Libraries and access to open online courses

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Abstract
This article aims to raise consciousness about the value of massive open online courses (MOOCs) for learners who cannot afford the exorbitant cost of higher education. Massive Open Online Courses (MOOCs) is a relatively new method of education in the digital age. The courseware is inexpensive, and students can access the materials whenever and wherever they like. MOOCs can be broken down into three distinct types: cMOOCs, xMOOCs, and quasi-MOOCs. A MOOC is an online education programme that allows for an infinite number of participants. The course materials typically consist of videotaped lectures, assigned readings, quizzes, and tests, but students, instructors, and Teaching Assistants (TAs) also have access to discussion boards. Libraries today offer a wider variety of services, communicate with their patrons through more channels, and serve a more varied group of people than ever before. Libraries must vindicate their essential positions in society by maintaining unfettered access to knowledge. Free and open to a huge number of individuals, MOOCs are delivered over the Internet. Hence, libraries are regaining their status as academic hubs. Libraries and librarians can improve the utilization of library resources by supporting MOOCs and promoting the programmes at libraries more effectively than in other settings. While they offer numerous benefits, MOOCs present a number of obstacles related to issues like intellectual property, licensing, technology, data storage and control, etcetera.

Keywords: MOOCs, access, challenges, libraries, library and information professionals, ict

Introduction
Since education has been shown to be one of the most effective tools for sustainable development, massive open online courses (MOOCs) could be a useful tool for promoting research and bringing about such universal, high-quality education. Research, sustainable development, and universal access to education are all bolstered by the academic communication and technology made possible by massive open online courses (MOOCs). The United Nations has set a deadline of 2030 for all member countries to meet Sustainable Development Goal 4 (SDG4) for Quality Education, which includes encouraging lifelong learning. MOOCs level the playing field by making higher education and professional development available to those who might not otherwise have the means to pursue them because of financial constraints. According to UNESCO (2016), massive open online courses (MOOCs) have the potential to promote social inclusion through the democratization of access to higher education. Digitalization is widely recognized as a potentially game-changing trend in education, and MOOCs are highlighted in the Open University's "Innovation Pedagogy Report 2014" as one of the top 10 pedagogies with the potential to revolutionize the field. The widespread availability of high-quality education made possible by massive open online courses (MOOCs) has caused widespread disruption in the higher education industry and threatens the status quo of campus-based institutions.

The massive open online course (MOOC) has been through a roller coaster of praise and criticism during its formative years, from being heralded as the disruptive educational technology that will make education affordable and thus promote social inclusion (Yuan & Powell, 2013) to being the subject of
public debate and government interest (Kovanovi et al., 2015; Baker & Passmore, 2016). Experts and the media have suggested that MOOCs can revolutionize education in the 21st century by making education accessible to people all over the world. Several authors have used adjectives like "storming" (Cini, 2015), "unprecedented" (Schwartz, 2013), and "revolutionary" (Morrison, 2013) to describe the reception of MOOCs. Faculty, administrators, and librarians are already investigating this changing landscape because of its importance in making education more affordable and accessible. Given the unprecedented opportunities presented by the creation of open resources on a global scale, the educational system is undergoing gradual but ongoing change (Bell, 2010). Given the effects of the economic crisis on employability, MOOCs emerged as a solution to the poor or even the absence of adaptation of higher education to the issues of today’s society.

As a result, Open Course Ware gradually replaced eLearning. Due to the ever-changing nature of both knowledge and information and communication technologies, MOOCs may soon become the standard way of education, facilitating the speedy modification of course materials to meet emerging needs. More people would have access to education and learning innovations if they were made possible through the programme. They have the potential to making lifelong learning a reality by facilitating the upskilling and reskilling of students from all walks of life (Vassiliou, 2013). They accept more of diverse perspectives and innovative approaches to education and hence have the potential to be increasingly effective if they are generally recognized; yet, this is hampered by primarily two factors: quality and financial resources. That is to say, we now have the ideal conditions for implementing novel approaches to higher education. Thanks to the convergence of digital content and global connectivism. Consolidating new ideas in the education system requires not only the ability to avoid resistance to change, but also the support of institutions' ability to adapt to and grasp new issues in the education sector (Conrad, 2013). This article aims to raise consciousness about the value of massive open online courses (MOOCs) for learners who cannot afford the exorbitant cost of higher education. This article defines massive open online courses (MOOCs), compiles a list of MOOC providers, outlines best practices for developing MOOCs, describes key characteristics of MOOCs, discusses the difficulties information professionals face when enabling MOOCs, and offers suggestions for expanding access to these courses.

