Mapping five O's for reaping benefits from massive open online courses

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Abstract: Massive Open Online Courses (MOOCs) have catalyzed debates that reflect optimism and threat. Opening up more access to higher education resources and the monopoly on higher education have emerged in the related literature as potential outcomes of MOOCs. In this position paper, I discuss how governments, accreditation bodies, higher education institutions, academics, and students in under-resourced settings can maximize benefits from the MOOC model. I argue that MOOCs should not be contrasted to other higher education modes as belligerents in a zero-sum game. Instead, MOOCs and others modes of learning can be used as allies in a campaign to open up higher education to greater numbers of learners around the world. Openly licensed courses, open assessment, open competency-based certification and accreditation, as well as open education policies, can contribute to this inclusion if the target learners' socio-economic and educational settings are taken into consideration. The paper concludes with some suggestions for various stakeholders in higher education who are trying to find a niche for engaging in MOOC practices in order to expand their educational impact in their respective communities and societies.

Key Words: *MOOCs, open education policies, open assessment, open certification, open accreditation*

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Introduction

The development of information and communication technologies has recently led to a mushrooming and popularity of Massive Open Online Courses (MOOCs). These courses emerged in Canada in 2008 and boomed 2011. Early MOOCs were less restrictive and relied on connectivist principles (Siemens, 2005, para. 1) which emphasize a diversity of opinions, the possibility to learn from both people and non-human appliances, continuing learning and learner's decision making. With the 2011 offering of *Artificial Intelligence, Machine Learning* and *Introduction to Databases* at Stanford University, MOOCs bifurcated into two branches: Connectivist MOOCs (cMOOCs) and Extension MOOCs (xMOOCs) that aimed at expanding higher education beyond institutional frontiers. The latter category gained more attention due to the exponential development of xMOOCs, their reliance on didactic pedagogy and massive enrolment of learners from around the world. In a period of only two years, xMOOCs developed to become almost a global phenomenon.

MOOC platforms have emerged in all continents except Africa, but educational stakeholders on this continent are also engaged in MOOCs practices, either as students or experimenters. This paper discusses a diversity of learning settings, acceptance and concerns on MOOCs, MOOCs in educational debates, licenses in MOOCs and how stakeholders in higher education can gain the most from MOOCs.

A diversity of learning settings and the potentials of the MOOC model

Learning is typically a social enterprise based on interaction of the learner with peers and teachers. In addition to learner-peer and learner-teacher interactions, Moore (1989) adds that learning is also learner-content interaction. These three types of interaction are the basis of Anderson's (2003) interactivity theorem in which he argues that meaningful learning occurs as long as one of them is maximized. This argument is vehemently rejected by those who argue that teaching is an essential enabler of learning and those who see interaction between humans as indispensable in learning.

However, not all learning settings offer the presence of a teacher and peers to interact with. In Rwanda, for instance, some learners engage in self-teaching of courses normally taught in the last three years of formal secondary education in order to compete for higher education student loans by meeting the same standards as formal secondary education finalists. These non-formal learners borrow and copy, by hand, notes from students who have completed secondary education in the fields that were privileged in awarding student loans. Then, after studying the notes, they enrol in the national exams as non-formal learners, take the same exams as formal students and score above the cut-off point for student loan. Embarking on individual learning helps some of these self-determined learners win higher education opportunities that they would not get if they waited for the availability of teachers or peers.

This does not mean, however, that the non-formal learners would not have appreciated having a peer to learn with or even having a teacher to teach them. They simply could not find a teacher and a peer in their remote learning settings or they could not afford to pay a teacher. Some cases of such self-determined learning and resulting

successes are being investigated. For those learners and educators who testified to their development, education is not exclusively dependent on teachers and peers but also on the learner's decision and engagement in a transformative migration for socio-economic advancement that can be undertaken even in the absence of a teacher and peers.

The MOOC model presents potentials for such learners who are committed to engaging in such a transformative migration. For MOOCs to make a difference in learners' lives, there is a need to link these courses and values for learners. The non-formal learners in Rwanda engaged in serious learning and persevered because they were sure their high performance could definitely lead to their inclusion in the formal higher education system. If learners can see possibilities to live up to their visions and dreams by learning from MOOCs and these courses are flexible enough to enable learners to design their own learning, serious engagement with MOOCs can happen. Hence, the value to a diversity of learners and flexibility that enables the design of one's own learning are seemingly important triggers of engagement in learning from MOOCs.

