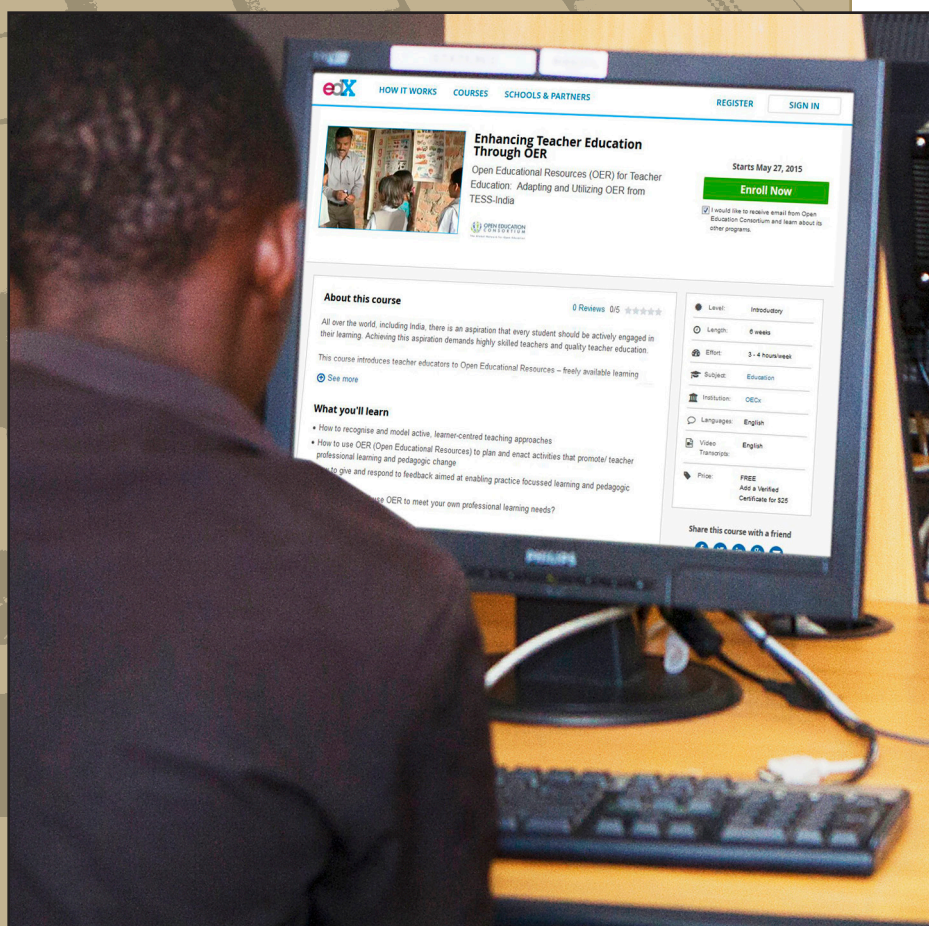




COMMONWEALTH of LEARNING

A POLICY BRIEF ON

MOOCs



May 2015

A Policy Brief on MOOCs

**Authors: David Porter (Simon Fraser University, Canada) and
Russell Beale (University of Birmingham, UK)**

**Reviewers: Sir John Daniel (Former President of COL),
Rory McGreal (Athabasca University, Canada),
T V Prabhakar (Indian Institute of Technology, Kanpur, India)**

The Commonwealth of Learning (COL) is an intergovernmental organisation created by Commonwealth Heads of Government to promote the development and sharing of open learning and distance education knowledge, resources and technologies.