**MOOCs: Definition**

Jabe Cormier of UPEI coined the term "Massive Open Online Course." Massive open online courses (MOOCs) were pioneered in 2008 by Stephen Downes of the National Research Council of Canada and George Siemens of the Canadian Open University at Athabasca University, who took a chance and welcomed anyone with an Internet connection to enroll in their course on learning theory. The foundation of "open learning" that this effort laid out has been fruitful. Put another way, the "Downes-Siemens course has become a model for MOOCs and has advanced the recognition of online education as an acceptable form of instruction" (Becker, 2013). Massive open online courses (MOOCs) are an exciting new method of delivering educational content. Learners only need a computer and an Internet connection to enroll in MOOCs, and signing up takes mere minutes with a web-based e-mail ID. The four terms that make up the acronym MOOC—"massive," "open," "online," and "courses"—describe every aspect of these types of learning environments.

**Massive:** Larger numbers of students can enroll in a massive open online course than would be possible in a conventional classroom setting. It needs to be very large so that it can reach people all over the world, regardless of their age, where they live, what kind of education they have, etcetera.
Open: Allow learners to access materials without cost and make them accessible to anyone, anywhere in the world, with an Internet connection.

Online: The course and its materials have been developed with the expectation that they will be delivered via, or on, the Internet.

Courses are designed to facilitate learning and include tools and assessments to verify and validate students’ progress. These courses can be accessible at any time and from any location. Thanks to the videos, articles, games, social learning, quizzes, assignments, and other proprietary methods used to teach them (VKKM & Vellayutham, 2020).

An interesting insight into MOOCs is that they are:

- Massive; in terms of the number of students who enroll in them.
- Vacant; no formal requirements to apply
- Completely Online, Organized Course
- This is a web-based class that welcomes anyone interested in taking it. The 3 A’s, are "Anytime, Anyone, Anywhere," are central to the MOOC ethos.

Evolution of MOOCs
Massive Open Online Courses (MOOCs) emerged from the proliferation of open educational resources. The first such MOOC was "Connectivism and Connecting Knowledge," presented by George Siemens of Alaska University and Stephen Downes of the National Research Council in 2008. Twenty-five students took the course in person at Manitoba University in Canada, and another 2,300 watched it online (Siemens, 2017).

Types of MOOCs
- "Connectivism MOOCs" or "cMOOCs" for short Educating in a "networked education environment" through the Internet and online tools like social media, weblogs, online learning communities, etcetera. Courses offered through a CMOOC are focused on the students taking part.
- xMOOCs: xMOOCs are built on the foundation of conventional course materials and higher education teaching practices, such as the use of video lectures and quizzes for assessment. When it comes to xMOOCs, the focus is on the instructor.
- Quasi-MOOCs: This is based on open educational resources (OERs) found online that are not made to aid in learning-specific activities, lacks the community found in c-MOOCs.

The National Open University of Nigeria and MOOCs Programme
The National Open University of Nigeria's Open Educational Resources and Massive Open Online Courses programme was presented to the Nigerian government and other stakeholders in the public and private sectors at a seminar in Abuja, Nigeria, in December 2015. It was confirmed during this meeting that NOUN was well on its way to establishing an Open University based on Open Educational Resources and a unique haven for Massive Open Online Courses. At the event, attendees saw the first three courses being built as MOOCs and were shown a list of the first forty courses that had been correctly converted to OER by the school. Jansen et al. (2017) noted that NOUN has become the first associate partner from Africa and Asia for OpenupEd. They also announced a new portal (NOUN OER Portal) to house the courses. Noun MOOC anticipates a large portion of its customers to be disenfranchised youths who are unable to gain admission to universities not because they are unqualified but because of the few places available or the low carrying capacities of traditional universities. Table 1 highlights this tendency by comparing the number of applications to
Table 1: University Applicants and Admission Statistics (JAMB 2011–2015)