Acceptance and concerns

The rapid development of xMOOCs seems to have occurred at the right time. These courses attract huge numbers of learners from around the world. After teaching a MOOC, Silberzahn (2014) authored *MOOCs: Because people want to learn*, an article that reflects the rationale behind the interest in MOOCs. The desire to learn is not sufficiently serviced by the existing higher education system in many settings, especially in under-resourced countries. Although the overall completion rate was reported to be less than ten percent, the number of individuals who complete these courses is still far higher than 100 percent of success in a non-MOOC course. Ng (2014) and Silberzahn (2014) argue that the number of learners who completed their respective single MOOC offering is higher than a combination of all students they had taught. It is also worth noting that the MOOC learners who complete these courses engage with their learning despite the lack of formal recognition of their accomplishment. This indicates acceptance of MOOCs on the part of learners.

On the part of institutions, Georgia Institute of Technology has already started offering an accredited Master's Degree in Computer Science entirely based on MOOCs (New, 2014). Similarly, Iversity, the German MOOC company, offers the European Credit Transfer and Accumulation System (ECTS) credit transferable into higher education across Europe in some of its MOOCs. Some other universities that are offering MOOCs give credit to registered students who take these courses and complete additional tasks. Students registered at École Polytechnique Fédérale de Lausanne participate in local study groups for further discussion of the materials of MOOCs offered by this institution and receive credits for successful completion of the courses (Blom, Verma, Li, Skevi, & Dillenbourg, 2013). The acceptance of MOOCs by formal higher education institutions may increase as various concerns around MOOCs are addressed.

One of these concerns is identity check: what is the evidence that the work submitted by the student is their own product? There is also need for a system that

ensures that the MOOC examination taker is the registered student. This challenge is being addressed by proctored final exams, and in cases like Iversity, students who want credit can do so by paying a fee for examination-processing (Iversity, 2013).
There has also been a concern that MOOCs may cannibalize the existing higher education system and cause massive unemployment in the sector as discussed in Anderson (2013, p. 4) and *The Economist* (2014). Rees (2013) articulates the intensity of the threat as follows:

> I think it's time for us non-superprofessors to forcefully explain to our newly famous colleagues how their MOOCs are already adversely affecting the terms and conditions of our employment, and are likely to do so even more in the future. (Para. 11)

The MOOC model can be used for more social good that will have genuine value to academics, learners around the world, and funders. Both the global competitiveness report (Schwab, 2013) and UNESCO's statistics (UNESCO, 2014) indicate that the number of people who are not yet reached by higher education is still high in many countries. Rather than using the MOOC model to reduce the number of academics, it is more appropriate to use this model to reach the unreached by expanding the impact of existing academics to people who are not yet included in education. Similarly, funders would ensure that the impact of the invested funds goes beyond the current higher education reach to include more students.

MOOCs in educational debates
Miscellaneous disputes

The lack of involvement has been observed in some MOOC practices. The University of Virginia, for instance, engaged in partnership with Coursera after an agitation that drew academics and the University President into a confrontation with the university's Board of Visitors (Bogost, 2012; Daniel, 2012; Edmundson, 2012; Pérez-Peňa, 2012; Ripley, 2012; Stripling, 2012). Whatever decision is made, it is more desirable thant either to preservethe way higher education has been working or to engage in educational innovation such as MOOCs to address challenges beyond the traditional system's capacity, creating value for all stakeholders involved. It is this value that provides stakeholders a sense of ownership as a powerful enabler of shared success.
MOOCs have also created disputes between stakeholders in developed societies and those in the developing ones. While stakeholders in developed societies, who dominate the MOOC production industry, see developing settings as a potential market, some higher education stakeholders in the developing settings argue that transferring western education in these setting would not work. This is the position shared by the Vice Chancellor of the African Virtual University in the annual meeting of the Learning International Network Consortium hosted by MIT in June 2013 (Young, 2013). Doubts about MOOC contribution to developing settings seem to be based on the discrepancy between learning conditions in most developing settings and the learning conditions required to take MOOCs.

