of course being graded by an experienced instructor is preferable, collaborative grading makes it possible for students to receive individual feedback even in classes where enrollment tops several thousand individuals. Students must complete the peer evaluations to be successful in the class, and having multiple students critique each paper and averaging the scores they assign together makes the grading as fair as possible.

Although peer grading is not perfect, it does go a ways toward addressing concerns about the effectiveness of teaching humanities courses in MOOC format by creating an environment in which it is possible to assign rigorous writing tasks, such as traditional academic research papers. There is a popular perception among academics that MOOCs are only good for teaching subjects where right and wrong answers are easy to determine, like math or computer science\textsuperscript{90}: the equation either works or it doesn’t. The program outputs the correct answer or it doesn’t. Humanities courses are harder to implement as MOOCs because they are more subjective and grading has traditionally been qualitative rather than quantitative; collaborative grading is a

\textsuperscript{89} "Peer-Graded Assignments."

\textsuperscript{90} Heller, “Laptop U.”
potential solution. Although there are still other challenges involved in humanities courses—for instance, inducing students to participate in forum discussions as actively as they would in class discussions—peer grading has enabled the creation of an online learning environment in which serious MOOC students write academic papers.

**Current Access to Scholarly Resources is Limited**

As things currently stand, the resources available to serious MOOC students are extremely limited. Unless they are affiliated with a university, generally they do not have access to research materials or research help for writing papers. Since many of them, in the near future, are likely to be high school students or students trying to obtain cheaper degrees by not going through a traditional institution of higher education, they may never have done any schoolwork at the college level before. This lack of scholarly resources or assistance is particularly acute for students who have low incomes or live in rural or international areas where they do not have access to public libraries. Of course, students who have internet access to take MOOCs also have access to other online resources, but many of these resources are not scholarly and there is no guarantee that inexperienced students will be able to identify those that are. Even with the growth of the Open Access Movement, the scholarly resources freely available on the internet are currently insufficient for scholarly research in many areas. These barriers to access to scholarly materials will be discussed further below in the section on barriers to universal access.

**MOOC Students and For-Profit Companies**

In the meantime, as long as serious MOOC students want and do not have access to research resources through traditional channels, there is the potential for institutions other than libraries to step in and provide them. Students who take MOOCs for credit have already demonstrated that they are willing to pay a fee for online academic resources, and it seems
unlikely that for-profit companies will continue to ignore the growing potential market for online research resources. In fact, there are already a large number of online marketers that sell educational products and would be well placed to step into this growing niche.

For instance, a relatively new company called K12 offers “flexible and customized online services to students who struggle or otherwise aren’t comfortable in brick-and-mortar schools” and “has long been a focal point in the debate over the role of for-profit companies in education.”⁹¹ As suggested by its name, the company offers services aimed at children in pre-kindergarten through high school. These services include online courses and one of the target groups listed on their website is “college and career-minded students”⁹²—the same group that new MOOCs for high school students are aimed at. It does not seem like a stretch to suggest that for-profit companies such as K12, which already offer online services for these students, would be interested in filling the emerging niche of providing online research resources to support online students, including MOOC students.

At least one scholar has already recognized the potential of “the iTunization of Information” as a way to get scholarly digital resources into the hands of MOOC students: Kerry Wu, in a 2013 article on “Academic Libraries in the Age of MOOCs,” points out that if scholarly publishers decide to reach out to MOOC students and offer articles for purchase or rental “a la carte” for low prices, they could make a substantial amount of money based on the volume of MOOC students who are potential purchasers. Wu also suggests that publishers could accomplish this by partnering with MOOC providers or instructors to recommend articles to

---

⁹¹ Cavanagh, “K12 Inc. Building A New Brand For Some Services. (cover Story).”

⁹² “College and Career-Minded Students.”
purchase.\textsuperscript{93} This model must absolutely be prevented from occurring. It has a high potential for abuse, with publishers or MOOC providers recommending unnecessary or off-topic articles to make more money. It also undermines the accessibility of MOOCs for low-income students and cuts libraries out of the educational process, causing students to miss out on their expertise.

For-profit companies are not necessarily bad, and they don’t necessarily provide poor-quality services. Two of the three major MOOC providers, Coursera and Udacity, are themselves for profit (EdX, the third major provider, is a nonprofit).\textsuperscript{94} However, the courses offered on these platforms obviously reflect the values and opinions of the professors who designed them; it is easy to see the source of the biases. Research services, however, reflect more complex biases than MOOCs themselves. The research materials have a bias reflecting their authors’ views. The research collection has a bias reflecting its selectors’ views. The items suggested to the student by the reference assistant reflect that person’s biases. The items selected by the student reflect the students’ biases. The way the student uses those resources also reflects his or her biases. Navigating the research and writing process, in other words, is much more complex in terms of bias than taking a class because it is more individualized and less guided.

Libraries and librarians are, of course, not perfect and have biases of their own. However, libraries have an advantage over private companies providing research materials and services in that they have a history of being aware of this bias and actively trying to eliminate or reduce it. A recent annotated bibliography analyzing works about bias in library services and collections identifies seventeen articles and books on the subject published between 2004 and 2012, which focus on bias-related issues including diversity, community outreach, reference, filter bubbles,

\textsuperscript{93} Wu, “Academic Libraries in the Age of MOOCs,” 582.