<table>
<thead>
<tr>
<th>Year</th>
<th>No. Applied</th>
<th>No. Admitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>1,300,000</td>
<td>300,000</td>
</tr>
<tr>
<td>2012</td>
<td>1,500,000</td>
<td>423,531</td>
</tr>
<tr>
<td>2013</td>
<td>1,600,000</td>
<td>417,341</td>
</tr>
<tr>
<td>2014</td>
<td>1,790,000</td>
<td>437,707</td>
</tr>
<tr>
<td>2015</td>
<td>1,610,000</td>
<td>485,338</td>
</tr>
</tbody>
</table>


Although there are many public and private institutions in Nigeria, Ikpe (2014) found that they were insufficient because they lacked the capacity to teach the large and expanding student body. The author claims that in the last three decades, both the number of students and the number of schools in the country have increased dramatically. He further noted that only about 20% of college applicants were ultimately accepted. Most people who are turned down do not necessarily lack the qualifications for the position; rather, are turned down because there are not enough slots available. Over a million people took the University Matriculation Examination (UME) in 2008, but only about 200,000 of them were offered a spot at a university. Statistics from the Joint Admission and Matriculation Board (JAMB) show that each year, only about 400,000 of the roughly 1.4 million qualified young Nigerians who pass the obligatory JAMB exam are able to be placed at a Nigerian university.

In order to get into one of the few available universities, many people have to wait for years. Since most of these potential students can make good use of MOOCs to increase their knowledge and abilities, their numbers are likely to decrease as a result of their debut. With better support, more MOOCs in relevant subjects might be established to serve this underserved section of society and anyone else who wants to join the conversation. Participants in the NOUN-MOOC may decide to continue their education at the National Open University of Nigeria and enroll in one of the traditional degree programmes.

Benefits of Massive Open Online Courses (MOOCs)

Numerous benefits, such as those stated below (NOUN OER, UNESCO, and EU, 2015), have been attributed to taking advantage of MOOCs.

- Facilitating the dissemination of information by making it available to anyone and everyone
- Facilitates communication between children attending various schools.
- Support for lifelong learning
- Increasing access to higher education for people who do not fit the standard student profile
• Providing internet-enabled, self-directed students with access to the resources and opportunities of some of the world’s greatest universities (Siemens, 2017).
• Subject-independent: Separate classes, individual options
• Anytime, anyplace: There is no restriction on location or time, and the learning is done in an asynchronous fashion with multimedia additions.
• Courses bolstered by media and technology include video, animation, quizzes, simulation, and more.
• Encouraging innovative approaches to education.

Disadvantages of MOOCs
The disadvantages of MOOCs include a higher drop-out rate (90%) and a lower completion rate (10%) among students, difficulty for instructors in meeting the needs of a wide range of students in a single class, and less value placed on MOOCs by employers.
Okafor et al. (2016) provides a more comprehensive list of these difficulties, which includes but is not limited to: insufficient internet connectivity; a high dropout rate; an "ivory tower" mentality; connectivity problems; insufficient government policy; and a lack of computer access.

Features of MOOCs
Highlights of massive open online courses include:
• Anyone, anywhere on the globe, is free to enroll in this class.
• MOOCs are an innovative pedagogical paradigm that makes open online education available without financial barriers.
• Courses may accommodate an unlimited number of students due to their modular structure.
• Learners have the flexibility to study wherever and whenever they like, focusing on topics that most interest them.
• Interaction Mode: Facilitates discussions and group projects in the classroom.
• Adaptability: Students can set their own goals, schedules, and priorities for their studies.
• Blended learning, when traditional classroom time is supplemented by independent online study (Siemens, 2017).

Table 2: Classroom versus e-Learning: Different Environments and Preparation

<table>
<thead>
<tr>
<th>Num.</th>
<th>In Classroom</th>
<th>At e-Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lecture on a topic</td>
<td>Write the lecture notes on MS Word or any other Word Processing Software</td>
</tr>
<tr>
<td>2</td>
<td>Explain lecture through presentation</td>
<td>Explain the above-mentioned lecture in PPT, if content writer is not able to give his/her voice</td>
</tr>
<tr>
<td>3</td>
<td>Examine students (Quiz)</td>
<td>Prepare questions in PPT/Word file: Objective types, false/true statements, etcetera. with right answer</td>
</tr>
<tr>
<td>4</td>
<td>Motivate and guide students to learn more from various sources</td>
<td>Identify source for further reading (books, articles, web resources, etcetera. and provide glossary</td>
</tr>
</tbody>
</table>

Source: Adapted from Suchita Lade, 2021.