MOOCs do have quality and contextual relevance issues. However, no course can be claimed to be perfect in terms of quality and relevance to all settings. The more people engage in MOOC practices, the more they learn about and address quality and relevance challenges across different settings. Being open for thousands, if not millions, of people who want to learn but are not included in the higher education system, MOOCs can have a more positive impact than learning nothing.

There is also a need to have same standards for measuring quality and relevant learning for both MOOCs and formal learners to know exactly the difference between the two categories of learning. In the absence of such a shared benchmark, arguments in the MOOC debate are more likely to be based on speculations. On the one hand, MOOC proponents still have to convince the audience with the traditional higher education quality model in mind that MOOCs can be comparable to conventional higher education. On the other hand, MOOC opponents in most countries still have to come up with an alternative that is more inclusive than MOOCs. Therefore, neither of the opposing sides is innocent of a hidden agenda.

It should also be noted that some MOOCs offer better opportunities for students to work on projects that are relevant in their own cultural learning settings. For instance, the Coursera Platform offers tools to personalise one's own learning (Nkuyubwatsi, 2014a). When students are offered freedom to choose projects that respond to their everyday concerns, the courses can be adapted to fit within a local setting. Such freedom grants students the opportunity to bring in their voices and work on projects that matter to them. MOOC platforms also offer students the freedom to repeat, stop and resume presentations any time students want and learn at their most convenient time. Such high personalisation of learning seems to be shared by variants of online education, but it cannot be made possible in the face-to-face mode without exorbitant cost. Therefore, tutorial support in MOOCs is minimal, but personalisation of learning is much higher.

Evidence that MOOCs are beneficial only to learners who already have academic qualifications, mainly those from developed or emerging economies, is emerging in data from universities that pioneered the experimentation of these courses (Grainger, 2013; Ostrow, 2013; Alcorn, Christensen &Emanuel, 2014). Current MOOCs are designed for learners with access to Internet connectivity. However, Internet penetration statistics indicate that less than 50 percent of the world population has such access (Miniwatts Marketing Group, 2012). In developing countries, a significant proportion of people access the Internet via mobile phones not designed for studying MOOCs. Thus, MOOC practices do need to consider the above realities to reach people in under-resourced settings. And yet, challenges like the above could be gradually addressed. For example, although MOOCs are originally online courses, they can be adapted and redistributed using alternative media to reach learners in underprivileged settings.

Contrasting views about MOOC providers' agendas

Provision of access to higher education to learners from all socio-economic backgrounds has been one of the agendas championed by many MOOC providers. This agenda is theoretically linked to Article 26 of the Universal Declaration of Human Rights

according to which "everyone has the right to education" (United Nations, 1948). Article 26 of these Universal Declaration of Human Rights also highlights that higher education shall be made equally accessible on a merit basis. Only a handful of countries such as Denmark, Sweden, Finland and Norway have made higher education freely available to provide opportunity to any of their citizens who wants to study at this level. The Commonwealth of Learning & UNESCO's (2011) predictions indicate that the global higher education demand will grow from 165 million in 2011 to 263 million in 2025. In his interview with Alan Mandell and Nan Travers, Sir John Daniel observes that to accommodate every learner in need of higher education, three or four universities that can accommodate 30,000 students need to be built every week between 2011 and 2025 (Mandell & Travers, 2012). From a global perspective, the rate of construction of new universities is far too slow to match the number of learners who will need access to higher education. This imbalance is mainly caused by the lack of financial resources. MOOCs and their model might be an alternative to accommodate the global growing population that needs access to higher education.

However, a hidden agenda to use MOOCs to drive other stakeholders out of the higher education industry in order to establish monopoly is often suspected. Such suspicion may be invited by restrictions on accrediting learning from MOOCs imposed by some companies. For instance, the accreditation of learning accomplished via Coursera MOOCs requires written permission from the company (Coursera, 2014), which is a strategy to protect economic interest, according to Conrad et al. (2013). MOOC providers have, however, been seeking agreement with relevant institutions and governments that hope to use these courses to expand education and skill development in developing countries. As a result, joint initiatives such as Open Learning between Coursera and the World Bank (World Bank, 2013), SocialEDU between EdX, Facebook, Airtel, Nokia and the Government of Rwanda (EdX, 2014), as well as Knowledge Network between Coursera, the Government of Trinidad and Tobago and the University of Trinidad and Tobago (Coughlan, 2014) have emerged. These joint initiatives hint at enormous demand that is not serviced by the conventional higher education in many developing countries.