\textsuperscript{94} Shumski, “MOOCs by the Numbers.”
censorship, collection development, and LGBT issues. In an attempt to reduce bias in libraries, librarians have implemented a strict code of ethics.

The American Library Association, “the oldest and largest library association in the world,” has an eight-principle Code of Ethics. In this code, ALA declares its commitment to providing equitable access to accurate, unbiased, and uncensored information; protecting users’ privacy and confidentiality; not advancing private interests; and not allowing personal convictions to interfere with professional duties. The ALA Code of Ethics was adopted in 1939 and has since been revised several times, most recently in 2008. ALA also has a separate Code of Ethics for Librarians, which will be discussed in more detail later in the section on overcoming challenges to providing research materials to MOOC students. This time spent thinking in depth about bias and ethics makes libraries a safer bet for educating the students of tomorrow than for-profit companies.

The Potential for Research from MOOC Students

In an era when MOOCs are gaining momentum, it is especially important to ensure that students are getting high-quality education. The two main trends in the world of MOOCs at the moment, MOOCs for high school students and MOOCs for credit, are both providing a wider audience for MOOCs and ensuring that the students who take them are taking them more seriously. Advances in connectivist learning, including peer grading, are making it both possible and likely that in the near future, MOOC students will begin working on research projects and

---

95 Dimsdale, “An Annotated Bibliography on Bias in Library Services and Collections.”

96 “About ALA.”


98 “Code of Ethics for Librarians.”
papers, especially since high school students will want to demonstrate their ability to handle college-level research for admissions officers. If libraries, with their strict code of ethics designed to reduce bias, do not step in to provide research help and resources to MOOC students, we risk leaving the next generation of students to the mercy of biased resources from for-profit companies. As Jonathan Haber’s book MOOCs puts it, “if a free MOOC class includes required reading that students would have to pay to obtain, how open (or democratic) can a MOOC program really be?” 

Section Three: Public Libraries versus Academic Libraries

Once we have established that it is necessary and indeed morally obligatory for libraries to support MOOC students by providing research resources and reference assistance, the question arises of which libraries, exactly, ought to be providing this support. There are two obvious choices, public libraries and academic libraries, and there are good arguments to be made for each. Public libraries are more prevalent, are designed to serve the public (which includes MOOC students), and have a gentler learning curve than academic libraries. On the other hand, academic libraries have more scholarly materials, particularly older scholarly materials, and are designed to support students.

The Arguments for and Against Public Library Support

Public libraries seem like the obvious choice for supporting MOOC students who are not already affiliated with an institution of higher education. There are more of them than academic libraries, students may already be familiar with how to use them, and they are designed to

99 Haber, MOOCs, 59.
support the general public. Most people in the United States, at least, are familiar with public libraries. According to a 2013 report from the Pew Research Center, eighty-one percent of Americans ages sixteen or older have visited a public library or bookmobile at some point in their lives, forty-four percent have visited a public library website at some point in their lives, and seventy-two percent had either used a public library or lived in a house where a family member had used a public library in the past year. These numbers, although not exactly equal, are relatively comparable regardless of race, age (excepting website use), household income, and community type (urban versus suburban or rural). Americans with more education are more likely to have visited a public library, both in their lives and in the past year, but even so, sixty-six percent of Americans without a high-school diploma have used a public library (versus eighty-six percent of those with a college degree).100 Taken together, all of these numbers mean that most Americans are familiar with public libraries—they probably know where their local libraries are and how to use them, or at least have a friend or family member who can help them get oriented.

By comparison, according to the 2013 5-year American Community Survey estimate, slightly fewer than thirty percent of Americans have a bachelor’s degree or higher. Even if you include people whose highest educational attainment is an associate’s degree (about eight percent of Americans), that means that most potential MOOC students in the U.S. are probably not familiar with any academic library, let alone academic research libraries. However, a recent study conducted by researchers at the University of Pennsylvania found that out of a sample of 34,779 survey respondents taking their MOOCs through Coursera, about seventy-nine percent of them had at least a bachelor’s degree, which is not representative of the greater population. They

100 Zickuhr et al., “Section 1.”
concluded that “while there is tremendous hope for this educational platform, the individuals the MOOC revolution is supposed to help the most—those without access to higher education . . . — are conspicuously underrepresented among the early adopters.” However, only 8.5 percent of those invited to take the survey responded.  

Public libraries are also excellent places to do research on popular culture, local community history, and genealogy, as they are more likely to collect popular books, magazines, and other popular media than academic libraries and often serve as a repository for community publications, like local newspapers or phone books. However, although public libraries may be appropriate for some specific types of research, generally they do not have the range of research materials available at academic libraries.