MOOCs and Academic Libraries
There is a significant opportunity for academic libraries to support massive open online courses (MOOCs) in higher education.

Libraries could play a number of important functions in massive open online courses (MOOCs), including creation, maintenance, assembly, instruction, and preservation.
Therefore, a library's capacity to accommodate massive open online courses (MOOCs) is completely open.

**Challenges for Information Professionals in Facilitating MOOCs**

As the popularity of MOOCs continues to expand, academic libraries will face new difficulties and opportunities. Since they work at the crossroads of technology and pedagogy, academic librarians are well positioned to meet these difficulties head-on. This requires an awareness of the larger implications and effects that technology has on education. Since MOOCs present information professionals with a new opportunity to influence the direction of higher education, libraries should become involved in the university's support team to monitor MOOC creation (Kendrick & Gashurov, 2013). Librarians can contribute to MOOCs in numerous ways, including the collection of open educational resources, assistance with information management, and the instruction of information literacy skills. As massive open online courses (MOOCs) gain popularity, librarians will face a number of new issues (Gore, 2014).

**Copyright and Intellectual Property Rights Issues**

The large number of students means that there is a greater chance of copyright and other intellectual property rights violations in MOOCs. Librarians are in the best position to raise knowledge about copyright, fair use, plagiarism, licensing, and IP concerns. Librarians must strike a balance between legal requirements and the needs of their patrons. Therefore, as MOOCs develop, librarians may be tasked with figuring out how to give MOOC students all over the world access to legally protected and sanctioned online materials.

**Licensing**

Since their inception, libraries have been dedicated to serving the information needs of students. In order to restrict access and increase security on the Internet, libraries need to implement new technologies for managing and monitoring patrons’ use of library materials. Libraries typically allow in-person access to their collections but limit patrons' ability to use those collections remotely. Therefore, libraries need to create a new licensing strategy that allows them to release their resources to the MOOC platform without risk.

**Technology Assistance**

Librarians will always be available to assist users with technology. To deliver their courses, MOOCs rely on their own proprietary technology and infrastructure. To ensure that students have access to the materials they need to succeed in the course, librarians and other library professionals should collaborate with instructors to identify which materials will be covered and how they can be accessed electronically.

**Instructional Support**

In addition to providing resources for thousands of students enrolled in massive open online courses (MOOCs), librarians, who are now assuming greater instructional roles, may be relied upon to assist faculty members in teaching these courses.

**Data storage and control**

Librarians have a window of opportunity to plan for the long-term storage of MOOC materials before the sheer volume of materials becomes unmanageable. In order to limit user access and increase online security, it is crucial to investigate and implement systems that can regulate and monitor MOOCs' use of library resource.

**Delivering Remote Services**
Due to time zone differences, students may have access to the site and its resources around the clock (and may even submit questions or requests for help at inconvenient times). Ethical considerations should be factored into how students find, analyze, and remix educational materials. Although the library in question may be able to address this issue once enrolled students have begun taking advantage of its services, it is vital to keep in mind that the number of MOOC learners may exceed tens of thousands.

**Influencing Faculties**

For librarians to successfully encourage and support academics in MOOC development, they will need to overcome substantial challenges. The development of massive open online courses (MOOCs) relies heavily on student-professor interaction, and it is commonly accepted that libraries should take the lead on matters such as copyright, licensing, digitalization, and information literacy.