Foreign-driven MOOCs initiatives and educational needs in developing settings

MOOCs may have the potential to contribute to education in developing countries if there is convergence between different learning perspectives and the local challenges that result in new practices that address real problems in specific settings. No single open education initiative is likely to be an effective solution in all learning settings. In the Open Educational Resources university (OERu) initiative, for instance, students who learn on their own from Open Educational Resources (OER) are supposed to only pay a fee for services related to assessment, certification and accreditation. Based on a pilot OER-based course developed at the University of Southern Queensland, Conrad et al. (2013) estimate the cost of OER-based bachelor's degree at $6,759. The authors argue that this is a substantial reduction to tuition fee when compared to the cost incurred for a complete bachelor's degree in the USA. However, $6,759 is still higher than the total tuition fee for a bachelor's degree in many developing countries. Another example is the

Kepler University MOOC initiative in Rwanda which is claimed to be opening up higher education in Rwanda at only $1,000 (Kamenetz, 2013). The untold story is, however, the fact that $1000 is higher than tuition fee in any local higher education institution. Tuition fee in public higher education in Rwanda is Rwfr 600,000 per year: approximately $870. In private institutions, the fee is much lower: Rwfr 450,000 (about $652) in many of them. Therefore, the initiative would contribute to opening up access to higher education in Rwanda if a four-year degree costs $1,000 but no contribution is expected if the $1,000 cost is per year.

Despite the low tuition fee, coupled with the limited student loan, access to higher education in Rwanda is still below 10 percent. Schwab's (2013) and UNESCO's (2014) statistics estimate this access to be 5.5 percent and 7.22 percent respectively. In such low-income settings, education quality does not only accrue from financial resource invested but also from acceptance of work hard in unsatisfactory conditions. The tendency to overestimate financial resources as the only enabler of educational quality may lead to temptation to freeze all resources that are available in low income countries for very few schools from which an overwhelming majority is excluded. An alternative view on quality would rather promote creating value for all players for ownership development, sharing available resources, and learning to learn with limited resources. All stakeholders would contribute to quality improvement in different ways: investment of limited funds and investment of effort in learning within prevailing conditions for improving access to education. Effort invested in transformative learning can, for instance, make more difference than financial resources that are lacking in underprivileged settings. Therefore, for MOOC initiatives to have positive impact on people in developing societies, they need to be tailored to their needs and dreams as well as living conditions.

MOOCs and open licensing

Open licenses grant permission to reuse, change, add to and redistribute different learning materials. Some examples of open licenses are the six variants of Creative Commons (n.d). The first, and the most accommodating, license is Attribution (CC BY) which grants permission to distribute, remix, revise, and create derivative work, even for commercial purposes, as long as credit is appropriately given to the original creator. The second license, Attribution-NoDerivatives (CC BY-ND), allows for redistribution for commercial and non-commercial purposes, as long as it is disseminated unchanged and in whole, with credit to the original creator. Attribution-NonCommercial-ShareAlike (CC BY-NC-SA), which is the third license, grants permission to remix, revise, and create derivative work for non-commercial purposes, as long as credit is appropriately attributed to the original creator and the new creations are licensed under the identical terms. The fourth license, Attribution-ShareAlike (CC BY-SA), allows the remix, revision, redistribution and creation of derivative work even for commercial purposes, as long as credit is attributed to the original author and the new creations are licensed under the identical terms. The fifth license, Attribution-NonCommercial (CC BY-NC) grants permission to remix, revise, and redistribute the content for non-commercial purposes as long as credit is attributed to the creator. Derivative work can be created as long as

the original creator is acknowledged and the new creation is used non-commercially, but the derivative work does not have to be licensed under the same terms. The final license, Attribution-NonCommercial-NoDerivatives (CC BY-NC-ND) is the most restrictive of these six licenses. It only allows the reuse and redistribution of the content as long as the credit is attributed to the author, no change was made to the content, and the use is only non-commercial. In addition to the six Creative Commons licenses, some contents are available in the public domain, which means there is no restriction about their use.