According to a 2005 article from the journal *The Serials Librarian* comparing serials paradigms in public and in academic libraries, there are several key differences. Firstly, in public libraries, “one person is often responsible for managing the periodicals collection of a main library and all branches,” although “managers of branches, or other subject specialists, sometimes offer suggestions for making purchasing or cancellation decisions,” whereas in academic libraries, there is usually “a more interactive and inclusive team approach for making collection decisions” and “the team may consist of faculty, staff and librarians.” Greater diversity among the selectors and greater expertise in the subject areas for which they are selecting journals or databases means a more varied selection—helping to overcome selection bias to a degree—and materials better targeted to patrons’ specific fields of research. In the

101 Christensen et al., “The MOOC Phenomenon.”


103 Ibid.
academic model of selection, every journal or database has been chosen by someone who is familiar with the subject, enabling them to make decisions based on knowledge that a non-expert might not necessarily have, such as which journals are seminal and which are secondary. Academic librarians also “often expect or seek faculty input”\(^{104}\) when they are selecting new materials, which means that they are choosing materials that have been specifically designated as appropriate to supplement higher education by individuals who have teaching experience in that field.

**The Arguments for and Against Academic Library Support**

Another of the major arguments for academic libraries supporting MOOCs is that not doing so may cause them to lose relevance. If MOOC providers partner with private companies—for instance, publishers—to provide research materials to students, or even if private companies reach out directly to MOOC students, academic libraries may no longer be the primary information brokers for scholarly materials. Instead, they may become, as one article puts it, “an exclusive club catering to the small group of students that are still paying big money for the on-campus experience.”\(^{105}\)

MOOCs also provide an opportunity for academic libraries to advocate for open-access publishing, which has been a huge topic in the library community in recent years.\(^{106,107,108}\) If professors who have designed MOOCs see that the traditional model of scholarly publishing is preventing their students from accessing scholarly resources, they may become more inclined to

\(^{104}\) Ibid.

\(^{105}\) Wu, “Academic Libraries in the Age of MOOCs,” 582.

\(^{106}\) Lara, “The Library’s Role in the Management and Funding of Open Access Publishing.”

\(^{107}\) Linlin Zhao1, “Riding the Wave of Open Access.”

\(^{108}\) Vandegrift and Bolick, “Free to All.”
publish in open-access journals or repositories so that those students can have access to their work. However, this course of events may not occur if academic libraries do not bring access barriers to the attention of professors by attempting to serve MOOC students.

However, the argument has been made that MOOCs are not in-depth enough for librarians to be relevant: as one article puts it, “many MOOCs are short, vocationally oriented courses lasting as little as four to six weeks. Where a MOOC aims to equip individuals with a very specific set of skills and knowledge, librarian input may well be superfluous.” That may be true in the case of vocational courses, such as Udacity aims to provide, but the majority of MOOCs are academically oriented. In the long run, if MOOC students are to be successful as students, they must learn information literacy skills, regardless of how steep the learning curve might be, and they need access to scholarly research materials. Therefore academic libraries are the better choice. However, even if academic libraries commit to providing research help and resources for MOOC students, there are still obstacles to overcome.

Section Four: Obstacles to be Overcome

Traditionally, scholars affiliated with institutions of higher learning have used research libraries, while members of the public mostly frequent only public libraries. But is it right that access to scholarly works should be limited to only patrons affiliated with an institution? Article twenty-six of the United Nations’s “Universal Declaration of Human Rights” states that everyone has the right to education, that higher education should be accessible to all, and that


110 Barnes, “MOOCs,” 165.
education strengthens respect for human rights and promotes understanding. Access to scholarly works supports education, including self-education. In light of the goal of using education to uplift people, and in light of historical library values and human rights to information, everyone should have access to scholarship through the resources and services of research libraries.

However, before this can occur, research libraries must work to address institutional, distance-related, legal, and resource-based barriers to universal access. This paper discusses the history of and reasons for the existence of these barriers and suggests some possible solutions, including outreach and awareness, digitization on demand, open access and digital first sale, and improved fundraising techniques. In this discussion, the MOOC students who do not currently have access to research libraries are variously referred to as “outside users,” “public users,” “nontraditional users,” and “potential patrons.” It is also important to acknowledge that most research libraries are affiliated with institutions of higher learning, and to address barriers accordingly.

Library Values

One of the central tenets of library values has always been equal access for everyone. The earliest modern rules of librarianship were written in 1931 by Shiyali Ramamrita Ranganathan, and two of them were, “Books are for use,” and, “Every reader his book.” Although they do not explicitly state that everyone should have equal access to libraries, you obviously do not have to be affiliated with a research library to be a reader, and if an outside reader wants to use a book, that is what they are for. In 1939, the American Library Association (ALA) adopted its first code

111 “The Universal Declaration of Human Rights.”

112 Gorman, Our Enduring Values., 19.
of ethics, which stated that “impartial service should be rendered to all who are entitled to use the library” and that “librarians should participate in public and community affairs.” To truly engage with the public, it is necessary to invite the public into the library, and once they are there, they are entitled to impartial service. The same year, they adopted a Library Bill of Rights, the current version of which reads, “Library resources should be provided for . . . all people of the community the library serves,” and, “A person’s right to use a library should not be denied or abridged because of origin, age, background, or views.” If origin is not a grounds to deny library services, surely a potential user who has an origin outside of the institution a research library traditionally serves should still have access. ALA also has a statement on Intellectual Freedom Principles for Academic Libraries that states, “A service philosophy should be promoted that affords equal access to information for all in the academic community.” The public is part of the academic community. Traditional institutions of higher learning do not hold a monopoly on either education or scholarship; anyone can pursue either or both, and therefore should have access to research materials and services.