<table>
<thead>
<tr>
<th>Num.</th>
<th>Provider</th>
<th>Type</th>
<th>Headquarters</th>
<th>Founded</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ALISON</td>
<td>Commercial</td>
<td>Ireland</td>
<td>2007</td>
</tr>
<tr>
<td>2</td>
<td>Canvas network</td>
<td>Commercial</td>
<td>USA</td>
<td>2008</td>
</tr>
<tr>
<td>3</td>
<td>Coursera</td>
<td>Commercial</td>
<td>USA</td>
<td>2012</td>
</tr>
<tr>
<td>4</td>
<td>Coursmos</td>
<td>Commercial</td>
<td>USA</td>
<td>2014</td>
</tr>
<tr>
<td>5</td>
<td>edX</td>
<td>Non-profit</td>
<td>USA</td>
<td>2012</td>
</tr>
<tr>
<td>6</td>
<td>Eliademy</td>
<td>Commercial</td>
<td>Finland</td>
<td>2012</td>
</tr>
<tr>
<td>7</td>
<td>FutureLearn[1][2]</td>
<td>Commercial</td>
<td>UK</td>
<td>2012</td>
</tr>
<tr>
<td>9</td>
<td>Kadenze</td>
<td>Commercial</td>
<td>USA</td>
<td>2015</td>
</tr>
<tr>
<td>10</td>
<td>Khan Academy</td>
<td>Non-profit</td>
<td>USA</td>
<td>2006</td>
</tr>
<tr>
<td>11</td>
<td>Lynda.com</td>
<td>Commercial</td>
<td>USA</td>
<td>1995</td>
</tr>
<tr>
<td>12</td>
<td>NPTEL</td>
<td>Non-profit</td>
<td>India</td>
<td>2015</td>
</tr>
<tr>
<td>14</td>
<td>openHPI[6][7]</td>
<td>N/A</td>
<td>Germany</td>
<td>2012</td>
</tr>
<tr>
<td>16</td>
<td>Open2Study[9][10]</td>
<td>Commercial</td>
<td>Australia</td>
<td>2013</td>
</tr>
<tr>
<td>17</td>
<td>Peer to Peer University</td>
<td>Non-profit</td>
<td>USA</td>
<td>2009</td>
</tr>
<tr>
<td>18</td>
<td>POLHN</td>
<td>Non-profit</td>
<td>Western Pacific Region</td>
<td>2005</td>
</tr>
<tr>
<td>19</td>
<td>Shaw Academy</td>
<td>Commercial</td>
<td>Ireland</td>
<td>2013</td>
</tr>
<tr>
<td>20</td>
<td>Stanford Online</td>
<td>Non-profit</td>
<td>USA</td>
<td>2006</td>
</tr>
<tr>
<td>21</td>
<td>SWAYAM</td>
<td>Non-profit</td>
<td>India</td>
<td>2015</td>
</tr>
<tr>
<td>22</td>
<td>Udacity</td>
<td>Commercial</td>
<td>USA</td>
<td>2012</td>
</tr>
<tr>
<td>23</td>
<td>Udemy</td>
<td>Commercial</td>
<td>USA</td>
<td>2010</td>
</tr>
<tr>
<td>24</td>
<td>WizIQ</td>
<td>Commercial</td>
<td>India/USA</td>
<td>2007</td>
</tr>
</tbody>
</table>

**Source:** Adapted from Vijaykumar, 2019

**Guidelines for the Creation of MOOCs**

The following eight principles for the design and development of online courses (Jorge, Dopper, & Van Valkenburg, 2015) are worth considering enhancing and analyzing the quality of online courses. With these guidelines in mind, the learning process for the learner should be:

- Able to adapt to changes (in time, location, and subject matter)
- Varied (in terms of methodology, materials used, and results obtained)
Accessible to all people of all backgrounds and genders
Constructive (instructions and comments).
Active (learning by doing) • Interactive (student, instructor, material)
Applied to the real world (situations, difficulties, etc.)
Inventive (uses novel methods, approaches, and ideas)

The course team uses the Online Learning Experience (OLE) model to encourage introspection before the course begins and to review and plan for future changes once the course has been concluded.

The concept of MOOCs has the potential to significantly expand access to higher education around the world. That’s a paradigm shift in the current situation, and it’ll have an effect on schools all around the world. Commonly known as "MOOCs," "xMOOCs," and "Quasi MOOCs," these online courses come in a few different flavours.

Conclusion
In order to keep up with the rapidly evolving educational landscape, academic libraries must work in tandem with cutting-edge technological developments. Many people, including students and working professionals, have turned to MOOCs in recent years as a way to expand their horizons and improve their education. As the number of massive open online courses (MOOCs) provided by institutions continues to rise, academic librarians will need to become increasingly involved in both the creation and distribution of these courses. To counteract this risk, libraries must go above and beyond their traditional functions by adapting to and integrating with current technological infrastructure and emerging fashions. To accomplish these lofty goals, librarians will need to keep up with technological changes and be aware of the risks that come along with them. Therefore, libraries contemplating hosting a MOOC platform should be cognizant of the possibilities presented by this innovative educational setting.

The following are recommended for improvement:

1. Nigeria's government should deploy massive open online courses to combat the country's high rate of illiteracy and its lackluster science and technology infrastructure.
2. The government should address accreditation and the perceived value of certificates from MOOC-based training.

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groups at the national open university of Nigeria.