Most of the early cMOOCs were delivered in the public domain and their content consisted mainly of the learners' contributions. Courses with a connectivist structure are still offered, though not as extensively as xMOOCs. The example of such courses is *Open Content Licensing for Educators (OCL4Ed)*. This course consists of the materials available in the public domain or copyrighted under Creative Commons licenses. *OCL4Ed* has been repeatedly offered by the Open Educational Resources Foundation (OERF) in partnership with the Commonwealth of Learning (COL) chair in OER at Otago Polytechnic, the UNESCO-COL chair in OER at Athabasca University and the Creative Commons Aotearoa New Zealand.

Extension MOOCs (xMOOCs), which emerged in late 2011, were open in terms of enrollment without restriction and taking the courses free of charge, but the content was not openly licensed. Most of these xMOOCs are based on a didactic teaching pedagogy and consist of video lectures, reading materials, forum discussions, quizzes and final exams that are not openly licensed. However, xMOOCs that are based on openly licensed materials are also emerging. Some courses on the FutureLearn platform such as *Sustainability, Society and You* offered by the University of Nottingham are based on materials copyrighted under Creative Commons licenses. Similarly, OpenupEd, the pan-European MOOC initiative, seems to be committed to releasing learning content under CC BY and CC BY-SA licences (OpenupEd, 2013). These variations of Creative Commons licenses provide freedom to adjust MOOCs to local learning settings. Therefore, if open licensing becomes more widespread, MOOCs could enable the re-dissemination of the content via alternative media that are accessible to learners in different socio-economic settings.

Contribution of higher education stakeholders for maximizing learning from MOOCs

Harnessing benefits from opportunities offered by MOOCs requires a collective engagement of all stakeholders involved in higher education. Governments, accreditation bodies, higher education institutions, academics and students -- each of these stakeholders can contribute in unique ways. New practices and mindsets need to be adopted as discussed below.

Governments

Policies play a critical role in using and maximizing the benefits from opportunities that are openly available to people. Governments that are interested in economic

development based on knowledge, skills and expertise can create policies that encourage the harnessing of MOOCs that are already openly available and help develop new and open types of MOOCs. In developing such policies, value can be created for each category of stakeholders to have ownership in a collective engagement. Open education policies that underpin open content, open assessment, open certification and open accreditation and emphasize more the development of competences and less the time spent at a learning institution can stimulate students' maximal engagement with existing MOOCs. Open education policies can also help people who have no access to formal education to take open courses.

Governments can also help with orienting efforts from all stakeholders in higher education towards a common vision. For this to happen, governments and other stakeholders would need to share their agendas, concerns and values. These agendas do not need to be exactly the same for all stakeholders. However, it is important to identify a niche, a common ground between these agendas and exploit that. Collaboration can be established so that effort invested by one category of stakeholder is beneficial not only to themselves, but also to others. For this reason, a participatory approach is needed in the endeavour to maximize the benefits from MOOCs. In other words, all stakeholders need to see their stake in order to have ownership and engage collectively for shared success. In contrast, when the agendas and ambitions are not interconnected, and some stakeholders are simply subjected to compliance, their productivity is likely to be low. Consequently, significant amounts of talent might be lost simply because the link between various stakeholders' agendas, interests, needs, values and concerns were not explored. Therefore, the feeling of ownership is critical for various stakeholders to reach their fullest potentials.

Accreditation bodies

Accreditation bodies need to give more credit to institutions that value the amount of time students spend working seriously on their learning as reflected in the competences they develop. These bodies would encourage institutions to establish a common assessment pathway through which both formal and non-formal learners pass in order to reward their accomplishment, based on competencies demonstrated. Many accreditation systems are based on the widely shared view that formal students perform better than non-formal students. However, a common assessment system for both formal and non-formal learners enabled some non-formal learners in Rwanda to outperform an overwhelming majority of formal students to gain a place in the formal higher education system. So far, no research seems to have been conducted to determine the exact statistics of non-formal learners who benefited from this type of pathway, but a study on some cases of such learners who invested their effort because they were aware that their accomplishment would be recognized and how this investment transformed their lives is going on. This inclusive open assessment enabled the integration of some non-formal learners who would not otherwise gain access to higher education. The desire to monopolize accreditation power (Anderson, 2013; Stewart, 2013) might lead to exclusive education for the privileged. This practice can trigger the intervention of other players, which may lead to the vulnerability of the

monopolist if the competitors outperform them. Therefore, an inclusive accreditation model that values competencies and equal opportunities based on merit can stimulate best practices among learners, educators, and institutions.