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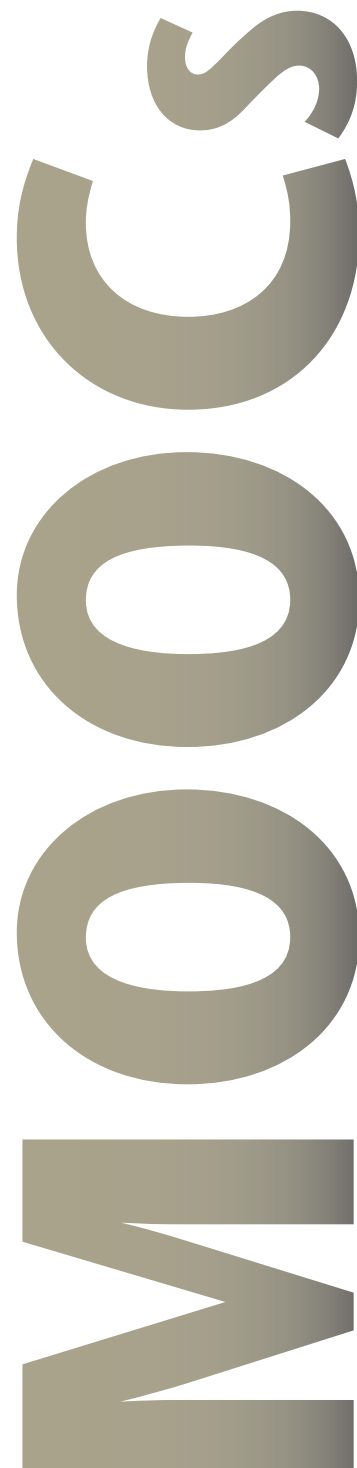
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A POLICY BRIEF ON

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A MOOC (massive open online course) is an online course that normally requires no prior qualifications for entry, can be accessed by anyone who has an Internet connection, and includes large or very large numbers of learners (generally 1,000 or more); scalability is its distinguishing aspect. In addition, a learner must use a laptop or desktop computer, a tablet computer or a smartphone to gain access to a MOOC. To date, typical learners in a MOOC are individuals with an existing degree, often middle-class professionals. MOOC users also are often below 30 years of age. However, MOOCs have a wide reach, with different courses appealing to very different demographics.

MOOCs are created using web technologies and often include data analytics. Different MOOC designs are used to put these components together in unique ways. The level of technological integration can be quite sophisticated and requires significant investments in software development. However, MOOCs are not all presented in the same manner, and they also can differ in terms of their primary instructional strategy or learning design. MOOCs are usually subject to institutional quality review processes, and the leading MOOC platform providers have also established quality assurance protocols for their partners. Learners themselves are becoming proactive in exchanging information about the quality of student experiences in MOOCs, through blogs and auto-ethnographies of their practices within MOOCs.

Revenue generation—either for investors or to sustain operations—is a key motivation for the USA-based MOOC proponents (Coursera and Udacity). The activities of the UK's FutureLearn are viewed as contributing to meeting the service obligations of public institutions, as is the case with Xuetangx (China) or Swayam (India). In Brazil, Kroton, a for-profit company, is a MOOC leader and uses a network of learning centres as a key component of its large-scale delivery model.



Policy implications and recommendations

Access

MOOCs can provide access to quality learning opportunities at low costs. Governments and institutions may consider investing in MOOCs to democratise education for all.

Capacity Building

Harness MOOCs to provide new ways to offer opportunities at scale for capacity building, education and skills development.

Innovation

Foster innovative uses of available and appropriate technologies, such as mobile devices, to deliver MOOCs.

Pedagogy

The richness of MOOCs derives from their being essentially an Internet-based technology. To improve learning outcomes, governments and institutions should promote the use of the alternative pedagogical approaches enabled by MOOC technology.

Quality

Integrate MOOCs within national quality assurance frameworks to enable the recognition and accreditation of qualifications.



introduction

The concept of massive open online courses (MOOCs) has been hailed as a disruptive change in higher education practice, as it is based on the idea of making educational experiences from well-known universities freely available at scale. The core idea is the provision of higher education courses to anyone with Internet access and the personal motivation to (i) participate in learning activities that are delivered in short video segments supplemented with online tutorials, and then (ii) be assessed using automated online self-evaluation exercises and summative quizzes and tests. Khan Academy (www.khanacademy.org) popularised the use of the short video lesson format for K–12 education tutorials, while universities such as MIT and

Stanford have demonstrated similar approaches for a higher-education audience. What remains to be determined is whether MOOCs can be further scaled and sustained beyond the initial experiments.