Kay Mathiesen, in her 2013 article “The Human Right to a Public Library,” makes the argument that public libraries are a human right, derived from three rights to different types of information mentioned in the Universal Declaration of Human Rights. However, access to public libraries is insufficient in providing universal access to information. Public libraries provide access to current and useful information, but their purpose is not the same as that of academic libraries, which often contain older and more obscure materials, as their mission is

113 “Code of Ethics for Librarians.”
114 “Library Bill of Rights.”
116 Mathiesen, “The Human Right to a Public Library.”
more focused on catering to researchers than on maximizing the use of all materials. Therefore, it is important, in the interests of human rights and of education, to provide universal access to research library materials as well.

**Barriers to Universal Access**

There are four types of barriers facing research libraries as they consider offering their materials to a wider audience. Firstly, there are institutional barriers related to the desire of potential patrons and research libraries to interact and to the ability of the former to navigate library resources despite classification practices, collection bias, and low technical skills. Secondly, physical barriers include the time required for interlibrary loan, the difficulty—for some potential patrons—entailed in obtaining consistent internet access, the lack of availability of older materials as ebooks, and the cost of digitization. Thirdly, there are legal barriers to universal access, specifically related to copyright laws on digital materials. And finally, the idea of expanding access brings up resource-based issues, including the limited time research librarians have to cater to outside patrons, the amount of work they are already doing, and the lack of support and funding for expanding access.

**Institutional Barriers to Universal Access**

Before other barriers to universal access to research library materials and services can be addressed, it will be necessary to break down a number of institutional barriers. The most important institutional barriers are twofold: first, few members of the public use or understand the purpose of research libraries; and second, research libraries do not necessarily welcome outside users. The former is true in part because of the latter, and also in part because of other institutional barriers, like classification practices and collection biases. However, librarians can begin to address these barriers through recognizing the importance of serving nontraditional
users, reaching out to them and to a more diverse pool of potential library students, and providing research assistance in addition to just access to materials.

The two most important institutional barriers to address are inducing in potential patrons a desire to use research libraries and instilling in research libraries a willingness to cater to the general public. Few members of the public use public libraries, and even fewer use research libraries. Although in the United States, at least, most people believe that libraries are important to their communities, thirty-one percent of the U.S. population over the age of sixteen seldom or never uses public libraries.\footnote{Zickuhr, Purcell, and Rainie, “Library Engagement Typology.”} Public use of research libraries is much lower: a 2004 survey of sixty-five academic libraries found only two where librarians estimated that twenty percent or more of the users were unaffiliated.\footnote{Shires, “A Library of One’s Own.” 317.} Part of the problem is that few members of the public see any reason to want to visit a research library, but the other part is that although most research libraries allow some use by outside patrons,\footnote{Courtney, “Barbarians at the Gates.” 478.} they are not particularly welcoming to them. Few research libraries mention serving unaffiliated users in their mission statements, and there is a recurring question of whether they have the resources to do so,\footnote{Shires, “A Library of One’s Own.” 316.} which will be addressed in the section on resource barriers below.

Part of the reason that there is low use of research libraries by the public is that, even in research libraries that are welcoming to outside users, resources can be difficult for the uninitiated to navigate. Library catalogs may marginalize topics in which outside users are interested, and local collections may not contain the items they are looking for.

Catalogs are organized using controlled vocabularies that make it relatively easy to find

---

117 Zickuhr, Purcell, and Rainie, “Library Engagement Typology.”
120 Shires, “A Library of One’s Own.” 316.
information on mainstream topics but “reflect the marginalizations and exclusions of the society they serve.”\textsuperscript{121} Outside users, especially those living in rural areas or underdeveloped countries, are often already marginalized and may find that marginalization reflected in the controlled vocabulary used for topics in which they are interested.

And even if their search efforts are successful, there may not be much to find. Collections in research libraries reflect the biases, known or unknown, of their selectors, which may result in a lack of access to the scholarly topics outside users want to research. A 1991 study found, for example, that liberal titles are more likely to be found in academic libraries, while conservative ones are more likely to be found in public libraries.\textsuperscript{122} Given that older scholarly works are unlikely to remain in the collections of public libraries, that might make it difficult to find past conservative titles. It is difficult to fix the problem of bias in collection development because of the “introspection illusion,” which is the tendency of selectors to conclude that they have no biases after examining their thoughts and feelings and not identifying any. Bias is insidious specifically because it is so often unconscious,\textsuperscript{123} but it can have a major impact on nontraditional users, who hail from background very different than those of research librarians.

Breaking down institutional barriers will require a four-step process: first, research libraries must realize that it is important to cater to outside users. Second, they must conduct outreach—not just to potential patrons, to convince them of the value of using research libraries, but also to diverse potential students of librarianship. In the long run, while good intentions and awareness are an important beginning, diversity among the people who create controlled

\textsuperscript{121} Olson, “The Power to Name.” 639.