Accreditation bodies may also need to work closely with their counterparts around the globe, prospective recipients (employers and others) of graduates, and higher education institutions in their jurisdictions. Working with other accreditation bodies and potential recipients of graduates would help accreditation bodies map competencies expected from graduates to be global citizens. Prospective employers and other recipients of graduates would help outline specific and practical competencies that need to be prioritized. As for higher education institutions, they would help students develop competencies identified by accreditation bodies as a priority. This collaboration would contribute to bridging the gap between competencies needed on the labour market and graduates' abilities (Barber et al., 2013; Trucano, 2013). Therefore, for competencies needed in the labour market, certification and accreditation need to be interconnected.

Higher education institutions

Recent developments in MOOCs have made self-service learning, collaborative learning, and personalized learning more practical. Regardless of learning philosophies that underpin MOOCs, learners can go their own way and take what they need from these courses. For their part, higher education institutions in many settings seem to be unprepared to let learners take full advantage of these courses. Traditional higher education in underprivileged settings tends to be mainly built around the library and academics as the primary sources of educational information. When tuition fees are raised in the attempt to increase learning resources, people from low income backgrounds tend to be excluded from education because they cannot afford it. In this way, equality in terms of educational opportunities is compromised. Although MOOC platforms are democratizing access to education for the minority connected to the Internet, their model promises the possibility of opening access to education to include more learners as they gain access to the Internet. MOOC students who participate in online learning communities created in these courses develop multicultural literacy (Nkuyubwatsi, 2013) and digital competencies that are necessary to function in today's digital world. These are opportunities that are not offered sufficiently in traditional higher education institutions, especially in many developing settings. A lot of MOOC content and forums are available to enrolled students free of charge. Additional tuition services may be provided to students who need it and are ready to pay for it. Rather than being required for any student, additional tuition service can be offered only when demanded. For those who can learn using tools offered by the platform for free, they would only pay for services they need, such as proctored assessment, accreditation and certification if the model is developed in such a way.

Credit for successful MOOC learning has recently emerged, and this practice may expand and cut down the cost on the part of learners and institutions. The Georgia Institute of Technology's MOOC-based master's degree in Computer Science and iversity's ECTS credit discussed earlier exemplify the use of the MOOC model to

provide cost-effective education. The Georgia Institute of Technology's MOOC students are expected to pay approximately $7,000 (Udacity, 2014) instead of $25,000 (in-state tuition fee) or $60,000 (out-of-state tuition fee) for the same degree in its on-site format (Dodson, 2013). As for iversity, students learn for free and those who want ECTS credit pay only an examination processing fee, as discussed earlier.

In order to create value to students in their respective settings, many higher education institutions may need to adopt similar practices. They may need to open assessment and qualifications to MOOC students who meet the same standards as conventional students. Having the same standards for both formal and non-formal students is vehemently rejected under the claims that MOOCs cannot replace conventional higher education. The concern that MOOCs may replace the existing higher education systems seems paranoiac, and the replacement idea diverts from the core problem both formal higher education and MOOCs can address together. Instead of contrasting MOOCs and other modes of higher education as belligerents in a zero-sum game, all modes of learning, including MOOCs, should be seen as complements that can help provide education to more people who want to acquire education. In an earlier publication (Nkuyubwatsi, 2014b), I discussed how different learning modes can help learners achieve significant milestones in learning, and how accomplishment in one mode can bridge across other learning modes.

The existing higher education system has only provided access to 51.66 percent of the world population, and in some countries, this access is still less than 10 percent (UNESCO, 2014). Complementing the conventional higher education with MOOCs which are scalable can enable the inclusion of the 48 percent who are not yet included. Having the same standards for both formal student and non-formal learners (including MOOC students) can help avoid any discrimination against non-formal learners who have developed capabilities that are equal to those developed by conventional students when it comes to access to employment and further education opportunities. A competency-based qualification for both formal and non-formal learning awarded based on same standards would help achieve the inclusion of non-formal learners.