What remains to be determined is whether MOOCs can be further scaled and sustained beyond the initial experiments.

The term MOOC was coined in Canada in 2008 by Dave Cormier of the University of Prince Edward Island (UPEI). The original MOOCs were online courses promoted by proponents of open educational resources (OER), for the free dissemination of educational resources, using learning designs that connected teachers and learners in networked environments. George Siemens (2008) and Stephen Downes (2006) led a course called *Connectivism and Connective Knowledge* (also known as CCK08), in which 25 tuition-paying students at the

University of Manitoba, as well as over 2,200 online students from the general public who paid nothing, participated in the online course.

The MOOC concept became more widely known through international media coverage of later offerings of online courses from Stanford and MIT, which attracted hundreds of thousands of learners, from almost every country. However, MOOC remains a loosely defined term with key qualities: M=massive, O=open (i.e., accessible—as in freely available and discoverable), O=online, C=course. Each term has been subjected to varied interpretations since the inception of MOOC experiments and discussions. The least ambiguous term is “online.” A learner must use a laptop, desktop or tablet computer or a smartphone to gain access to a MOOC.

For our purposes, we can consider a MOOC to be an online course that requires no prior qualifications for entry, can be accessed by anyone who has an Internet connection, and includes large or very large numbers of learners. These MOOC participants experience a course with various combinations of content, activities, peertopeer interactions, mentor interactions and tests. If participants fulfill certain basic criteria related to performance, they often receive acknowledgement in the form of digital badges or certificates.

How does a MOOC differ from an online course?

A MOOC should be able to accommodate a large or very large number of learners compared to what is possible in a typical university classroom or online course. A MOOC also requires significant investment in infrastructure and support processes to scale. An online course will not necessarily be built that way. Scalability is the distinctive feature that makes a MOOC different from a conventional online course.

Open universities that offer online courses often include personalised feedback and assessment as part of the offering. In a MOOC, personalised feedback ordinarily is not expected—another difference between conventional online learning and MOOCs. A further difference tends to be price. MOOCs are (mostly) free, whereas online courses are (mostly) paid for as part of a student's programme of instruction through an institution's programme or course registration fees.

Who are the learners?

According to a 2014 report by Hollands and Tirthali, typical learners in a MOOC are young—under 30 if from a developing country. In addition, almost 90 per cent are degree holders; up to 40 per cent have master's degrees, and about five per cent have doctoral degrees. A primary motivation for participating is to gain additional skills and a better job.

We should note that this 2014 snapshot of learner demographics reflects the historical development of MOOCs, from universities with a reputation for technological innovation that were easily able to attract young professionals to their online offerings. However, MOOCs have the potential to reach and meet the needs of a wide demographic by catering to the academic, professional and/or skills-training needs of learners at all stages of their educational development.





Why would institutions or countries offer MOOCs?

motivation

According to Hollands and Tirthali (2014, p. 7), the primary motivations for designing and delivering a MOOC experience for learners include these factors:

- Extending the reach of the institution and access to education
- Building and maintaining institutional brand
- Improving economics by lowering costs or increasing revenues
- Improving educational outcomes for both MOOC participants and on-campus students
- Exploring innovative practices for teaching and learning
- Conducting research on teaching and learning

Jansen and Schuwer (2015, p. 4) add the following institutional motivations:

- Improving the quality of on-campus offerings
- Contributing to the transition to more flexible and online education practices
- Improving teaching and learning practices through focused instructional practices

The marketing aspects of large-scale course offerings, along with explorations of new and innovative educational practices, tend to be the primary drivers of the MOOC trend. Cost savings and economic benefits have also been stated as motivators; however, these factors have yet to be widely demonstrated in practice. Often the personal profile and career benefits to the individual academics who design and offer a MOOC are motivators. For institutions, there are also benefits in a wider public-engagement agenda. Some are participating because it is a potentially disruptive technology with an unclear future, and they want to both be a part of it and understand it; engagement can thus be a risk-mitigation exercise.

What are the different types of MOOCs?