\textsuperscript{122} Quinn, “Collection Development and the Psychology of Bias.” 278.

\textsuperscript{123} Ibid., 282.
vocabularies and select materials is the best way to reduce unintentional marginalization. And third, in the meantime, librarians must cultivate awareness of the needs of outside users and seek to assist them as much as possible, especially because they may lack the technical skills necessary to navigate library resources due to limited education or lack of familiarity with information technology.

**Distance as a Barrier to Universal Access**

One of the main barriers to universal accessibility of research library materials is that of distance. Many potential patrons, especially those in rural areas or developing countries, do not live near a research library and do not have the means to travel to one. Even for potential patrons who live close to a research library, that library may not have the materials that the patron wants or needs. The obvious solution for the latter problem is interlibrary loan, but it can be very slow. And although it is important to acknowledge the digital divide, most of the possible ways to overcome distance barriers involve digital solutions. Ebooks are promising, but most older titles are not available in that format, and for those that are, copyright can still be an issue. Even if it were not an issue, digitizing books that were not originally published as ebooks is slow and expensive. However, digitization on demand shows promise as a way to provide access to potential patrons despite distance barriers.

Since the first quarter of the twentieth century, the traditional remedy for a patron’s home research library not having the materials a patron wants has been interlibrary loan.¹²⁴ Even if a potential patron does not live close to a research library, he or she may live close enough to another library to pick up interlibrary loan books there, and some remote areas also have bookmobiles or book delivery services that could be used to transport interlibrary loan materials

---

for the last few miles. The problem with interlibrary loan as a solution is that it is slow. Document delivery services, at least in areas where there is internet access, have become faster as they have become mostly electronic, but there has not been the same progress in the speed of sending physical materials that are too long for document delivery. According to Thomas Nisonger’s 2001 review of literature on interlibrary loan turnaround times, various studies have found that the average time from a patron submitting a request to his or her library receiving the item is anywhere from seven to thirty-eight days, with the median at 13.6. Although the studies he cites are from the 1990s, there have been no significant advances in shipping speed since then, the last major innovation in shipping being the creation of international standards for shipping containers in the 1960s. For potential patrons who live in remote areas, turnaround time for interlibrary loan requests is likely to be even longer, from two to three weeks.

Before continuing to discuss the possible solutions to the slow speed of interlibrary loans, it is important to acknowledge what in the mid-1990s was named the “digital divide.” At that point, the internet had begun, like the printing press, the steam engine, and the automobile before it, to be hailed as a technological advancement that would revolutionize society. However, access to the internet was (and is still) strongly correlated with income and education. Although some scholars at that time expressed hope that competition would drive down the price of computers and internet access, and although internet access in the United States has indeed become more widespread, the digital divide still exists, particularly in rural and low-income areas and in developing countries. A 2009 article about digital access in Africa, for example, asserts that

---

125 Ibid.
126 Levinson, The Box.
internet access is still “not widely available in schools, libraries, or homes” there and that “there is a gross underutilization of technologies” because of the lack of required infrastructure to support them. Even if MOOC students are able to get the necessary internet access to complete their coursework, that does not necessarily mean that they have access to the internet all the time. For instance, Coursera’s learning hubs provide internet access for MOOC students, but only during specified discussion times. Many of the possible solutions to the problem of distance as a barrier to universal access to research materials rely on the internet as a faster mode of delivery, and although it is beyond the scope of this discussion to suggest solutions to the digital divide, it is clearly an issue that must be addressed if research libraries are truly to be able to provide fast, universal access to potential patrons.

One potential solution to the problem of slow interlibrary loans is the invention of ebooks. Although ebooks have existed as far back as 1971, when Project Gutenberg began their digitization process, ebooks have only come to the notice of the general public since the early 2000s. Previous to that, ebooks tended to be digital versions of texts in the public domain—in other words, usually texts that would be relatively easy to obtain anyway because anyone could reprint them. Libraries quickly embraced ebooks as a new lending format, in part to forestall assertions that they are becoming irrelevant in the digital age. Although there are some legal barriers to lending ebooks due to copyright, which is discussed in the section on legal barriers below, in theory an ebook can be delivered instantly anywhere in the world. The high delivery speed makes ebooks appear to be an attractive alternative to interlibrary loan; however, the
reality is that only a relatively small minority of books are available in electronic format from libraries. Most publishers only began to offer ebooks after 2000. Therefore, even in libraries that devote a high percentage of their acquisitions budgets to ebooks, a relatively small percentage of the total collection will be digital because of the proportion of older materials, which are not generally available as ebooks, to newer materials. Nonetheless, for newer scholarly materials, ebooks are an excellent option for universal access.

There has been some effort, of course, to digitize older books, most notably on the part of the aforementioned Project Gutenberg and, more recently, Google Books. The latter, unlike the former, digitizes books that are still under copyright. Google defends this practice by pointing out that although users can search the text of these books, they cannot read the entirety; they see only bibliographic information about the book and a few sentences surrounding the search term to provide context. Therefore, although this practice, regardless of its legality or morality, is excellent for helping users to discover books and for preserving the content of those books, it is of little help to potential research library patrons who want to obtain copies of older books, since they would still have to request those books via interlibrary loan.