Academics

The role of academics has traditionally been perceived as indispensable for successful learning. This perception is informed by the *pedagogy of scarcity* rather than the currently increasing *pedagogy of abundance* (Weller, 2011, pp. 90-91). *The pedagogy of scarcity* positions the teacher as an expert channel through whom limited resources and information are accessed by learners. In circumstances marked by the insufficiency of learning resources, the scarce materials are the prerogative of teachers who disseminate the information they wish to convey to students via lectures. However, with recent initiatives in open education, OER and MOOCs, the teacher no longer holds such a monopoly on educational resources, and the availability of learning resources enables learning in settings where competent teachers are not available. Stewart (2013) observes that MOOCs allow the shift of students' and teachers' roles, and that the central position and power of the teacher diminishes as the number of participants grows (p. 235). This observation is shared with Barber et al. (2013) who argue that the

power and the monopoly of lecturers and university libraries are decreasing as the content becomes increasingly available for free (pp. 16-17). This is particularly the case in MOOCs where students post their queries in the discussion forums. Most students' questions posted in the forums receive speedy responses from their colleagues, more experienced learners in many cases. In other words, some of the teacher's power and responsibilities are decentralized and delegated to learners who provide support to their peers.

Academics around the world have been engaging in lifelong learning, but many teachers in developing societies tend to resist it. The adoption of a lifelong learning mindset is critical for any academic who wants to remain at the top of educational innovation. As MOOCs diversify and offer new opportunities for higher education, they pose a challenge for many academics, especially those who are not confident in the use of educational technologies and are not willing to keep changing how they work. In many developing settings, adjustment to emerging media and practices, including the ones related to MOOCs, will be necessary for such academics to thrive. However, this learning does not necessarily need to be done at the same speed and in the same way across the globe. Learning technologies and media reach various settings at different speeds and times. But in all contexts, academics need to appreciate the educational value of new media available in their respective settings, maximize educational benefits from those media and be open to new media that would improve the quality of education provided in their specific settings.

In short, a migration attitude will enable them to move across different generations of technologies. New technologies and media require learning how to use them for accomplishing different goals, and their continuing emergence implies lifelong learning and migration. MOOCs and open resources may require academics to shift emphasis from lecture to content curation (Cormier & Siemens, 2010; Kuipers, 2012; Philips, 2012) and content aggregation (Cormier & Siemens, 2010; Philips, 2012). MOOCs are a part of a new development that enable constant learning and adaptation that may be critical for academics to continually improve their practices.

Students

With the current open availability of information, educational resources and courses, students can play a critical role in their own transformation via learning. Economic difficulties around the globe seem to have alerted governments that traditional financing of higher education is no longer sustainable. There have been budget cuts in public higher education institutions, and public funds allocated to those institutions have decreased in many countries, both in the developed and developing settings. In December 2012, a new policy on the UK Government's funding to higher education institutions was published (Department of Business Innovation and Skills, 2012). Under this policy, students were required to pay more of their tuition fee, but student loans were made widely available and more financial support was made available for students from low-income families. More drastic measures have been undertaken in financing public higher education in some developing countries. In Rwanda, for instance, government funding to public higher education institutions decreased at the rate of 25

percent in 2009, and another 25 percent decrease was expected in 2010. However, this was not enough to solve the financial problem. In 2013, seven public higher education institutions were merged into one university known as The University of Rwanda, for further reduction on public higher education funding. Furthermore, an attempt to cancel student loans for public higher education was undertaken, but this plan was dropped after a massive complaint from an overwhelming majority of students.

Such governmental decisions on financing higher education might hint at the need for new attitudes towards learning. When resources are depleting, people need to learn to use what is available to them and plan their own development rather than remaining passive waiting for the government's generosity. Barber et al. (2013) highlight that the challenges facing higher education call for citizens who can take responsibility for changing their own lives and for changing the world around them. These challenges call for seizing the opportunities to learn throughout life, enabled by the increasing availability of free courses and learning resources, and to use what is learned to solve current and future problems (p.3). Many students, especially those from disadvantaged families will need to embrace and invest in learning within desperate conditions. Ultimately, they may have better living conditions as a reward from their dedication and persistent investment in learning. Financial difficulty has been a global concern and has affected funds for higher education institutions, but learners who make decisions that are appropriate for their own learning may be rewarded. Therefore, to be successful in an educational world faced with funding depletion, students will need to grab available opportunities, mainly MOOCs and other open course arrangements, learning for their own development rather than learning for compliances.