MOOCs share a common goal of bringing together large numbers of learners in a common environment for a course delivered as a set of online lessons. However, not all MOOCs are presented in the same manner, and they often differ in terms of their primary instructional strategy or learning design.

Some MOOCs use a traditional lecture format but substitute video lectures for the face-to-face lecture components of a course, and provide automated exercises and quizzes, along with opportunities to interact with fellow students—and with the course instructors—using discussion boards or chat functions.

xMOOC

This style of MOOC has been referred to as an xMOOC and is characterised by the offerings from MOOC providers such as Coursera and Udacity and their university partners. These MOOCs tend to use custom-designed technical platforms, scheduled learning events and proprietary learning resources. They are intended for large-scale course delivery.

Another model of design—termed cMOOC—uses constructivist or connectivist pedagogies (Siemens, 2008), wherein learners are encouraged to build their own knowledge through social learning processes within flexible timeframes and guided by course instructors, and often using OER. It has been argued that the pedagogy of xMOOCs is better suited to learning domain knowledge that can be mastered through repetitive practice, whereas cMOOCs may be more effective for allowing learners to acquire higher-order creative skills (Bates, 2012).

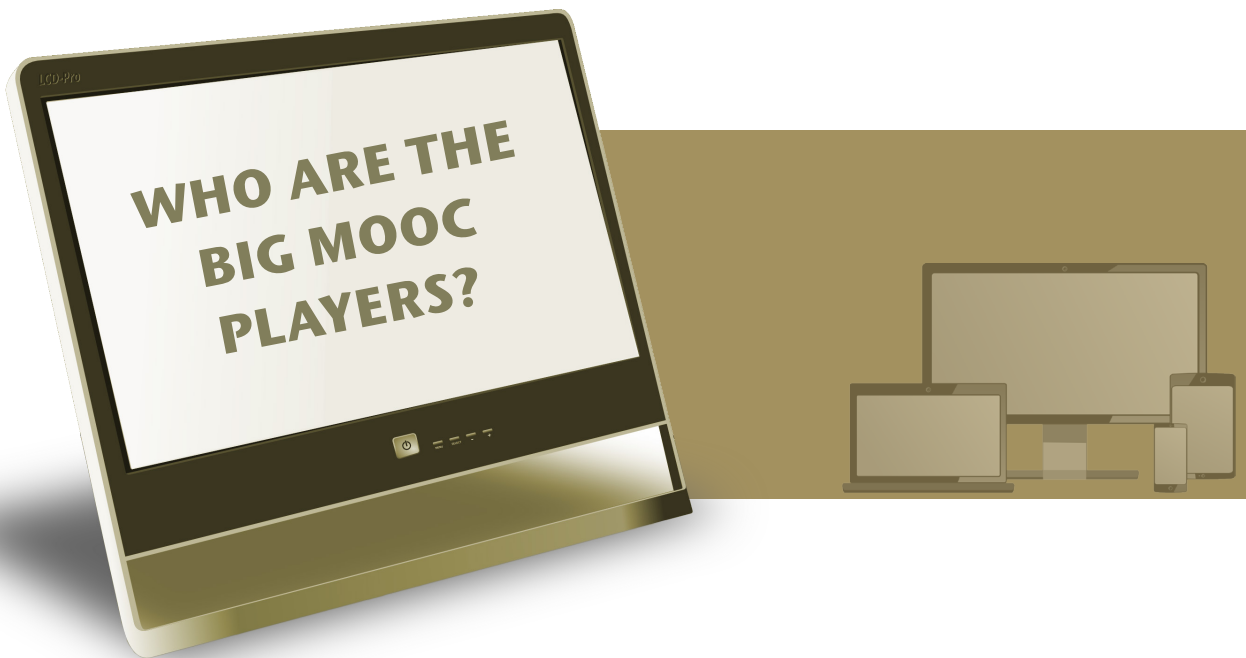
cMOOC

There are also hybrid design models, such as those used by MIT and Harvard, that use the edX open-source technical platform. edX combines many of the key features of an xMOOC course delivery format and uses OER.