Part of the problem with obtaining older texts as ebooks is the difficulty of digitization, which is both a time-consuming and an expensive process, the more so because the time and money needed for each project are difficult to estimate. In 2010, three Spanish researchers invented a mathematical model for cost estimation that they called DiCoMo, the Digitization Cost Model, after spending five years digitizing twelve thousand books. DiCoMo included two main cost factors: size-independent overhead, the cost of preparing the tools, which varies

132 Polanka, No Shelf Required., 10.

133 “Perspectives – Google Books.”
according to the fragility of the item to be digitized; and *time cost*, which varies according to the number of pages the item has. They also identified a large number of modifiers that could increase or decrease the digitization time, including the staff’s experience and familiarity with tasks and tools, the presence of foreign or ancient languages, the condition of the paper, the modernity of the typeface, the age of the book, the desired quality of the final product, and the adequacy of the technology used.\textsuperscript{134} Given the complexity of estimating the duration and cost of digitization projects, most libraries, with their limited budgets, have been understandably hesitant to commit large amounts of resources to pursuing them. Even with accurate cost models, it is clear that digitization is expensive; an exponential curve based on the DiCoMo model estimates that a book with two hundred and fifty pages will take about two hundred and twenty-five hours to digitize.\textsuperscript{135} That’s a lot of effort to put in for a faraway potential patron, even without counting the cost of tools, materials, and labor.

However, digitization is not an entirely hopeless proposition as a faster alternative to sending older books though physical interlibrary loan, as there has been some recent progress on the front of cheaper, faster digitization. Google came up with a gentler high-speed process for scanning books in 2003, although they have not published the details.\textsuperscript{136} There has also been some discussion of the use of automated book scanners to provide on-demand digitization of library resources. Initial costs for obtaining the machine and setting up a workflow are high, such that research libraries might not be willing to invest in them purely for the sake of unaffiliated patrons, and the digitized copies that result are of only moderate quality. However, libraries

\textsuperscript{134} Bia, Muñoz, and Gómez, "DiCoMo." 143-144.

\textsuperscript{135} Ibid., 145.

\textsuperscript{136} “Google Books History – Google Books.”
might be willing to invest for the sake of their own traditional patrons, who, in one survey, expressed high interest in full-text book digitization on demand, with ninety-one percent of respondents interested. Just as importantly, the same study found that ninety-three percent of library staff respondents were interested in digitization on demand, partly because it could be used to replace lost or damaged items. With such a high degree of interest from both traditional patrons and library staff, libraries might be willing to invest in digitization on demand, with secondary benefits to faraway potential patrons.

**Legal Barriers to Universal Access**

Many of the barriers to universal access to research materials are a result of legal restrictions. Libraries are able to lend out physical materials and to provide them via interlibrary loan due to a piece of copyright law called the first sale doctrine, which, despite efforts to amend it for the digital age, does not currently apply to ebooks. As a result, most libraries that want to lend out ebooks currently license rather than purchase them, which means that they must abide by publishers’ restrictions on lending. However, the growing open access movement is an attempt on the part of scholars to reclaim control of their work and offer it to a broader audience. As the open access movement matures, we must continue to fight for a digital first sale doctrine.

The first sale doctrine states that once a person purchases a copyrighted work, he or she has the right to sell (and, by extension, to lend) that work without the permission of the copyright owner, as long as no copies of the work are made. The first sale doctrine has its roots in English common law of the sixteenth century, which prohibited restrictions on the use or re-sale of property that had been transferred to a new owner. It became precedent in the United States in


1908 as a result of the Supreme Court case *Bobbs-Merrill Co. v. Straus*\(^{139}\) and was written into law the following year.\(^{140}\) Thereafter, the first sale doctrine was minimally revised in 1976 (Title 17, Section 109) and has not been changed since.\(^{141}\)

The first sale doctrine is not, however, currently considered to apply to digital documents, such as ebooks, in part because it is so difficult to transfer an ebook without making a copy of it. In 1997, Congressmen Rick Boucher and Tom Campbell introduced the Digital Copyright Era Enhancement Bill, which proposed adding wording to Section 109 that would make it legal to make copies of copyrighted digital documents for the purpose of transferring them as long as the original document was immediately deleted.\(^{142}\) The American Libraries Association (ALA) supported the bill,\(^{143}\) but Congress chose to have the Copyright Office and the National Telecommunications and Information Administration (NTIA) conduct a joint study (later combined with a study on the Digital Millennium Copyright Act, DMCA\(^{144}\)) on the possible effects of the change.\(^{145}\) The study, which was completed in 2001, identified three main problems with the Boucher-Campbell model of digital first sale: one, the first sale doctrine was never intended to grant reproduction rights; two, the first sale doctrine has limits in the real world that it does not have in the digital (e.g. geography, deterioration of works); and three, the requirement that copy owners delete their copies after selling would be difficult to verify or


\(^{140}\) “An Act to Amend and Consolidate the Acts Respecting Copyright.”