Successful learners will also need to move beyond their local area and learn various subjects from a diversity of institutions. Such attitudes will help them develop as global citizens who can empathize with their counterparts from various cultural backgrounds. However, such change does not take place instantly. To be successful, students may need to see learning opportunities arising from failure. They may need to be aware that failure is a learning opportunity and the more they commit to learning, the better they become. Learners who consider learning as a self-determined migration that aims at moving across different levels of life conditions through competence development will have more chance to emerge as experts. Learners might also need to move across learning techniques, learning environments and learning modes to maximize learning opportunities that exist in their respective settings. In the future, learning success is more likely to depend on the ability to quickly adapt with various learning environments and modes.

To sum up, different stakeholders in higher education need to move together towards a new approach and culture that promotes different modes of learning for development. This collective move involves continuing entrepreneurial learning, trying out new ways of learning and educational delivery, recognizing that failure is a normal experience in the learning and professional practice that provides opportunities to grow and capitalizing on every player's strengths to maximize benefits. Establishing and protecting access to education as a fundamental human right has been an aspiration since the 1948 Universal Declaration of Human Rights. However, access to higher education has been an exclusive privilege in many countries and will become more so if

measures to satisfy the growing demand (Commonwealth of Learning & UNESCO, 2011) are not taken. The current development of MOOCs could offer an opportunity for success in making access to higher education a basic human right. Partnerships among stakeholders in higher education would contribute to making higher education more accessible. Such partnerships are needed between MOOC producers and stakeholders in higher education in settings that are not producing MOOCs. What all partners need is to carefully create values that matter to learners in a diversity of settings so that they engage in learning in diverse ways.

To maximize benefits from emerging modes of education, various partners and stakeholders would need to innovate together. While western MOOC producers are experts in developing high quality learning materials, they have fallen short in designing for the learning of people in disadvantaged settings (Alcorn et al., 2014; Ostrow, 2013). Learners from disadvantaged backgrounds and those from remote settings with no access to Internet connectivity (or even to electricity), are the ones who have expertise in learning within such conditions. Similarly, educational stakeholders in remote settings have a better understanding of challenges and opportunities for education provision in such settings. This is a niche in which stakeholders in underprivileged settings would innovate to address challenges beyond MOOC producers' scope of expertise. Bringing together MOOC producers' expertise in high quality material development and underprivileged-setting educators' understanding of the learning conditions in their respective settings would help creating beneficial partnerships. Therefore, collaboration that values each player's unique contribution can help learners across geographical, cultural and socio-economic learning settings get the most from MOOCs.

Conclusion

The MOOC development that is believed to be the potential game changer in higher education has also catalyzed concerns among academics and institutional leaders in both developed and developing societies. While the agenda most claimed by MOOC pioneers is opening access to higher education globally, there have been fears of a masked agenda to drive other stakeholders out of the higher education industry in order to monopolize the market. MOOCs and the existing higher education modes do not need to be considered as enemies in a zero-sum game. Instead, these different modes should be seen as allies in the campaign of opening up higher education. This kind of mindset shift will help maximize the benefits from MOOCs and other learning modes.

The emerging adoption of open licenses for MOOCs' content may enable various players across geographical settings to expand the impact of their educational practices in their respective communities and societies. A collective engagement of all stakeholders in higher education is needed to gain maximum benefits from those opportunities. Governments' contributions are mainly expected in the setting up of open education policies that promote open sharing of educational content, open assessment, open certification and open accreditation. Accreditation bodies would contribute in setting up a framework for accrediting institutions that abide to open assessment and certification, based on measurable competencies. For their part, higher education institutions would extend their impact in their respective communities and societies by

adopting the use of open content and open assessment services that underpin an open competency-based certification. Academics need to adopt new open-education friendly roles as content adapters, mentors, and assessors. They also need to keep on learning how to use new learning technologies and keep up with rapid development in the field of open education. As for students, they need to be independent and self-guided learners who take the most from existing open educational opportunities and learn to become global citizens. Through these collective engagements, stakeholders in higher education can build together opportunities for open education for the learner's development that would lead to a better knowledge-based global community.

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