Other types of hybrid MOOC designs have also been explored. The European Union (EU) has project-based MOOCs, or pMOOCs (Open Learning Design Studio, 2012), and Canada offers LOOCs (BCcampus, 2013), local open online courses that aim to attract large numbers of students to a course structured around locally relevant subjects.

pMOOC
LOOC

MOOC clubs (like book clubs) are also emerging, organised by public libraries as a way to build communities of knowledge through collaborative learning and discussions, using a MOOC as the subject matter (North Vancouver District Public Library, 2015). This approach might prove particularly valuable in the developing world, where adopting a learning centre approach could remove some connectivity barriers for end users and might also support local customs around the centralised dissemination of knowledge.



Well-known MOOC providers include corporate entities and consortia that involve university partners. Notable examples of this style of provider (Hollands & Tirthali, 2014) are:

- UK: FutureLearn
- USA: Coursera, edX, Udacity

Other prominent providers (Hollands & Tirthali, 2014), including more recent entities, are:

- Australia: Open2Study and various university-created MOOCs
- Brazil: Unopar (operated by Kroton, a for-profit company)
- China: XuetangX
- Germany: iversity
- India: Swayam
- Japan: jMOOC, from the Open University of Japan
- Malaysian universities (<https://www.openlearning.com/malaysiamoocs>)
- New Zealand universities

What are their business models?

A Universities UK report (2013) provides a summary of the business models of Coursera, edX, FutureLearn and Udacity and points out some of the differences between three USA-based MOOC players and an EU-based one.

Revenue generation for investors or to sustain operations is a key motivation for the USA-based MOOC proponents. Backend services, such as design, consultancy, analytics and recruitment, are also seen as business opportunities. Exams, certificates and credentials, as well as course licensing, are also considered revenue opportunities.

The activities of FutureLearn, from the UK, are currently viewed as contributing to the service obligations of public institutions. The recruitment of international students through MOOCs is also thought to be a motive—it is a potential revenue stream, but the magnitude of this revenue stream is as yet unclear. To date, The Open University (UK) has

seen an eight per cent return on its provision of free media (not all of which are MOOCs), through subsequent course registrations (Uvalić-Trumbić & Daniel, 2014). The following table provides a snapshot of the business models for four MOOC platforms, based on the Universities UK analysis (2013, pp. 8–9).

MOOC PROVIDER	BUSINESS MODEL
Coursera (USA)	Private, for-profit start-up funded by investment from venture capital firms, with an initial estimated investment of USD 22 million. Equity investment from some university partners. Depending on the lifetime of the course, between six and 15 per cent of revenue generated by Coursera is to be shared with the university, plus 20 per cent of gross profits from all courses provided by the university. Partner institutions can use the course management system for internal courses for no charge.
edX (USA)	Not-for-profit enterprise owned and funded by MIT and Harvard, committing to USD 60 million investment. Contribution of technology platform by Berkeley. Additional philanthropic support, including funding from the Bill & Melinda Gates Foundation. Option of equity investment by partner institutions. Two types of arrangements: (i) cash payment of USD 250,000 for edX to put courses onto platform, with no less than 70 per cent of gross revenue; (ii) a self-service model, with shared revenue of up to 50 per cent after edX receives the first USD 50,000. Online course platform made available as open source.
FutureLearn (UK)	Third-party, for-profit enterprise owned and funded by The Open University. No up-front costs to institutions. Contribution in kind by partner institutions to develop courses. Revenue from exams, certificates and corporate courses is shared with partners.
Udacity (USA)	For-profit enterprise supported by venture capital firms. Estimated outside funding of USD 21 million.

Business models for MOOCs vary from extensions of existing university practice to for-profit models conducted through enterprises in the private–public partnership mode. However, for universities and other public educational institutions, the lesson from MOOCs may require a complete rethink, as noted by Daniel (2012, p. 1):

The competition inherent in the gadarene rush to offer MOOCs will create a sea change by obliging participating institutions to revisit their missions and focus on teaching quality and students as never before. It could also create a welcome deflationary trend in the costs of higher education.