\(^{141}\) “U.S. Copyright Office - Copyright Law: Chapter 1.”


\(^{143}\) Flagg, “ALA Praises Internet Copyright Bill: Digital Era Copyright Enhancement Act of 1997.”

\(^{144}\) “Digital Millennium Copyright Act,” §1.104.

enforce, which is perhaps the most compelling argument. The DMCA itself did not cause any significant changes in libraries’ rights to lend digital materials. The ebook industry, however, prefers to avoid the issue of digital first sale altogether by licensing instead of selling ebooks to libraries.

Despite the lack of progress on the front of digital first sale, some scholars and institutions are fighting back against copyright restrictions on digital materials. The open access movement, which began in approximately 1998 but is only now gaining momentum, is an attempt to wrest control of scholarly communication back from the commercial publishing industry. In addition to causing issues with digital copyright, the industry has begun charging very high prices for online journal access, with prices rising 227 percent between 1986 and 2002. It has also begun “bundling” journals, requiring libraries to subscribe to journals they do not want in order to get access to the ones they do. A growing alternative to traditional publishing, open access publishing allows scholars to provide free online access to their work, usually with minimal copyright and licensing restrictions. Most open access journals are, however, still peer reviewed. Open access is excellent for allowing members of the general public to view research that they previously would have had to obtain from a research library. However, open access research is not a substitute for providing the general public with access to the services of research libraries for three reasons. First, just as older texts are seldom available as ebooks, older research is seldom available in open access journals. Second, although open access is gaining traction, it does not seem likely that it will entirely replace the traditional scholarly publishing

---

146 “DMCA Report Executive Summary.”


industry any time soon. And third, even if the public can view scholarly materials through open access, access alone is not a substitute for the assistive services of a research librarian.

While the open access grows and matures, therefore, it will be necessary to continue to fight for the creation of a digital first sale doctrine; the issue is not yet concluded. In July of 2013 the Department of Commerce released a green paper exploring “Copyright Policy, Creativity, and Innovation in the Digital Economy.” The paper notes that more and more copyright owners are avoiding the issue of digital first sale altogether by “structur[ing] the transaction as a license rather than a sale . . . This has long been the case for software and is now becoming more common for e-books.” It suggests that policy-makers may be motivated to modify the first sale doctrine to prevent it from becoming obsolete as digital distribution becomes more common. The paper does not make suggestions as to how or whether the doctrine should be modified but does point out that “since the Copyright Office’s examination of the digital first sale doctrine in 2001, much has changed.”

The U.S. Patent and Trademark Office began soliciting comments online in October 2013, in person via a public meeting in December 2013,150 and plans to continue soliciting them via public roundtable meetings in July of 2014.151 It is important that librarians attend these meetings and advocate for digital first sale as a means to improving access to scholarship for everyone, traditional and nontraditional users alike.

Resource Barriers to Universal Access

Even if all of the institutional, distance, and legal barriers to universal access to research library materials and services were to be addressed, libraries would still need to find the support,  

149 “Copyright Policy, Creativity, and Innovation in the Digital Economy.”

150 “Request for Comments on Department of Commerce Green Paper, Copyright Policy, Creativity, and Innovation in the Digital Economy | NTIA.”

151 “Director’s Forum: A Blog from USPTO’s Leadership.”
money, and time to serve nontraditional users. Support for outside access programs is not consistent among upper management in research libraries because of high turnover rates, but there is still an incentive for middle managers to innovate. However, there is little money (and therefore little staff and librarian time) to support these programs. To truly implement universal access to research library materials and services, it will be necessary to hone fundraising skills and seek new sources for major gifts.

There has been, since the mid-seventies, high turnover of directors in research libraries.\(^{152}\) A high rate of turnover makes it difficult to introduce new programs, such as would be necessary to cater to outside users, because each new director will have new priorities and may not support initiatives launched by the previous director. However, in a work environment that has grown increasingly competitive,\(^{153}\) there is more incentive for middle managers to attempt to boost their performance reviews by creating innovative new programs, including public outreach.

However, even with an incentive to introduce new programs to serve potential users, there is not currently enough funding for them, or, perforce, enough time. Research libraries are already experiencing such extreme budget cuts that some of them have implemented or are considering implementing a fee to provide services to patrons not affiliated with the parent organization.\(^{154}\) Even if these fees are charged only on a cost-recovery basis, they discourage outside patrons from seeking research library services, and the potential patrons who are already under-privileged in regard to access to scholarship are the most likely to be unable to afford a

\(^{152}\) Woodsworth, "Getting Off the Library Merry-Go-Round."

\(^{153}\) Hernon and Schwartz, "Leadership." 243.