In Brazil, it appears that MOOCs have become an enterprise model operated by Kroton, a large educational technology company that offers online courses through its Unopar online university (Gaskell, 2014). Kroton has these key features:

- For-profit enterprise model spanning the country of Brazil
- Online courses delivered by teachers with “huge reputations”
- Weekly get-togethers at hundreds of local learning centres, where students watch a broadcast and engage in discussions
- Buying power of the parent corporation lowers materials costs for learners
- Curriculum promotes employability

How do institutions create or participate in a MOOC?

Institutions can create or participate in a MOOC in several ways. They can:

- use a third-party MOOC platform (such as Coursera or edX) to create and host the MOOC;
- use a locally available learning management system, in association with consumer Internet services (such as YouTube for video streaming, along with Facebook, Twitter and bookmarking services for peer discussions);
- use their existing eLearning platforms with MOOC-like extensions (e.g., Canvas);
- use hosted MOOC delivery services, such as Canvas or Sakai, in association with consumer Internet services;
- build their own MOOC platforms;
- develop bridge services locally to help learners gain access to courses from known MOOC providers (e.g., China MOOC College, at Guokr.com)

How are MOOCs delivered?

It is practical to view a MOOC as an “event” that happens within a specified time frame and requires significant media components as part of the delivery model. Advance planning is essential for a successful MOOC development and delivery process.

Key steps include:

Researching the market to gauge audience interest

- Determining marketing channels
- Testing the MOOC platform
- Developing content, media, activities and assessments, based on a learning design
- Producing the content, then annotating and tagging it for discoverability
- Training faculty for video delivery
- Training the support team for online mentoring and learner support
- Publicising the MOOC



Aside from the proposed business models and potential revenue-generation opportunities associated with MOOCs, there are costs and benefits associated with the practice.

Costs

- MOOC platform acquisition, development or partnerships
- Course development, including materials, assessment and delivery
- Staff (re)training

Benefits

The institution's reach is increased through MOOC activities, and access to it is improved through marginal or incremental costs, at a lower rate compared to conventional expansions of building, faculty and staff.

- MOOCs can be a part of universities' service mission, enabling them to contribute to the professional development and continuing personal education of learners (more so than simply by offering additional higher-education degrees).
- MOOCs provide an opportunity to design, implement and evaluate new learning innovations in parallel with the day-to-day working of the institution.
- MOOCs can enhance the reputations of the participating educators and institutions.
- Researchers can benefit from being in contact with a large number of potential "subjects."
- The public can engage with the research and development activities taking place within the university, fulfilling another aspect of the institution's service mission.

Actual delivery over the duration of the MOOC calls for a relatively lower order of effort compared to the preparation phase, especially in courses that are primarily video-based and have automated grading systems. A course team is usually necessary, and instructors in charge need to be subject-matter experts who can facilitate a learner support team containing varied skills and expertise. In socially engaged courses, course delivery has an intensity and depth that often requires a higher level of ongoing input from the course team.



QUALITY ASSURANCE IN MOOCs

The open and distance learning sector helped millions of people obtain degrees well before the advent of MOOCs. This sector has built well-established practices for quality assurance, accreditation, student authentication and management. With suitable adaptations, the emerging MOOC paradigm can take advantage of this experience and these practices. FutureLearn is an exemplar in this regard.

As might be expected from universities and enterprise partners, MOOCs are designed using frameworks for curriculum development similar to those within mainstream academic operations. Learning outcomes and assessments are fundamental components of instructional design, as are the activities and instructional resources that bring life to a learning experience.

Similarly, MOOCs are subject to institutional quality review processes, and the leading xMOOC platform providers have also established quality assurance protocols for their partners. cMOOCs have typically arisen from within institutions and are generally subject to internal review processes. In some cases, cMOOC initiatives are experimental and are used to test and evaluate new instructional design and delivery processes, often incorporating social media and distributed discussions, or even the co-creation of curriculum and content through contributions from participants.

Learners themselves are becoming proactive in exchanging information about the quality of student experiences in MOOCs, through personal accounts of their practices within MOOCs. These narratives are increasingly appearing in blogs and social media outlets, often during the course of MOOC delivery and sometimes inviting additional participation in what is perceived to be a good experience in the moment.

Because of the reach and immediacy of social media, the reverse scenario can also come into play, wherein negative reactions to MOOCs in progress or issues arising from them quickly become widely known, sometimes forcing MOOC providers to halt or quickly revise the offering.



MOOCs can provide new opportunities to extend the reach of institutions, and many institutions are experimenting with the MOOC format to increase their visibility to learners worldwide. They have the potential to lift millions of people out of poverty and to provide substantial intellectual resources to address pressing global issues.

MOOCs for development (MOOC4D) are MOOCs oriented towards learners with modest exposure to online practices. MOOC4D focus on topics and issues that have near-term impact in the context of sustainable development, and they remove entry barriers so that developing-country academics and institutions can offer large-scale online courses.

MOOC4D offerings include technology options that work within low bandwidth scenarios in developing countries and provide offline-learning possibilities that are not unduly affected by local network conditions. With partners in Africa and Asia, the Commonwealth of Learning has offered six such courses in 2013–2015. These have been evaluated by external experts as well as learners and have received excellent reviews.

In developing countries, MOOCs offer a new way of providing cost-effective, structured guidance and information around socially critical topics such as health, education and political governance, as well as others with similar social relevance.

Furthermore, MOOCs offer a way of connecting with a portion of a community or country, and so can be used for research, for the assessment of opinions or policy, and for the collection and preservation of local or indigenous knowledge.

For learners with Internet access who are situated in a small state of the Commonwealth, learning opportunities provided by institutions at a distance are becoming increasingly available. Online learning is possible for personal growth or to provide skills for employment. Self-directed study can also be provided at individual and collective levels. The Virtual University for Small States of the Commonwealth could provide regionally based platforms for MOOCs or online exam systems to address non-formal training for personal or skills development in workplaces, or for credit-based academic upgrading or credential-based programmes of study for those pursuing an academic pathway.

With partners in Africa and Asia, the Commonwealth of Learning has offered six such courses in 2013–2015.

MOOCs can provide small businesses or national enterprises with courses designed to upgrade the skills of managers and line supervisors, especially in the service sector, where short courses focused on single topics can deliver immediate or situation-relevant learning in the workplace. MOOCs can also help in the continuing education of government staff in specific subject areas, and in the event of changes in policies and practices within government departments or agencies. A MOOC format has the potential to provide verifiable course delivery to all staff.

While wholly technical solutions for training, certification and accreditation might not be feasible in the immediate term, the management of certification using large-scale technical systems might be a solution for specific cases. As an example, Nigeria used a biometric identification system with 1.4 million students in March 2015 to administer computer-based tests at exam centres across the country (Fatunde, 2015):

The Joint Admissions and Matriculation Board or JAMB, the sole agency mandated to conduct entrance examinations for universities in Nigeria, has held its first computer-based tests for more than 1.4 million candidates at some 400 information and communications technology, or ICT, centres country-wide.

The new online exam is a revolutionary departure from the paper-pencil test and dual-based test of before. Of course, the innovation was introduced with some glitches as well as advantages, but Nigerians have by and large accepted the computer-based exam.



A recap of the recommendations

access

MOOCs can provide access to quality learning opportunities at low costs. Governments and institutions may consider investing in MOOCs to democratise education for all.

capacity building

Harness MOOCs to provide new ways to offer opportunities at scale for capacity building, education and skills development.

innovation

Foster innovative uses of available and appropriate technologies, such as mobile devices, to deliver MOOCs.

pedagogy

The richness of MOOCs derives from their being essentially an Internet-based technology. Governments and institutions should promote the use of the alternative pedagogical approaches enabled by MOOC technology to improve learning outcomes.

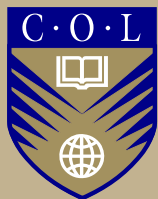
quality

Integrate MOOCs within national quality assurance frameworks to enable the recognition and accreditation of qualifications.

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4710 Kingsway, Suite 2500
Burnaby, BC V5H 4M2
Canada

Tel: +1.604.775.8200
Fax: +1.604.775.8210
E-mail: info@col.org
Web: www.col.org

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