\(^{154}\) Brooks, "Library Research on Campus." 347.
Yet if neither libraries nor potential patrons can afford to fund research services for the latter, who would provide the monetary support for these services? The recent economic downturn has made it more difficult to obtain grant funding from both private and government organizations.\textsuperscript{155} However, libraries can still seek to solicit major gifts to fund new programs. Many research libraries, especially academic libraries, do not use their connections to the fullest to find good prospects. It is true that academic libraries themselves do not have alumni from whom to solicit gifts and connections, but they do have connections to schools and departments that have access to alumni’s ears. An article describing fundraising tactics used at the University of Michigan’s library suggests meeting with deans, offering Special Collections tours to colleagues who have visiting donors, participating in alumni or parent events on campus, and inviting development officers to see new exhibits before they open so that they have time to invite donors.\textsuperscript{156} Offering services to outside users is a worthy goal, and one that potential donors are likely to have sympathy with, many of them being outside users themselves.

**A Bright Future**

Although there are many obstacles to the ethical goal of research libraries providing universal access to scholarly research and reference services, they are not insurmountable. If research libraries are willing to accept outsiders as patrons, to reach out to them, and to nurture diversity in the information professions as a method of reducing marginalization, institutional barriers can be overcome. As internet access becomes more widespread, and as we perfect fast, inexpensive digitization techniques, it will be possible to provide faster, more reliable

\textsuperscript{155} Gonzalez, "Major Gifts Funding for Academic Libraries, 2003 to 2007." 64.

\textsuperscript{156} Bennett, "Creating Partnerships That Pay off."
interlibrary loan services in spite of the distance between some potential patrons and the research materials they want. Scholars and libraries will continue to pursue the open access movement and to campaign for a digital first sale doctrine to manage legal barriers to universal access. And finally, libraries must cultivate diligently the funding resources around them that are currently overlooked to support new programs for outside users. Universal access will not occur overnight, but it is coming, and sooner than we think.

Conclusion

It is easy to see that although MOOCs are new, they have triggered a great deal of innovation in the field of higher education, have made higher education available to students who otherwise would not have access to it—especially students outside the United States, who have been perhaps even more impacted by the advent of the MOOC than have Americans—and have caused a number of dilemmas for educators and for librarians. One of the largest of these dilemmas, whether libraries should support MOOCs and if so, how, has yet to be resolved. We have demonstrated unambiguously that libraries, and specifically academic libraries, should provide research materials and reference assistance to MOOC students and examined many of the obstacles and possible solutions thereto, but there remain major questions to be answered.

For instance, if it becomes easier for MOOCs to acquire accreditation and thereby be eligible for course credit, will credit for MOOCs continue to be low cost or will MOOC providers try to take advantage of the greater potential for profit by raising their prices? If academic libraries do begin to offer support for MOOC students, will they need to implement special programs for younger MOOC students, who are a growing demographic and might need more guidance? And will the inability to agree on a digital first sale doctrine drive even more
scholarly resources to move to a licensing model, making it even harder for MOOC students to get access to them?

These questions will eventually need to be resolved if MOOCs are to continue to be a viable option for distance education, but for the moment, if academic libraries were only to begin to consider how they can help students taking MOOCs in spite of the obstacles, that would be a good start.
Appendix A: MOOC History Timeline

- 2002: MIT OpenCourseWare
- 2004: iTunes U
- 2008: Connectivism and Connective Knowledge
- 2011: Coursera
- 2012: Udacity and EdX
- 2014: Coursera switches to “nanodegrees”
- 2015: Coursera announces an online MBA
Bibliography


http://www.acenet.edu/about-ace/Pages/default.aspx.


http://www.al.org/Template.cfm?Section=interpretations&Template=/ContentManagement/ContentView.cfm&ContentID=8551.


Barnes, Cameron1, cbarnes@une.edu.au. “MOOCs: The Challenges for Academic Librarians.” *Australian Academic & Research Libraries* 44, no. 3 (September 2013): 163–75.


Beaven, Tita, Anna Comas-Quinn, Mirjam Hauck, Beatriz de los Arcos, and Timothy Lewis.


*Education Week* 33, no. 27 (April 2, 2014): 1–17.

Chamberlain, Edmund. “Investigating Faster Techniques for Digitization and Print-on-Demand.”


http://www.ala.org/advocacy/proethics/history/index5.


http://www.ala.org/advocacy/proethics/codeofethics/codeethics.


http://eric.ed.gov/?q=Bridging+the+Digital+Divide%3a+The+Impact+of+Race+on+Computer+Access+and+Internet+Use&id=ED421563.


http://search.proquest.com/results/.


Kop, Rita, Hélène Fournier, and John Sui Fai Mak. “A Pedagogy of Abundance or a Pedagogy to Support Human Beings? Participant Support on Massive Open Online Courses.” *The International Review of Research in Open and Distance Learning* 12, no. 7 (October 18, 2011): 74–93.


http://www.ala.org/advocacy/intfreedom/librarybill.


“Student Debt and the Class of 2013.” Project on Student Loan Debt, November 2014.  


http://nces.ed.gov/fastfacts/display.asp?id=76.


“‘Watered Down’ MOOC Bill Becomes Law In Florida.” Inside Higher Ed, July 1, 2013.  

Winterhalter, Benjamin. “Will Free Online Courses Ever Replace a College Education?”  
Distance Education Report 18, no. 17 (9/1/2014 2014): 2–2.


http://www.dlib.org/dlib/march13/wright/03wright.html.


http://www.pewinternet.org/2014/03/13/library-engagement-typology/.


